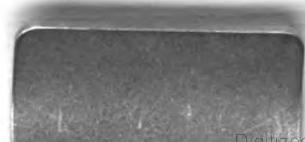


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MECHANICK EXERCISES:

Or, the Doctrine of

Handy-works.

Applied to the Art of

Printing.

The Second VOLUME.

By *Joseph Moxon*, Member of the Royal
Society, and *Hydrographer* to the King's
Most Excellent Majesty.

L O N D O N.

Printed for *Joseph Moxon* on the West-
side of *Fleet-ditch*, at the Sign of
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MECHANICK EXERCISES:
Or, the Doctrine of
Handy-works.
Applied to the
Compositors Trade.

P R E F A C E.

In a strict sense, a good Compositor need be no more than an English Scholler, or indeed scarce so much; for if he knows but his Letters and Characters he shall meet with in his Printed or Written Copy, and have otherwise a good natural capacity, he may be a better Compositor than another Man whose Education has adorn'd him with Latin, Greek, Hebrew, and other Languages, and shall want a good natural Genius: For by the Laws of Printing, a Com-

Compositor is strictly to follow his Copy, viz. to observe and do just so much and no more than his Copy will bear him out for; so that his Copy is to be his Rule and Authority: But the carelessness of some good Authors, and the ignorance of other Authors, has forc'd Printers to introduce a Custom, which among them is look'd upon as a task and duty incumbent on the Compositor, viz. to discern and amend the bad Spelling and Pointing of his Copy, if it be English; But if it be in any Forrain Language, the Author is wholly left to his own Skill and Judgement in Spelling and Pointing, &c. his Copy, and Correcting the Prooves, unless they be Latine, Greek or Hebrew, for to those Languages there is generally a Corrector belongs to the Printing-House: And how well other Forrain Languages are Corrected by the Author, we may perceive by the English that is Printed in Forrain Countries.

Therefore upon consideration of these accidental circumstances that attend Copy, it is necessary that a Compositor be a good English Schollar at least; and that he know the present traditional Spelling of all English Words, and that he have so much Sence and Reason, as to Point his Sentences properly: when to begin a Word with a Capital Letter, when (to render the Sence of the Author more intelligent to the Reader) to Set some Words or Sentences in Italick or English Letters, &c. But of this more at large in ¶. 6.

Thus much of his qualifications: Now to his Taask.

The Master-Printer gives him his Copy, and directs him to his standing Place or Case, and orders him Letter to Work withal.

If his Case want Papering, as all New Cases do, and many times old, He must Paper his Case. §. 22.

§. 22. ¶. I. *Of Papering and Laying the CASE.*

THE *Compositor* sends the Boy to the *Master-Printer*, or to him that attends the Warehouse, for *Half a Quire*, or a *Quire*, or so much as he guesses he shall want, of good strong *Wast-Paper*, and cuts it into so many several Scantlins as the number of each Scantlin of his *Boxes* in his *CASE* are; but he cuts his *Papers* so large, as each *Paper* may ly double in its *Box*, and have enough besides to fold almost half way towards the middle of each *Paper*, and also e-nough to turn up again against the fides of each *Box*, about the thickness of a *Pica*, or an *English*, above the bottom of the *Box*; and its *Paper* on all its fides, except the upper fide of the *Box*, which, as near as he can, he leaves no turning up of *Paper* to, because the tendency the whole *CASE* has downwards by its a-slope position, the *Letter* in each *Box* tends also downwards, and therefore is not so apt to get between the *Paper* and that fide of the *Box*, as between the *Paper* and the other fides of each *Box*: But yet that upper fide, and all the other fides of the *Box*, he *Papers* so smooth and tight, that he leaves no wrinckles in the turnings up against the fides of the *Box*; but if there be any, drives them carefully into the corners of the *Box*, lest his *Letter*, especially if it be Small, should get into the openings of those Wrinckles

Wrinkles, and in time work their way under the Paper.

Having *Paper'd* his *Cafe*, he considers how the rest of the *Cases* in that *House* ly, *viz.* into what *Boxes* the several *Letters* are to be disposed; for they are not in every *Printing-House* disposed alike, and accordingly he applies himself to fill his *Cafe* with *Letter*.

If a *Fount* of *New Letter* be brought home from the *Founders*, the *Compositor* has no more to do, but to fill each *Box* in his *Cafe* with so many of each sort as each *Box* will hold, and fall to *Composing* till he has emptied his *Cafe*; which the same way he fills again, and *Composes* on again till the whole *Fount* be *Set up*: But when he has no longer any *New Letter* to work upon, he must *Distrubute* some former *Set Forms* to fill his *Cafe* withal.

And before I shew you the Rules and Method of *Distrubuting* and *Composing*, it will be necessary I say somewhat of the *Cafe*, and *Laying* it.

By the *Cafe* is meant, in *Printers* common diolect, a *Pair of Cases*, *viz.* the *Upper* and the *Lower-Cafe*: They are described with the most common way of *Laying* them, in Plate 2. A the *Upper Case*, B the *Lower Case*. The *Upper Case* is devided into Ninety eight *Boxes* all of equal size; but the *Lower Case* is devided into but Fifty six *Boxes*, and those of four different sizes (as you may see in the Figure) by the Frame and Black streight Lines representing the several Partitions. The manner how the several sorts of *Letters* are disposed in the several *Boxes*, is called, *Laying of the Case*, where in the *Upper Case* you see
Capital

Capital A Ly in the uppermost *Box* on the Left hand, *B C D E F G* succeeding it in that Row to the Right hand, as far as the broad Partition in the middle of the *Cafe*; under *Capital A* lies *Capital H, I K L M N O* orderly succeeding it to the right hand, as far as the great Partition in the middle of the *Cafe*: But the Figure being plain, I refer you to it.

The *Lower Cafe* is not devided according to an orderly succession of the *Alphabet*, in Ranks; for those *Letters* that are most used are laid in the biggest *Boxes*, about the middle of the *Cafe*, That the *Compositors* hand may have the quicker access to them. See the Figure.

¶. 2. *Of Rincing a Form of Letter, in order to Distributing it.*

After the *Press-man* has *Wash'd a Form*, he brings it to the *Rincing-Trough*, and rears it a little a-slope on one of the ends of the *Chase*, either against a convenient place of the *Frame* of the *Rincing-Trough*, or towards the Wall; for so plac'd, the *Face of the Letter* runs leſs hazzard of receiving damage, and the *Form* stands in a proper position for the *Compositor* to rear a *Letter-board* against the backſide of it.

The *Compositor* therefore brings a *Letter-board*, and puts the Face of it against the back-side of the *Form*, and draws *Form* and *Letter-board* toward him, leaning them against his Knee till he can conveniently grasp about the middle of the fides of the *Chase* and *Letter-board* between his Fingers under the *Board*, and his Thumb upon the *Chase* and *Furniture*: And if

if the *Form* be not too heavy, in this position he lifts it up to the *Rincing Trough*; but if it be too heavy, as most commonly it is, He lifts it up in this position till he brings the upper edge of one of the long sides of the *Letter-board* to rest between his Belly and Stomach, and then sets *Letter board Form* and all in the *Rincing-Trough*, letting the hither side of the *Board* rest upon the hither Ledge of the *Rincing-Trough*; that the *Form* may tilt downwards.

When it is on the *Rincing Trough*, he gets the *Mallet* and *Shooting-stick*, and holding the *Mallet* in his Right hand, and the *Shooting-stick* in his Left, he places the Foot of the *Shooting-stick* (that is the thin end of it) against the narrow ends of each *Quoin*, and knocking with the *Mallet* upon the Head of the *Shooting-stick* as gently as he can to drive them back, he loosens every *Quoin*; and this is call'd *Opening of the Quoins, Unlocking of the Quoins, Opening of the Form, and Unlocking of the Form*.

But in the *Unlocking of the Form*, he observes these three Circumstances:

First, He begins at the *Foot-Quoins* of a *Quarter*, and loosens them; then with his Fingers and Thumb he puts them up again pretty stiff; yet not so stiff, but that he can again with his Fingers and Thumb loosen them.

The Reason why he opens the *Foot-Quoins* first, is, because the *Letter* is less subject to *Squabble* between *Line* and *Line* (that is *Head* and *Foot*, the length of the *Page*) than it is between side and side (the breadth of the *Page*): For all the *Letters* of a *Line* being of the same *Body*, are all of the same size
in

in their parallel bounds; and the two fides of the *Letter* being generally considerably broader than the Thickness of the *Letter*, are held by their breadth and flatness faster and closer together in a motion towards the *Head* or *Foot* of the *Page*, than they are a-thwart the *Lines*, there being generally many thin *Letters* and *Spaces* in a *Line*, whose thicknes is very little considerable to their *Body* or parallel bounds: So that if the *Form* be loose, those Thin *Letters* and *Spaces* not having a Thickness proportionable to their *Body* to keep them in their proper Square, their Thin Edges twist them about, and one *Letter* very seldom twists alone, but forces many others (perhaps in some *Lines* above and below it, and on each side of it) out of its square position.

But the *Foot-Quoin* being thrust up again with the Fingers, that the *Lines* may joyn again after they were knock'd open with the *Mallet* and *Shooting-stick*, make the Thin *Letters* in the *Lines* less subject to *Squabble* (as not having the room to twist about) because *Opening* the *Foot-Quoins* afterwards with the Fingers, offers less violence than the smart knock of a *Mallet*.

Secondly, He holds the *Shooting-stick* much aslant to the *Letter-board*, so as the Foot of it touch not the Face of the *Letter-board*, lest with knocking upon the *Shooting-stick* (it being hard Wood, and the grain running downwards) the Foot should batter and spoil the Face of the *Letter-board*.

Thirdly, He *Unlocks* the outermost, viz. the broadest *Quoins* first, and then with his Fingers thrusts them pretty close up again, unless the *Form* he *Un-lock*

lock be a great *Letter*, for then he observes not this Circumstance so nicely; then the other *Quoin*, or (according to the bigness of the *Form*) *Quoins*.

Having *Unlock'd* the *Foot Quoins*, he *Unlocks* the *Side Quoins* in the same manner and order; and being provided with a Pail, or a great Pan full of fair Water, and a *Wooden Dish*; he takes a Dish full of fair Water, or more, if the *Form* require it, and throws it upon the *Form*, till he have so well wetted it, that the Water may sink between the *Letters* in the *Form*, to hold and keep every *Letter* contiguous to its next.

Then he *Opens* the *Quoins* pretty loose, the *Foot Quoins* first, and in *Opening* them he considers the *Body* of the *Letter*, whether it be Great or Small, and accordingly he *Opens* them; for at the *Foot* he *Opens* them about the thickness of the *Body* of the *Letter*: But on the *Sides* not above half the *Body*.

By *Opening*, you must now understand removing the *Quoins*, till they stand loose, or distant from the *Furniture*, the *Body*, or half the *Body* of the *Letter*.

He *Opens* but one *Quarter* at a time, *viz.* one of the hithermost *Quarters*, till he have well *Rinc'd* that, which when he has done, with his Fingers he thrusts the *Quoins* of that *Quarter* stiff up again, aswell that it may be the less subject to *Squabble* or *Break*, as that the Water may the better be squeezed out from between the *Letter*; when he comes to *Distribute* it.

Having thus *Opened* the *Quoins*, He also *Opens* the *Furniture*, *viz.* the *Head sticks*, and the *Inner Side-sticks* and *Gutter-sticks*, if the *Form* have any, to make himself the more room to *Open* the *Letter*: The Balls of the three first Fingers of each Hand he places near

near the ends of the *Head-stick*, and *Opens* it by taking as good hold as he can of so much of it as stands above the *Cross* of the *Chase*, drawing the *Head-stick* towards him about half the *Body* of the *Letter*. And in the like manner he *Opens* the inner *Side-sticks*, but draws them towards him about a quarter of the *Body* of the *Letter*. Yet sometimes this Office is not perform'd with the three Fore-fingers of each Hand, but with the two Thumbs; and this is when the *Quarter* of *Letter* stands between the *Head* or *Side-sticks*, and then he places his two Thumbs near the ends of the *Sticks*, as before he did his Fingers, and thrusts the *Sticks*, *Letter* and all, from him.

And having *Opened* the *Quoins* and *Furniture* of one *Quarter*, he also *Opens* the *Letter*, that it may receive the Water more plentifully: He *Opens* the *Letter*, by fixing the Balls of his Fingers of both his Hands upon the *Face*, and so thrusting and joggling it from him, and drawing it towards him from *Head* to *Foot*, and from *Side* to *Side*, and then throws a good Dish full or two of Water upon it, and with the Balls of his Fingers still rubs upon the *Face* of the *Letter*, that by shaking and joggling the *Letter*, the Water (e're it sink through the *Letter*) may the better *Rince* away that *Ly* that by the *Press-mans* washing soak'd into it: And this joggling the *Letter*, and throwing on fresh Water he continues till the Water that spurts out from between the *Letters* by this joggling, be as clear as it was when it was thrown on, and then, and not till then, he knows his *Quarter* is well *Rinc'd*: Then with his two Thumbs, one placed

placed on the side of the *Foot-stick* and the other on the side of the *Side-stick*, as near as he can, he thrusts both at once towards their opposite *Cross*, and so thrusts the *Letter* and *Furniture* close up again: And that the *Letter* may not be in danger of *Squabbling* or *Breaking*, he thrusts the *Quoins* loofly up again also.

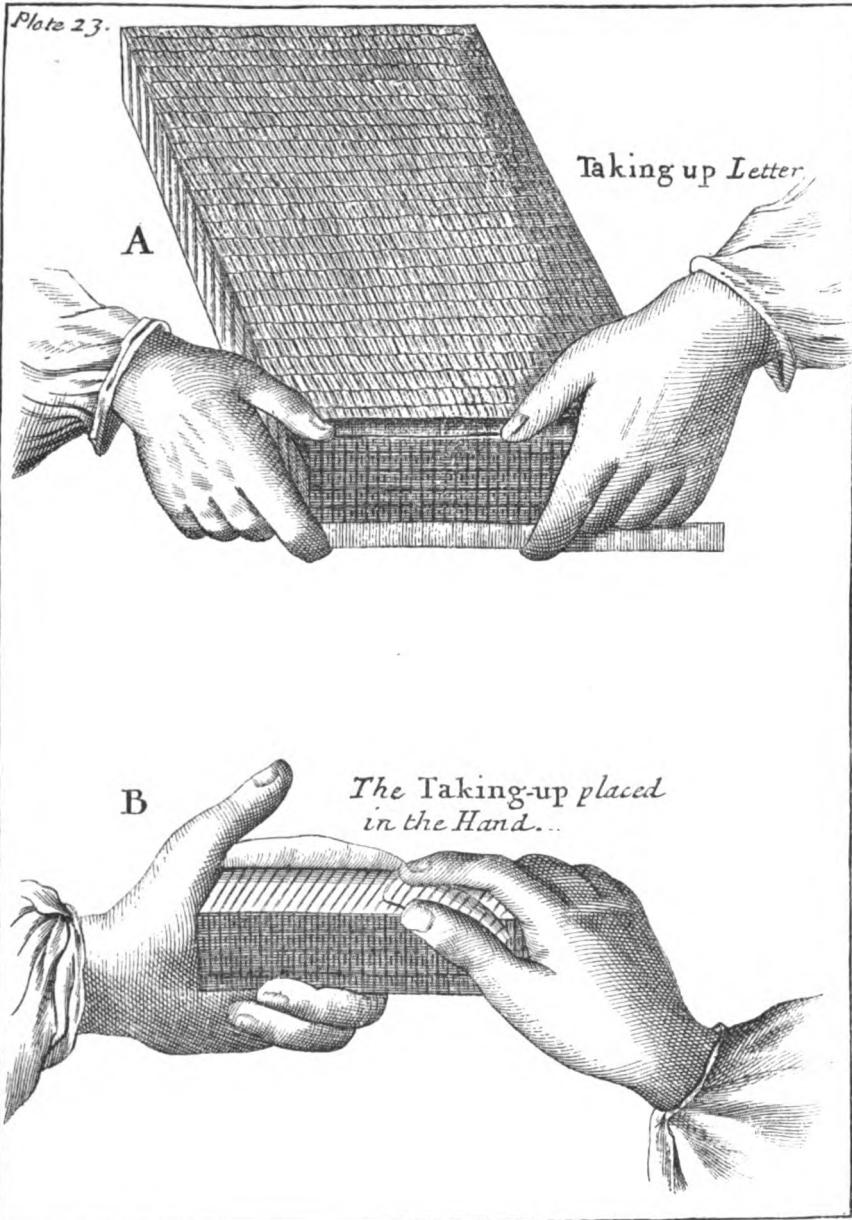
As he *Open'd* and *Rinc'd* this first *Quarter*, he *Opens* and *Rinces* the others.

The reason why he *Opens* and *Rinces* the hithermost *Quarter* first, is, because the Water that descends from the hithermost *Quarters* does in a degree help to *Rince* the nethermost also.

Having thus *Rinced* the whole *Form*, and with his Fingers shut it up again, he lets it stand a little while to drain; then grasping the two ends of the *Letter-board* a little beyond the middle, with his Fingers underneath, and the Thumb-balls of his two Hands upon it, he sets one side of the *Letter-board* against the bottom of his Stomach, and carries *Letter-board*, *Form*, and all to the *Distributing Frame*.

Then he falls to *Stripping* of one *Quarter* first: Taking the *Quoins* quite out, and laying them upon the *Face* of the *Letter*, either on the same or another *Quarter* (if he *Strips* but one *Quarter* at once) with their ends standing the same way they stood in the *Chase*, and in the same order of succession; then he removes the *Side* and *Foot-sticks* to their respective sides, close to the inside of the *Chase*, and again removes the *Quoins*, laying them in the same order he laid them upon the *Face* of the *Letter*, upon the upper sides of the *Side* and *Foot-sticks*, and *Chase*; then

Plate 23.



then, as I told you before, how he *Opened* the Inner *Side-sticks*, just so again he not only opens them, but by the *Side* and *Head-sticks* he draws or slides the *Letter* from the *Crosses*, that he easily takes them out if he pleases; or if he have room enough to come at the *Letter* without, he lets them stay in.

Thus the first *Quarter* is *Script*, and so the other *Quarters* successively, in order to be *Distributed*.

¶ 3. Of Distributing.

The *Compositor* seeks among the *Furniture* for a *Riglet*, a little longer (about a *Pica* or *English*) than the *Line* of the *Page* he is to *Distribute*; or else he cuts a *Riglet* to that length (this *Riglet* is called a *Distributing-stick*) and coming to his *Script Form*, or *Quarter* of the *Form* he is to *Distribute*, he places one flat side of the *Riglet* against the Head of the *Page*, and claps the Balls of his two Fore-fingers behind it, and the inner Joints (next his Fore-fingers) of his middle Fingers he claps against the ends of so many *Lines* as he intends to *Take up*, supposing it *Pica*, about Seven; and presses them pretty close to the sides of the *Lines*: Then with the ends of the Balls of his two Thumbs he parts that number of *Lines* from the rest of the *Page*, by pressing gently towards his *Riglet* or *Distributing-stick* upon the *Face* of the *Letter* of the farthest *Line*, which, if the Joints of his middle Fingers press pretty hard towards each other at first, easily part, and he may open that number of *Lines* so far from the rest of the *Page*, that he may get the Balls of his Thumbs far

far enough upon the shank of the *Letter*: So that the pressing the *Lines* yet a little harder between the Joints of his middle Fingers, and pinching with his Thumbs the *Letter* hard against the *Riglet*, with a quick jerk he rears that *Taking-up* upon his *Distributing-stick*. See *Plate 23. at A.*

Having it upon his *Distributing-stick* between both his Hands, with the *Face* of the *Letter* from him, he disengages his middle Fingers, and with his fore Fingers and Thumbs holding the *Riglet*, and now the Top of his *Taking-up* pretty loosely between them, he turns (as on two moving Axes) the ends of the *Lines* that were towards his Right Hand, and guides them to the Thumb-ball of his Left Hand: Thus the *Face* of the *Letter* is turn'd towards him; then bowing the inner Joynt of the middle Finger of his Left Hand (which before prest the left side of the *Line*) under the middle of the *Riglet* he takes the weight of the *Taking-up* upon it, which yet he eases as he lifts, by mounting the now Right Hand end of the *Lines* a little above an Horizontal level, and depressing the Left Hand ends a little below; so that now he has his *Taking up* in his Hand, with the *Face* of his *Letter* towards him, and the *Notches* upwards, he goes with it to his *Cave*, and places himself against the middle of it. See *Plate 23. at B.*

Then clapping the Ball (or if he will take off more than the length of the Ball) of his middle Finger of his Right Hand, of the second Joint of that Finger, against the bottom of the uppermost *Line* of his *Taking up* towards his Right Hand, and his fore Finger about the middle of the shank of the *Letter*,

he

he slides or draws towards him about an Inch or an Inch and an half of that *Line* upon the Ball of his Thumb, which is placed at the *Face* of the *Letter* to receive it: And as it comes off the *Taking up*, he with his aforesaid two Fingers and Thumb disposes it so among his Fingers that he gathers the Ball of his fourth Finger under the bottom of the *Letter*, and then he brings what he has taken off towards his Sight to read; then with a sleight thrusting the Ball of his Thumb outwards, and drawing inwards the Balls of his fore and middle Fingers, he spreads and *Squabbles* the shanks of the *Letters* between his Fingers askew; and rememb'ring what *Letters* he read, he nimbly addresses his Hand with a continued motion to every respective *Box*, which his Fingers, as they pass by, lets a *Letter* drop into, till his *Taking off* be quite *Distrubuted*.

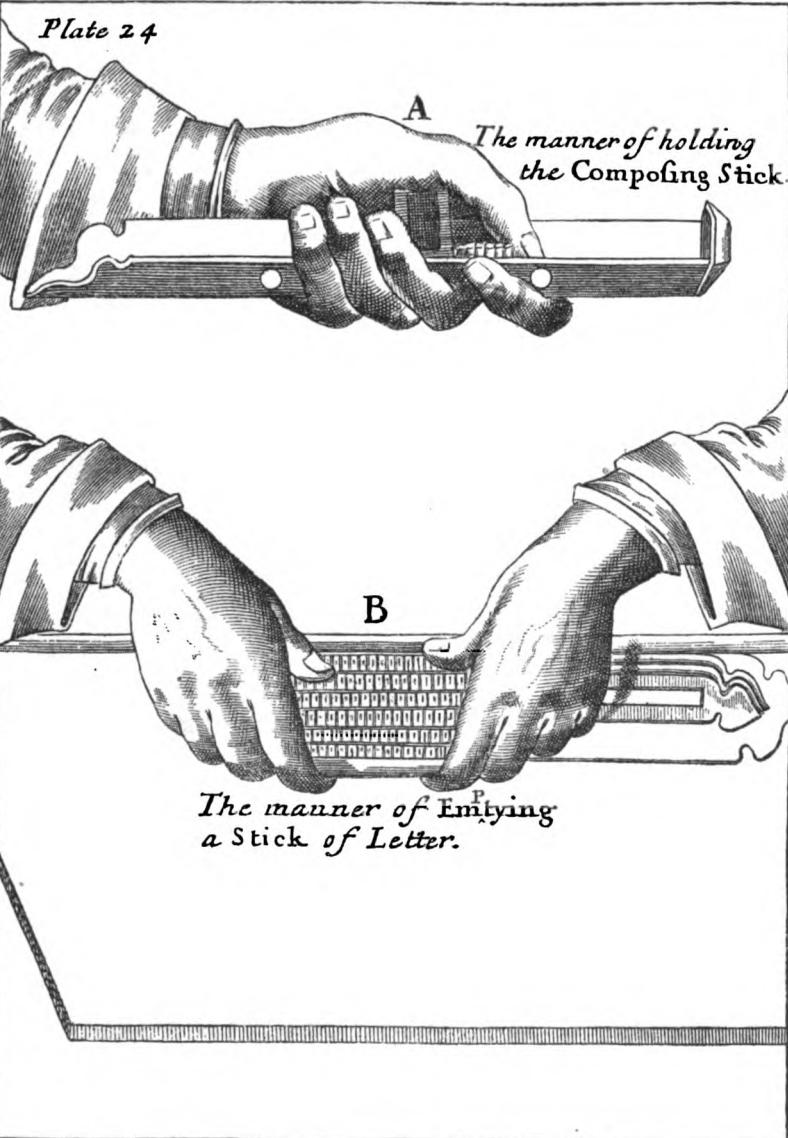
Having *Distrubuted* that *Taking off* he makes another *Taking off* as before, and so continues his *Takings off* till his whole *Taking up* be *Distributed*: And thus he *Takes up* and *Distrubutes* till his *Case* is full.

If the *Form* were not well *Rinc'd*, the shanks of the *Letters* will be more or less slippery, and with long *Distrubuting* will make the Balls of the Fingers and Thumb supple, by the wetnes of the *Letter* and sharpnes of the *Ly*; and consequently the grain of the skin will be made clumsy, and those Joints feeble; so that they will not so well fasten upon the sides of the Shank to command the *Letter*, and draw it askew, or be so nimble at disposing them into their several *Boxes*.

This

This happens most if they work upon small *Letter*, and that old, and the *Ly* old too, for then the *Ly* will have much *Inck* mingled in it: And the *Compositor* will have much ado to *Rince* his *Form* so clean but that the *Letter* will be slippery, and consequently not spread, as aforesaid. But against it they may use a remedy, which is, to have a piece of Allom about the bigness of a Hafel-nut, lye in one of the *Boxes* of the *Cafe*; for by feeling that now and then, the dilated pores of their Fingers are again contracted, and fit to do their office: For by the greasiness of the *Letter*, the grain of the Skin of the Fingers were so dilated, that the *Compositor* could not so actively draw the Shanks of the *Letters* askew, as aforesaid.

The *Compositor*, if conveniences suit, chuses to *Deftribute* his *Letter* over Night, that he may have a *dry Cafe* (as he calls it) to work at in the Morning, because *Wet Letters* are not so ready and pleasant to pick up as *Dry*; and besides are apt to make the Fingers sore, especially if the *Ly* be not so well *Rinc'd* from the *Letter* as it should be. In the Winter, when he *Deftributes* in the Day time, he commonly brings the *Lower Cafe*, when full of *Letter*, to the Fire to dry, rearing the farther side of the *Cafe* a little upwards: And when it is well dried, he sets it again upon the *Frame*.



¶ 4. Of Composing.

The *Compositor* now addresses himself to *Composing*: And looking a little over his *Copy*, to see how it pleases him, for he runs different fortunes, either of good or bad *Copy*, viz. well or ill writ, if it be a *Written Copy*, or much *Italick, Latin* or *Greek*, or *Marginal Notes*, or few *Breaks, &c.* for this he likes not in his *Copy*: But a *Printed Copy*, or a fair *Written Hand*, and full of *Breaks* pleases him well, and is by *Compositors* call'd *Good Copy, Light, Ease Work*; when the former they call *Bad, Heavy, Hard Work*: And if a Price be already made for a whole Book, the Good and Bad is done at the same Price.

If the *Measure* be already made, that is, if he was already upon that *Work* before, and his *Composing-stick* be set to the *Measure* of that *Work*, he needs not, or must not alter his *Composing-stick*: But if his *Measure* be not made, he must unscrew the *Skrew* of his *Composing-stick*, and slide the *Cheeks* nearer to, or farther off the *Head* of his *Composing-stick*, till he have exactly fitted his given *Measure*.

If it be a *Printed Copy* he is to *Work* on, and his *Work* must run *Line for Line* with his *Copy*, he then without more ado, *Sets* or *Composes* the fullest *Line* he finds in his *Copy*, and slides up the *Cheeks* of his *Composing-stick*, and pinches that *Line* between the *Cheeks* and the *Head*, till it stands as stiff or hard in the *Stick* as he intends to *Justifie* all the rest of his *Lines*: Then screws up the *Composing-stick*.

Justi-

Justifying (in *Compositors Language*) is the stiff or loose filling of his *Stick*, for if it be fill'd very stiff with *Letters* or *Spaces*, they say it is *hard Justified*, if loosly, they say it is *loose Justified*.

Having the *Measure* fitted, he places the *Galley* on his *Upper Case* on the Right Hand, for those *Boxes* are seldomest used, because in them are placed only the *Latin sorts*, or sometimes the *Small Capitals*, *Astronomical Signs*, &c.

He places his *Galley* so, that the Left Hand corner of the bottom of its Frame stands lower upon the *Case* than any of the other Corners, for in that position the *Letters* at the end of every *Line* stand safest from falling, as leaning towards the rest of the *Page*.

Some *Compositors* use *Visorums*, as is described in *Plate 2.* at i. Therefore pricking the point of the *Visorum* most commonly upon the Border or Frame of the *Case* on the Left Hand about the *&-Box*, they fold the *Leaf* of *Copy* they *Compose* by, so as the bottom of it may rest upon the Square-Shoulder near the bottom of the *Visorum*; then with two pieces of *Scaboard* tyed together at one end, they clasp both the *Copy* and *Visorum* between these two *Scabards*, which two *Scabards* pinch the *Copy* and *Visorum* fast enough to keep the *Copy* in its place, and at the same time also serves for an *Index* to direct the Eye to every *Line*, as the *Compositor* moves it downward.

After this preparation, the *Compositor* falls to *Composing*. But first reads so much of his *Copy* as he thinks he can retain in his memory till he have *Composed* it, as commonly is five or six words, or sometimes a longer Sentence. And having read, he falls

falls a Spelling in his mind; yet so, that his Thoughts run no faster than his Fingers: For as he spells A, he takes up A out of the A *Box*, as he names n in his thoughts, he takes up n out of the n *Box*, as he names d in his thoughts he takes up d out of the d *Box*; which three *Letters* set together make a Word, viz. And; so that after the d he sets a *Space*: Then he goes on to the next *Word*, and so *Composes* on, *Setting a Space after every Word* till the *Words* come to the end of the *Line*, for then he sets no *Space*.

When he *Composes* the *Letters* he holds the *Composing-stick* in his Left Hand, placing the Second Joynt of his Thumb over the moving *Cheek* of the *Stick*, and the end of the Ball of his Thumb reaches down to the bottom of the *Cheek* and *Stick*; so that with the end of the Ball of his Thumb he gently presses the *Letter* close to the *Cheek*, and keeps the *Letters* tight and square together, as he places them in the *Stick* successively. See Plate 24. at A.

And as his Eyes are very quick in reading his *Copy*, and in shifting its Visual Ray to the several *Boxes* he is to have a *Letter* out of, so is his choice what *Letter* to take up very sudden; for though the *Box* be full of *Letters*, yet in an instant he resolves and pitches his Fingers upon that one, which for its posture and position his Fancy reckons lies most commodious for his immediate seizing. For position, he generally chuses that which lies uppermost, because it is readiest at Hand to snatch up: And for posture, that which lies with its *Face* towards his Right Hand, because catching at the *Letter* near the *Face-end* of the *Shank*, he by an accustomed sleight, in his Fingers while

while it is coming to the *Stick*, disposes it so, that as the bottom of the *Shank* goes directly forwards, towards the bottom of the *Stick*, so the *Notch* of the *Letter* shall also be placed upwards.

Most *Composters* use a *Composing-Rule*, which is only a piece of a *Brass-Rule* cut to the length of the *Measure*, with a small Ear left at either end, to take it out by when the *Line* is full, and to lay it upon the *Compos'd Line*, to *Set* successively a succession of *Lines* upon, till the *Stick* be full.

This *Rule* is very commodious to Work with, because the *Letter* slides easier and smoother down to the *Back* of the *Stick*, than it will upon a *Line* of *Letters*: Besides, the *Letters Compos'd* on it stand straighter and truer in *Line*, and are less subject to *Hang*, than those *Compos'd* on a *Line* of *Matter*; unless with a *Riglet* (as that they many times do) they rub pretty strongly along the *Line* they have *Compos'd*, which is a labour more than needs, and the loss of some time to make the Work more unpleasant.

Having *Composed* one *Line*, if it ends with a *Word* or a *Syllable* and a *Division*, and just fill the *Measure*, it needs no more *Justifying*; but if the *Line* conclude not as aforesaid, then he puts a *Space* more between every *Word*, or so many *Words* as will fill up the *Measure* pretty stiff, viz. *Justifie the Line*. But if the *Line* be not yet *Justified*, he puts another *Space* between every *Word*, or between several *Words*, till the *Line* be *Justified*: So that here is now three *Spaces*, and strictly, good Workmanship will not allow more, unless the *Measure* be so short, that by reason

reason of few *Words* in a *Line*, necessity compells him to put more *Spaces* between the *Words*. This often happens in *Marginal Notes*, where the *White* between *Words* is often as great or greater than between *Line* and *Line*.

These wide *Whites* are by *Compositors* (in way of Scandal) call'd *Pidgeon-holes*, and are by none accounted good Workmanship, unless in such cases of necessity, as aforesaid.

And as *Lines* may be too much *Spaced-out*, so may they be too close *Set*: It may be accounted too close *Set* when only a *Thin-space* is set between *Words*, especially if no *Capital Letter* follows the *Thin-space* or *Point* go before it. *Thin-spaces* being intended and *Cast* only that the *Compositor* may *Justifie* his *Lines* the Truer, and not to serve for convenient distinction between *Words*; yet do some *Compositors* too often commit this error, rather than put themselves to the trouble of *Spacing* out a *Line*, where many *Spaces* must be used to *Space* it out.

A good *Compositor* takes care not to *Set* too Close, or too Wide; for if he *Set* too Close, and should happen to leave out a *Word* or two, it will give him a great deal of trouble to get those *Words* in; Nay perhaps when he comes to a *Break* he drives out a *Line*, for which *Line* perchance he may be forc'd to *Over-run* all the *Pages* that are *Set* forwards upon that *Matter*. And if he *Sets* too Wide, and he chance to *Set* a *Word* or two twice over, he may be forc'd to make *Pidgeon-holes* e're he come to a *Break*, and then perhaps his *Break* is got in too, and his *Page* a *Line* too short, and he forc'd to *Over-run* several

ral *Pages* e're he can drive that *Line* out. As I shall farther shew you when I come to the ¶ of *Correcting*.

In *Justifying* his *Line* he takes great care that it do not *Hang*: It is an unproper Term, yet grown into Use, for when the *Letter* stands askew, and not directly Square, they say it *Hangs*. New *Letter* is most subject to *Hang*, especially if not very smoothly *Drest*; Because the least Bur, or sharpness of its Angles, may catch in the Burs or Angles of the *Letters* that stand next them, and so make them stand aslope, and one *Letter* standing aslope is very subject to make all the other *Letters* in that *Line* stand aslope too. Therefore if he find his *Letter Hang*, while his *Line* is yet *loose*, viz. Unjustified, he gently with the Ball of the Thumb of his Left Hand, thrusts the top of the shank of the *Line* where it *Hangs*, moving the *Letter* somewhat from him, towards the farther end of the *Stick*, and with the Balls of the two Fore-fingers of his Right Hand pats upon the *Face* of the *Letter*, till he have got them into an upright position. He moves or drives the top of the Shank of the *Letter* from him, because generally the placing the Ball of his Thumb on the top of the shank of the *Letter* when he *Composes* (as was shewn before) is subject to draw the *Letter* askew towards him, but that his care commonly prevents it: Yet if by chance the *Line* should *Hang* from him, then he with the Ball of his Thumb as aforesaid, draws the *Letter* towards him, to set it upright.

Here

Here is now one *Line Compos'd*: And as he *Compos'd* that *Line*, so he *Composes Line upon Line* till his *Stick* be full: When his *Stick* is full, he *Empties* thus; He lays his *Stick* down upon his *Lower Case*, with the bottom of his *Stick* against the hither *Ledge* of the *Case*, and the *Face* of the *Letter* upwards; being provided of a *Riglet* just the Length of his *Line*, he lays his *Riglet* against his last *Line*, and places the Balls of his two *Fore-fingers* behind the *Riglet*, near the middle of it, if the *Line* be not too long, and then only as near the middle as he can to command it with his *Fore-fingers*; and he places the Balls of his *Thumbs* against the first *Line* in his *Stick* as far below the *Face* of the *Letter* as he can, and he places first the Joints of his *middle-fingers* against the Sides of the *Letter* at the two ends of the *Line*, so as I shewed you he did when he was *Taking up* his *Letter* to *Distribute* it; and in this posture pinching the *Letter* between his *Thumbs* and his *Fore-fingers*, and squeezing his two *middle fingers* towards each other, he leans the *Letter* in the *Stick* almost flat upon the *Riglet*: But if his *Lines* were *Hard Justified*, he cannot perhaps with the first leaning the *Letter* back get them clear out of the *Stick*, therefore he again wriggles the *Stick* of *Letter* forwards and backwards, till he gets them quite out. See Plate 24. at B.

Having gotten them out, and in this posture fast between his *Thumbs* and *Fingers*, and the *Letter* leaning almost flat upon his *Riglet*, he directs both his hands together to his *Galley*, and nimbly claps that *Stick* of *Letter* down into the *Galley*; placing the first

first *Line* close and upright against the lower ledge of the *Galley*, and the begining of his *Lines* close and upright against the left hand *Ledge* of the *Galley*, and then disingages his Fingers and Thumbs, and leaves his *Riglet* standing in its place till he have occasion to use it in like manner for the next *Stick of Letter*.

As he *Set* this *Stick of Letter*, so he *Sets* on till his *Page* is *Out*, Remembiring after the last *Line* of every *Page* to set a *Direction*: That is, he *Sets* a *Line* of *Quadrats* and at the end of it the first word of the next *Page*, or if the Word be very long and the *Line* very short, two *Syllables*, or sometimes but one of that *Word*. And if it be the *First Page*, viz. the first *Page* of that *Sheet*, he *Sets* a *Signature* about the middle of the *Line*, or rather a small matter nearer the end than the middle is, (because when the *Sheets* are wrought off and gather'd, they *Collation* something quicker: The *Collationer* not being forced to prick up with his *Bodkin* the corners of the *Sheet* so high to see the *Signature*: which in a long train of work saves time.

If it be the *First Page* of the first *Sheet* of a *Book* the *Signature* is A, if the first of the second *Sheet* B, if the first of the third C, and so successively till he come to W, which is always skipt, because the *Latin Alphabet* has not that *Letter* in it; but next V follows X Y Z, so that if the *Book* contain above three and twenty *Sheets*, the *Signature* of the four and twentieth *Sheet* must be A a, if five and twenty B b; till in like manner he run through the *Second Alphabet*, and comes to the third, fourth, &c. still as he begins a new *Alphabet* adding an a.

To

To the second *Page*, or any other *Even Page*, he *Sets* no *Signature*, but to the Third which is an *Odd Page* he does, viz. A 2. The *Figure* of 2 is no part of the *Signature*, but is only an adjunct to shew the *Book-binder* the Second *Leaf* of that *Sheet*, that he may the surer *Fold* the *Sheet* right.

If it be a *Folio Sheet* he cannot set A 3 in a single *Sheet*, because it has but two *Odd Pages* in it; but if they be *Quir'd Sheets*, that is, two, three, or four *Sheets Quir'd* together, he must set A 3 in a *Folio*, though not in the First, but Third *Sheet* of that *Quire*. But no wise *Compositor*, except he work on *Printed Copy* that runs *Sheet* for *Sheet*, will be willing to *Compose* more *Sheets* to a *Quire* than he shall have a *Fount of Letter* large enough to set out, unless he will take upon him the trouble of *Counting off* his *Copy*: because he cannot *Impose* till he has *Set* to the last *Page* of that *Quire*; all the other *Sheets* being *Quired* within the first *Sheet*, and the last *Page* of the *Quire* comes in the first *Sheet*. But when he *Composes Quir'd Work*, the *Signature* of the first *Page* is A, the *Signature* of the *Sheet Quir'd* next within the first *Sheet* is A 2, the first *Page* of the next *Quir'd-Sheet* A 3: So that the *Signatures* of all the *Sheets* in the first *Quire* is A, A 2, A 3, &c. according to the number of *Sheets Quired* together. The second *Quire* begins B, B 2, B 3, &c. The Third *Sheet* C, &c. according to the number of *Quires*. This is called *Printing in Quires*. Now to return.

If the *Form* be *Quarto*, he *Sets* under the Fifth *Page Signature* 3. If *Octavo*, he sets also under the Fifth *Page Signature* 3. and under the Seventh *Page Signa-*

Signature 4. If *Twelves*, he sets also under the Fifth *Page Signature 3*, and under the Seventh *Page Signature 4*, and under the Ninth *Page Signature 5*, and under the Eleventh *Page Signature 6*. The Rule is, that all *Odd Pages* should have a *Signature*, if they stand on the *Out-side* of the *Sheet*; and the reason for the Rule is, that the *Gatherer*, *Collater* and *Book-binder* may the readier lay *Sheets* right, if they be turned wrong. This Rule is not among *Compositors* so well observed as it ought to be: For in *Quarto's* they not only leave the *Signature 4* out, but rarely put in *Signature 3*.

¶ 5. *Some Circumstances a good Compositor considers and observes in Composing.*

A good *Compositor* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work shew graceful to the Eye, and pleasant in Reading: Therefore if his *Copy* be Written in a Language he understands, he reads his *Copy* with consideration; that so he may get himself into the meaning of the *Author*, and consequently considers how to order his Work the better both in the *Title Page*, and in the matter of the *Book*: As how to make his *Indenting*, *Pointing*, *Breaking*, *Italicking*, &c. the better sympathize with the *Authors Genius*, and also with the capacity of the Reader.

Nor does a *Compositor* the least shew his skill in the well ordering and humouring of a *Title Page*, which, because it is the first *Page* of a *Book*, we shall begin the *Compositors Considerations at.*

He

He, as aforesaid, judiciously reads his *Title Page*, and considers what *Word* or *Words* have the greatest Emphasis in it. If many *Words* precede the Emphasis, he considers whether it be best to make one or two *Lines*, or more of them, by electing a *Body* bigger or less to *Set* the precedent *Matter* in, and whether any of these *Lines* ought to be *Indented*, either at one end or both, viz. *Set* in the middle of the *Line*. And what Words of Emphasis come in that precedent *Matter*; that he may *Set* them either in *Capitals*, *Roman*, *Italick*, or *English*; and at last bring the great Emphasis, which is generally the *Title* or *Name* of the *Book* in a *Line* by it self, and just fill it if he can; which he has some helps to do, by the great *Bodied Letters* of the *Lower Case*, or else by *Capitals*, *Roman*, *Italick* or *English*, of a proper *Body*, which best pleases his fancy, or is in present mode.

If this *Word* of great Emphasis be *Set* in the *Lower Case*, yet he *Sets* the first *Letter* a *Capital*, and he *Sets* no *Space* between *Letter* and *Letter*, but between *Word* and *Word* he does, if there happens more than one *Word* in that *Line*: But if that *Word* be *Set* in *Capitals*, he chuses to *Set* a *Space* between every *Letter*, and sometimes he *Sets* two *Spaces*, yet that is rather to drive out the *Line*.

If he *Sets* but one *Space* between the *Letters* in a *Word*, he *Sets* three *Spaces* between *Word* and *Word*: And if he *Set* two *Spaces* between *Letter* and *Letter*, he *Sets* four *Spaces* between *Word* and *Word*, as well to give a graceful appearance to the Eye, as to make a Visible and proportionable distinction between *Word* and *Word*.

He

He also considers what *Whites* to *Set* between his *Lines*; as either a *Line* of *Quadrats*, and of what *Body*; or (if his *Title Page* be large) but a *Scaboard*: and at last *Justifies* his *Page* in *Length*, either by adding more *Whites* (where they may be proper) if his *Page* be too short, or by taking out or diminishing *Whites* if the *Page* be too long: And this he does by altering the *Body* of *Whites*, for if a *White-line* be *English*, he may take it out, and in its room put in *Pica*, *Long-primmer* or *Brevier*, according as he finds he has *Run out*; yet this he does with Consideration, where more or less *White* is properest.

But the mode of ordering *Titles* varies; as may be seen by comparing the *Title Pages* of every twenty years: Therefore a Lasting Rule cannot be given for the ordering them: only what has been said in general concerning *Emphasis*, and in particular to humour the Eye, the *Compositor* has a constant regard to.

When he is to Work upon a continued Series of *Matter*, he *Sets* the *Title* of the *Chapter* or *Section* in a bigger *Body* and different Character than his *Matter* is *Set* in; as if the *Matter* be *Set* in *English Roman*, he *Sets* the *Title* in *Great Primer* or *Double Pica Italick*, but the *Words* of *Emphasis* he will *Set* in *Roman*, and varies the Character for them as well in the *Title*, as he does in the *Matter*.

If his *Title* be short, he *Sets* it in the middle of the *Line*, by *Setting Quadrats* on both sides: If his *Title* be long, he *Sets* the middle *Line* in the middle: If it make three or more *Lines*, he *Indents* the first with an *m Quadrat*, and the other with two
m Quadrats

m *Quadrats*. Before his *Title* he sets a *White-line*, viz. a *Line of Quadrats*, and so he does after it; but with regard to what the bigness of the *Body* of the *Letter* the *Title* is *Set in*, *Runs out*; for these *Whites* must be set of such *Bodies* (bigger or less) as will make the difference of the *Body* the *Title* is *Set in*, a just number of *Lines* with those of the *Body* the *Matter* is *Set in*, because the length of the *Page*, as aforesaid, must be *Justified*. And he always fore-casts to put rather more than less *White* before the *Title* than after it; because the *Title* has relation to the *Matter* of the *Chapter* or *Section* it is *Set to*, and therefore ought not to be so distinct, as from the precedent *Chapter* or *Section*.

After his *Title*, he begins his *Chapter* or *Section* with a *Two-lin'd Letter*, or *Three* or *Four-lin'd Letter*, but *Indents* it not. He begins his *Chapter* or *Section* with the first *Line* in the *Stick*, unless his *Stick* be very Deep, or his *Two* or *Three-lin'd Letter* small, because it may else reach above the top of the *Stick*, and so hinder him from filling up *Lines* to the *Body* of the *Two* or *Three-lin'd Letter*.

After the *Two* or *Three-lin'd Letter*, he *Sets* a *Capital Letter* of the *Body* his *Matter* is of, and *Indents* all, those *Lines* that are to fill up the *Great Letter* with an n *Quadrat*.

He cannot use his *Composing-Rule* (mentioned in the foregoing part of this ¶) till he have filled up *Lines* to the *Body* of the said *Great Letter*; because his *Composing-Rule* is too long to go between the *Great Letter* and the *Head* of the *Stick*: but then he uses the end of a *Riglet* to rub along the *Lines* he has

has *Composed* to smoothen them, and so *Set* on till he has filled up the whole *Body* of the *Great Letter*, and most times somewhat above it; which *Letter* he afterwards *Justifies* with *Small Bodied Quadrats*, or with *Scabboards* or *Cards*, or with any or all of them till the *Great-letter* stands even with the number of *Lines* that it *Indents*, and afterwards uses his *Composing Rule*, and *Sets* the succeeding *Lines* to their full Length.

If it be a great *Wooden Letter*, he begins his *Chapter* or *Section* with, it is most times too *Deep* for the height of the *Cheeks* of his *Stick*; therefore he *Justifies* his *Stick-full* just to the breadth of the *Wooden Letter* with *Quadrats* or *Quotations*, and *Sets* on between those *Quadrats* or *Quotations* and the *Head* of his *Stick*, as I shewed before, till his *Stick* be full of *Lines*; which *Lines* he *Empties*, leaving the *Quadrats* or *Quotations* in his *Stick*, to serve, as before, for the succeeding *Stick* or *Sticks*, till he have *Composed Lines* enough for the *Depth* of the *Wooden Letter*.

As he *Sets* on, he considers how to *Point* his Work, viz. when to *Set* , where ; where : and where . where to make () where [] ? ! and when a *Break*. But the Rules for these having been taught in many School-books, I need say nothing to them here, but refer you to them.

And as he considers how to *Point*, so he considers what proper Names, either of Persons or Places, he meets with in his *Copy*, as also what Words of great Emphasis, and what Words of smaller Emphasis, what Obsolete Words, and what Foreign, &c.

When

When he meets with proper Names of Persons or Places he *Sets* them in *Italick*, if the Series of his *Matter* be *Set* in *Roman*; or in *Roman* if the Series of his *Matter* be *Set* in *Italick*, and *Sets* the first *Letter* with a *Capital*, or as the Person or Place he finds the purpose of the Author to dignifie, all *Capitals*; but then, if conveniently he can, he will *Set* a *Space* between every *Letter*, and two or three before and after that Name, to make it shew more Graceful and Stately. For *Capitals* express Dignity where-ever they are *Set*, and Space and Distance also implies stateliness.

Words of great Emphasis are also *Set* in *Italick*, and sometimes begin with a *Capital Letter*: If the Emphasis bear hard upon the Word to be exprest as well as the Thing to be exprest, it ought to begin with a *Capital*. I shall bring for instance an Observation I made above forty years ago on the Word *that*, viz. that that Word may be reitterated five times, and make good Sense: If it be set thus it will seem non-sense, that that that that that; but if it be *Set* thus, that that That that that Man would have stand at the beginning of the *Line* should stand at the end; it will, by toning and laying Emphasis on the middlemost That become good Sense. Now all the thats ought to be *Set* in *Italick*, and the middlemost That ought to begin with a *Capital*, because it is both the Thing and Word.

Words of a smaller Emphasis may be *Set* in the running Character, viz. *Roman*, if it be the Series of the *Matter*; or *Italick*, if *Italick*, but begun with a *Capital*: Instance in the last Sentence, That which expresses both the Thing and Word, &c. Here Thing and Word both

both bear Emphasis, though not very great, and therefore ought to be dignified more than those Words that precede or follow those Words. Yet I know some Authors are now so nice to mark both the Word Thing and the Word Word in *Italick*.

After a . though not at the end of a *Break* he begins with a *Capital*.

When in *Composing* he comes near a *Break*, he for some *Lines* before he comes to it considers whether that *Break* will end with some reasonable *White*; If he finds it will, he is pleas'd, but if he finds he shall have but a little single *Word* in his *Break*, he either *Sets* wide to drive a *Word* or two more into the *Break-line*, or else he *Sets* close to get in that little *Word*, because a *Line* with only a little *Word* in it, shews almost like a *White-line*, which unless it be properly plac'd, is not pleasing to a curious Eye.

Nor do good *Compositors* account it good Workmanship to begin a *Page* with a *Break-line*, unless it be a very short *Break*, and cannot be gotten in in the foregoing *Page*; but if it be a long *Break*, he will let it be the *Direction-line* of the fore-going *Page*, and *Set* his *Direction* at the end of it.

Indenting after a *Break* (unless it be the end of a *Chapter* or *Section*) is an *m Quadrat*, (more or less is not proper) *Set* at the beginning of the *Line*: But when Verses are *Indented*, two, three or four *m Quadrats* are used, according to the number of the Feet of the Verses, but most times according to the fancy of the Author.

English obsolete *Words* he *Sets* in the *English* Character,

racter, the first *Letter*, if the dignity of the Word require it, as aforesaid, with a *Capital*.

Foreign Languages he meets with in his *Copy*, if the *Master Printer* have them in his House, he *Sets* them in the proper Character; if not, the Author must write them in the common Character, and the *Compositor* *Sets* them as they are written.

That I may be the less unintelligent to the Reader, I will inform him that in *Printers Dialect* (as in this last Paragraph it is used) *Language* is understood *Letter*: For the *Compositor* does say, I shall use a Word or two of *Greek Letter*, or *Hebrew Letter*, or *Saxon Letter*, &c. but I shall use a word or two of *Greek*, a Word or two of *Hebrew*, *Saxon*, &c. so that the Word *Letter*, is in *Compositors Dialect*, understood by naming the Language.

If *Indentures* instead of *Marginal Notes* come in a number of *Lines*, he *Indent*s his *Stick*, as I shewed you he did for a *Wooden Letter*, leaving a convenient *White* between his *Matter* and *Indenture*, and then again *Indent*s his *Stick* to *Set* the *Matter* that comes in those *Indentures*, allowing a reasonable *White* between the Top and the Bottom of his *Indenture*, and then *Justifies* it up to an exact number of *Lines*, as he did the *Wooden Letter*.

If *Marginal Notes* come down the fide (or fides, If the *Page* have two Columns) he chuses to *Set* them in on the *Stone*, rather than in his *Galley*; because both his *Page* and *Notes* stand safer, being cloathed with the *Furniture*, than they do when they stand Naked in the *Gallery*. Therefore I shall say nothing of *Marginal Notes* till I come to *Imposing*.
Some

Some other Circumstances (according as variety of Work does happen) a *Compositor* may meet with; but by what has been said upon this and several other Trades, the Ingenious (as they occur) may easily consider how they are to be performed.

Nor (as afore was hinted) is a *Compositor* bound to all these Circumstances and Punctilio's, because, in a strict sense, the Author is to discharge him of them in his *Copy*: Yet it is necessary the *Compositors* Judgment should know where the Author has been deficient, that so his care may not suffer such Work to go out of his Hands as may bring Scandal upon himself, and Scandal and prejudice upon the *Master Printer*.

¶ 6. *Of Tying up a Page.*

We may remember the *Compositor* has yet a *Page* in his *Galley*: This *Page* must be *Tyed up* with a *Packthred Cord*, courser or finer according to the bigness of his *Letter* and *Page*: For *Small Letter*, which rarely is used to great *Pages*, he chuses a fine *Packthred*, strong and limber; but for *great Letter* and *great Pages* a stronger that will better endure hard pulling at: Wherefore he seeks a *Cord* for his purpose, or else takes so much off the whole *Quoil* as will serve his turn, and taking the end on't in his Right Hand, lays that end about an Inch within the *Direction-line*, and a little lower than the middle of the *Shank* of the *Letter*, and holds that end there close with the two Fore-fingers of his Left Hand, then he slides his Right Hand along the *Cord*,

Cord, straining it as stiff as he can along the right side of the *Page*, and turns it about the *Head* of the *Page* as close down to the *Ledge* of the *Galley* as he can, and so slides his Hand over the *Cord* till he draws it about all the sides of the *Page*: and when he comes to the first end of the *Cord*, he doubles up that end so as it stand above the *Face* of the *Letter*, and whips the *Cord* over that end, that the end may not slip; then he twists part of the remaining *Cord* about his Right Hand, and grasping his Left Hand Fingers about the *Direction* Corner of the *Page*, as well to hold the end of the *Cord* from slipping, as to keep the *Page* tight in its position, with his Right Hand he pulls the *Cord* as hard down the side of the *Page* as he can; and keeping the *Cord* straining, whips it again about the *Head* and other sides of the *Page*, and so again about all the sides of the *Page*, keeping it still straining; and always as he comes to the Right Hand side of the *Page*, pulling hard, and taking care that it slip not: Having whipt the *Cord* twice about the *Page*, he holding two of his Left Hand Fingers against the *Direction*-corner upon the *Cord*, that it slip not, with the Ball of his Thumb of his Right Hand, and the Balls of his Fingers to assist, thrusts against the opposite diagonal corner of the *Page*, and removes it a little from the *Ledges* of the *Galley*, that he may with the Nail of the Thumb of his Right Hand have room to thrust the *Cord* whipt about the *Page*, lower down upon the *Shank* of the *Letter*, (to make room for succeeding whippings of the *Cord*, and then thrusts or draws the *Page* close

close to the *Ledges* of the *Galley* again; then whips the *Cord* again about the *Page* (as before) till he has whipt it four or five times about the *Page*, taking care that the several whippings lye parallel to each other, not lapping over any of the former whippings.

Having whipt the *Cord* four or five times about the *Page*, he with his *Bodkin* or the corner of a *Brass Rule* (which lies best at hand) fastens the *Cord*, by thrusting a noose of it between the several whippings and the Right Hand side of the *Page*, close up to the *Direction-line*, then draws the lower part of that Noose close up to the very corner of the *Direction-line*, that it may be the better fastned between the *Page* and the Whippings: Then, if his *Cord* be not of a just length, he cuts it off from the rest of the *Quoil*, leaving so much length to it as that the end of it may stand upright an Inch or two above the *Face* of the *Letter*; the reason will shew it self when we come to *Imposing*. Then he removes the *Page* pretty far from the *Ledges* of the *Galley*, to see if the Whippings lye about the middle of the *Shank* of the *Letter*; if they lye too high, as most commonly they do, he thrusts them lower with the Nail or Nails of his Thumbs. Then (if the *Page* be not too broad) he places his Fore or Middle Finger, or both, of his Right Hand on the Right Hand Side of the *Page*, and his Thumb on the Left; and bowing his other Finger or Fingers under the *Head* of the *Page*, he rears up the *Handle-end* of his *Galley* with his Left Hand almost upright, and so discharges the *Galley* of the *Page*, by delivering it upright into his Right Hand. Having his *Page* upright

upright in his Right Hand, at the *Head*, he claps the Fingers of his *Left Hand* about the *Foot* of the *Page*, upon the ends of the *Lines* on the Right Hand Side of the *Page*, and his Thumb on the Left Hand side of the *Page*, with the Palm of his Hands towards the *Face* of the *Letter*, and such Fingers as he can spare bowed under the Foot of the *Page*, turning the *Page* with the *Face* of the *Letter* from him, and letting it rest upon the inside of his Fingers, under the Right Hand Side of the *Page*, and so goes with it to the *Correcting-stone*.

But if the *Correcting-stone* be full of *Forms* or other *Letter*, as many times it is, then before he begins to *Tye* up his *Page* he provides a *Sheet* of *Waste Paper*, supposing it a *Quarto Page*, and doubles that Sheet in four, and while he has the *Page* upright in that Hand (as aforesaid) he takes that doubled Sheet into the Palm of his *Left Hand*, and claps it against the bottom of the *Page*, and turning his *Left Hand* outward, receives the *Page* flat upon the Paper on the Palm of his Hand: Then with his Right Hand grasps the Sides of the *Page* and the Sides of the Paper, which turn up again above the bottom of the *Page*, and sets it on a *Letter Board*, or some other board in a convenient place under his *Cafe*. He places that *Page* on the Left Hand the Board with the *Foot* of the *Page* towards him, that the other *Pages* that are in like manner set on the Board afterwards, may stand by it in an orderly succession against he comes to *Impose* them.

If it be a large *Folio Page*, or a *Broad-side* he has *Tyed up*, he cannot take that into his Hands, because

cause it is too broad for his Grasp; therefore he carries his *Galley*, *Page* and all to the *Correcting-stone*, and turns the Handle of the *Galley* towards him, and taking hold of the Handle with his Right Hand, he places his Thumb and Ball of his Thumb on his Left Hand, against the inside the *Head-ledge* of the *Galley*, to hold it and keep it steady, and by the Handle draws the *Slice* with the *Page* upon it, out of the *Galley*, letting the *Slice* rest upon the *Correcting-stone*: Then he thrusts the *Head-end* of the *Slice* so far upon the *Correcting-stone*, that the *Foot* of the *Page* may stand an Inch or two within the outer edge of the *Correcting-stone*; and placing his Left Hand against the *Foot* of the *Page*, in the same posture he last plac'd it against the *Head-ledge* of the *Galley*, he draws the *Slice* from under the bottom of the *Page*, and leaves it upon the *Correcting-stone*. See Plate 25. at A.

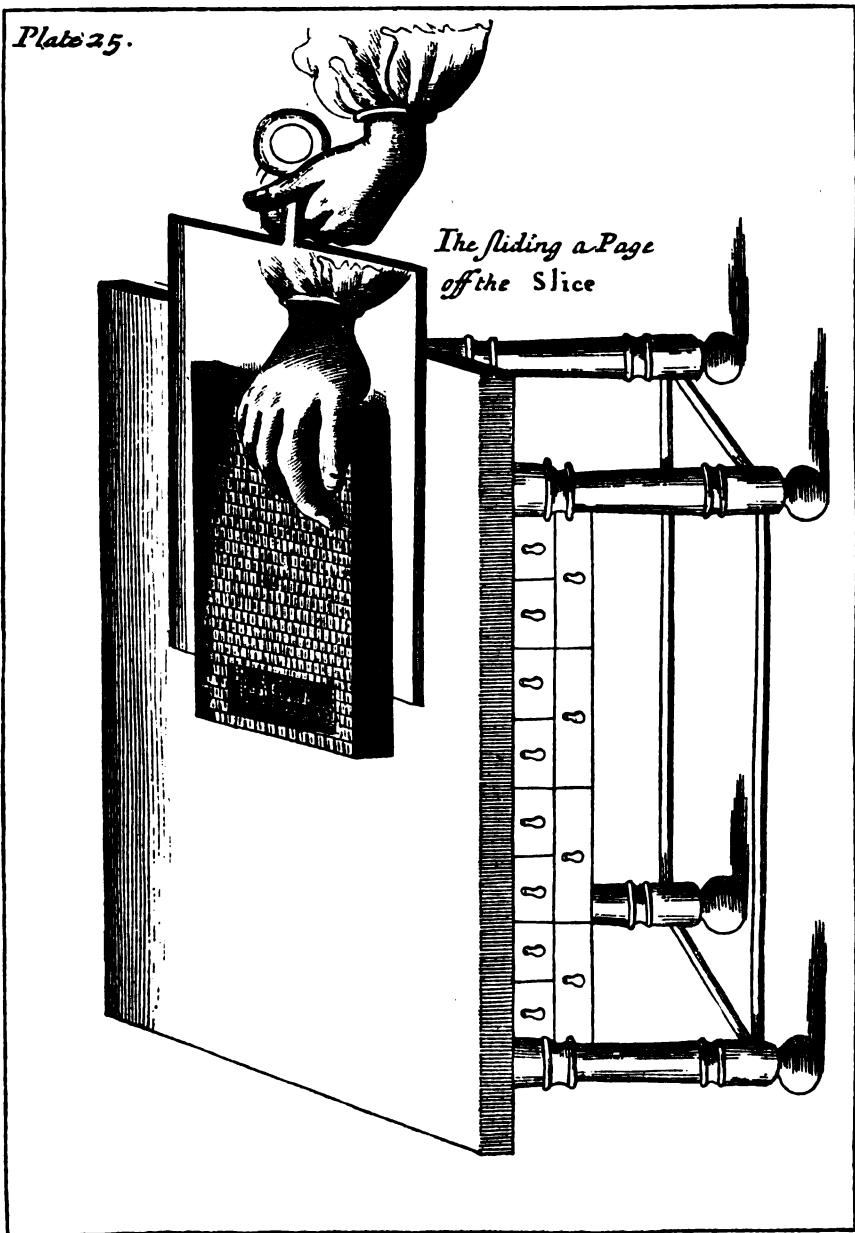
¶ 7. Of Imposing.

Imposing is the placing of the *Pages* that belong to a *Sheet*, with the *Chase* and *Furniture* about them, in such an order as when the *Sheet* is wrought off at the *Press*, all the *Pages* may be Folded into an orderly succession.

There are four *Volumns* in use that are differently *Imposed*, viz. *Folio*, *Quarto*, *Octavo* and *Twelves*.

The manner of *Imposing* these *Sheets* will be plainer represented in a Table than by many words; therefore in Plates 26, 27, 28. I have given you Drafts of each *Volumn*, both *First* and *Second Form*, viz. *White Paper* and *Reteration*; as you may see noted over each *Form* in the Plates. For Example, the two *Forms* in the *Folio Sheet*: In the *First Form* you

Plate 25.



you may see 1 on the Left Hand and 4 on the Right, which shews that the *First Page* must stand on the *Correcting-stone* on that Hand, and the *Fourth* on the Right Hand, with the *Foots* of the *Pages* towards you; and so for all the other *Forms*. The number of the *Page* belonging to each *Sheet* is marked in what place it is to stand on the *Stone* in the *Chase*, and the Figures of those Numbers are placed with their *Head* and *Foot* upwards and downwards, as the *Heads* and *Foots* of the *Pages* must stand in the *Chase*.

The places of these *Pages* for all *Volumns* the *Compositor* has always in his memory, yet has he a help if he remember the places of but the first half of the number of *Pages* of each *Volumn*: For if he knows the place of the first *Page*, the *Page* that stands next it must be that number which makes one more than the number of all the *Pages* in the *Sheet*. For Example, in the *Folio*; next the *First Page* stands the *Fourth Page*, 1 and 4 added makes 5, viz. one more than the number of *Pages* in the whole *Sheet*. See Plate 26. Again, In the *Twelves Volumn* next the *First Page* stands the *Twenty Fourth*, 1 and 24 added makes 25: Next 2 stands 23, which added makes 25, viz. one more than the number of *Pages* in the whole *Sheet*. This is a help, and a certain Rule for placing the *Pages* of any *Volumn*, if he knows but by memory the places of the first half number. See Plate 27. Thus you will find an *Even* and an *Odd Page* stand together.

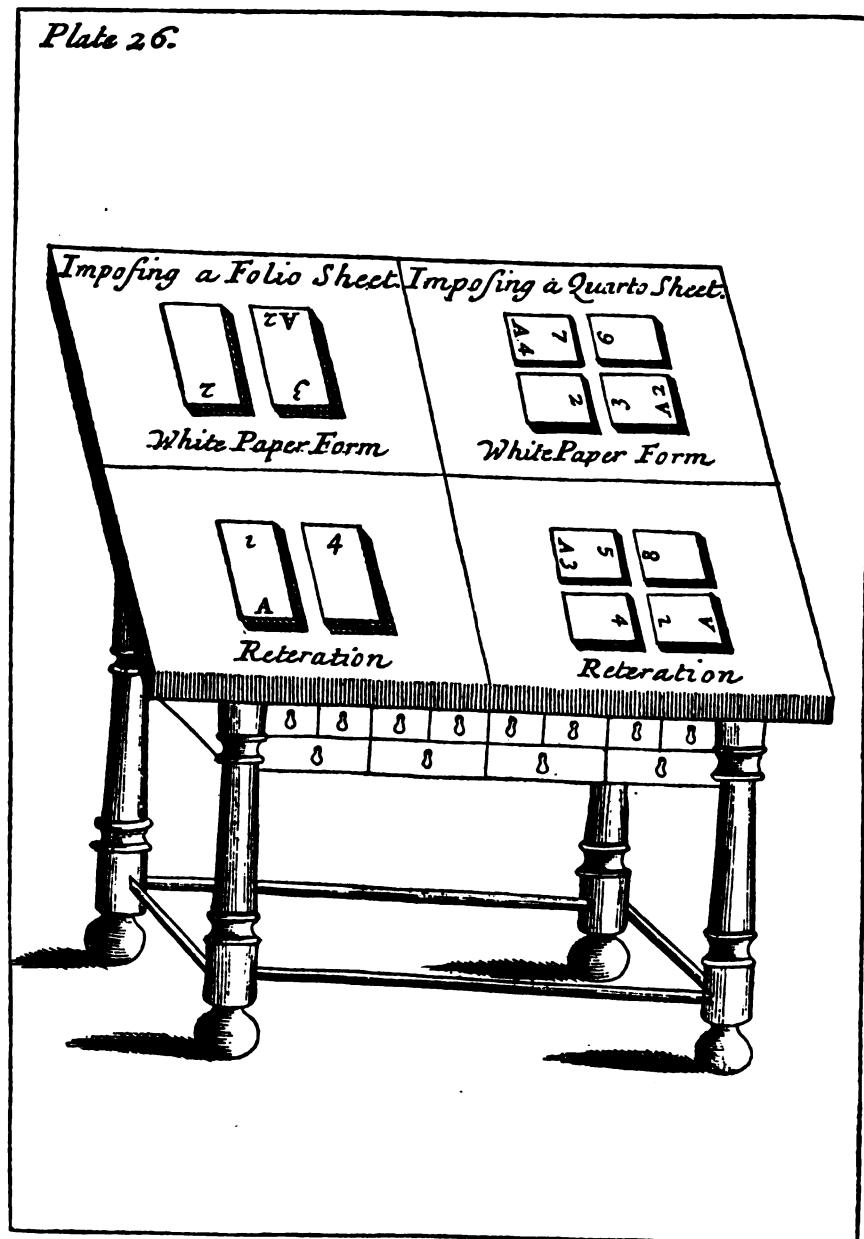
The other *Volumns*, viz. *Sixteens*, *Twenty-fours*, *Thirty-two's*, are but the *Octavo's* and *Twelves* doubled, or twice doubled and *Imposed* in *Half-Sheets*. For Example, The *Sixteens* is two *Octavo's* *Imposed* on

on each side the *Short Cross*; the *Twenty-fours* is two *Twelves Imposed* on each side the *Long Cross*, and a *Thirty-two's* is four *Octavo's Imposed* in each *Quarter* of the *Chase*. And thus they double a Volumn as oft as they think fit. But as was said before, they are *Imposed* on each side the *Cross*, or in each *Quarter* of the *Chase*, as the Volumn that is doubled or re-doubled is *Imposed* in the whole *Chase*.

In *Half-sheets*, all the *Pages* belonging to the *White Paper* and *Reteration* are *Imposed* in one *Chase*, and are plac'd, as you see by the Drafts (in *Plate 28.*) of *Half-sheet Forms*. So that when a *Sheet* of *Paper* is Printed on both sides with the same *Form*, that *Sheet* cut in two in the *Short Cross*, if *Quarto* or *Octavo*, and in the *Short* and *Long Cross*, if *Twelves*, and folded as *Octavo* or *Twelves*; the *Pages* (I say) of each *Half-sheet* shall follow in an orderly succession.

Having premised thus much, he takes up the *Pages* he set by on *Papers* in an orderly succession when he *Tyed* them up, grasping the edges of the *Papers* that stick up on both sides the *Page* tight, that so the bottom of the *Paper* may stand the stronger against the bottom of the *Letter*, to keep it from falling out; and bringing it thus to the *Correcting-stone*, he gets the two last Fingers of his Right Hand under the *Head* of the *Page*, but not under the *Paper* sticking up about the *Head* of the *Page*, keeping his other two Fingers and Thumb on the sides of the *Page*, and slips or slides his Left Hand, so as the Palm of it may turn towards the bottom of the *Page*; and rearing the *Page* up on
end

Plate 26.



end on his Right Hand, he discharges his Left to take away the Paper behind the *Page*; then he grasps his Left Hand about the *Foot-end* of the *Page* in the same posture that his Right Hand grasps the *Head-end*. And having the *Page* thus between his Hands with the bottom of the *Letter* towards him, he directs both his Hands to the place on the *Stone* where the *Page* must stand, and claps it down on the *Stone* so nimbly, that the whole bottom of the *Page* comes all at once to the Face of the *Stone*, lest otherwise he endanger the *Breaking*, *Squabbling*, or *Hanging*, &c. of the *Page*. And thus he sets down all the *Pages* of the *Form*: which having plac'd in order and rank, as before I have shew'd in the Drafts of each respective Volumn, he lays the *Chase* about them; and (if he have not a *Form* already *Dreft*) seeks out *Inner Side* and *Head-sticks* of such a thickness, as with the *Cross* may make a *Margin* between the adjoyning *Pages* convenient to the Volumn and size of the Paper.

If his *Side* or *Head-sticks* be a little too thin, and he cannot find any to his intended thickness, he puts a *Scaboard* or two between the *Head* or *Side-stick* and the *Cross*, as well to have more *Margin* as to commode the *Press-man* (if occasion be) when he makes *Register*, as I shall further shew when I come to the Section of the *Press-man*.

Then he seeks outer *Side* and *Foot-sticks*, his *Side-sticks* of the exact length of the *Page*, or a *Scaboard* shorter, or he cuts them to that length, that the *Foot-stick* Bear not against the end of the *Side-stick*, because then the *Letter* will not *Rise*; for the
Foot-

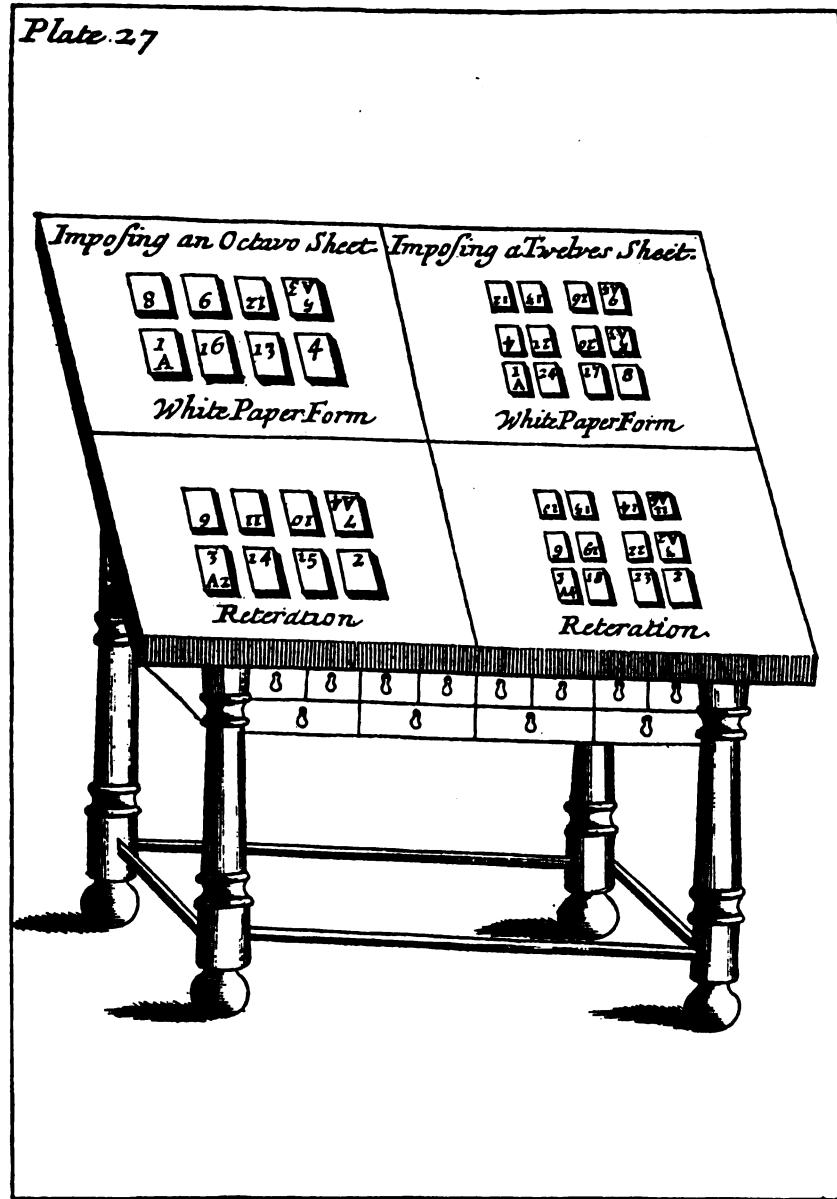
Foot-stick must be a little longer than the breadth of the *Page*, that it may shoot beyond the end of the *Side-stick*.

Then he fits the *Chase* and *Furniture* at *Side* and *Foot*, with *Fore* and *Hind Quoins*, and takes off the *Cords* from the *Pages*, as shall be shew'd by and by.

But if *Marginal Notes* come down the *Side* or or *Sides* of the *Pages* (for if there be two *Columns* in a *Page*, the *Marginal Notes* may come down both sides) then, before he fits his *Foot-sticks* he sets a *Scaboard* the length of the *Page*, against the side of the *Page* the *Notes* come on, and a row of *Quotations* almost down the length of the *Page*, or sometimes but one or two in a place at convenient distances, to keep the *Letter* of the *Side* of the *Page* upright, according as he finds his particular *Notes* stand near or far asunder, and afterwards fits his *Foot-stick*. Then he *Sets* his *Notes*, commonly between the *Cheeks* of his *Stick*, which for that purpose are fitted to the *Measure* of the *Quotation*: And having *Set* them, he places them in the proper places where they must come in, and with *Quotation Quadrats* of proper *Bodies*, *Justifies* them up, feeling (at last) carefully and cautiously at the *Foot*, that they be neither too soft nor too hard *Justified* to the length of the *Page*.

Now if he have a *Chase*, or *Form*, or *Furniture* already *Dreft* (these several phrases are used, though they all signify the same thing.) If he have (I say) a *Form Dreft*, that is, if he or other Workmen have been Working on the same *Work*, i. e. *Book*, before he uses one of the *Wrought-off Forms*, and having it on

Plate 27



on a *Letter-board*, *Rinc'd*, as was shew'd in ¶ 2. of this Section, he places it on a Bench or Joint-stool, on that Hand that stands most commodious with that end of the *Stone* he *Imposes* on, and so as there may be a corresponding position, with the *Form Wrought off* and that *Imposing*, viz. that the *First Page* (and consequently all the rest) of the *Wrought off Form* stands on the same Hand with the *First Page* of that *Form* that is *Imposing*.

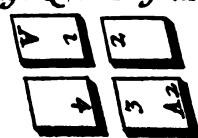
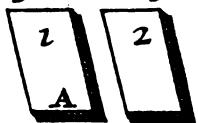
Then taking out and laying the *Quoins* in their proper places, as I shew'd when he *Script* the *Form*, at the latter end of ¶ 2. he a little wriggles the *Chase* from one Side to the other, and forward and backwards to Loosen it, and the *Cross* or *Crosses* from the close pinching of the *Letter* and *Furniture*: then takes it off the *Chase*, and lays it about those *Pages* he is *Imposing*: Then with his two fore-fingers and Thumbs he takes away the *Inner Side-stick* and the *Head-stick* at once, and at once removes them to the responding *Quarter* of the *Form Imposing*, into the responding places from whence he took them in the *Wrought off Form*. And as he does by the *Inner Side-sticks*, so he does by the outer *Side-sticks*, and by the *Quoins*; placing them in their respective proper places between the *Furniture* and *Chase*, or so many of the foremost *Quoins*, as will go in before the *Cords* are unwhipt from the *Pages*. Thus the *Wrought off Form* is *Script* and *Naked*; and stands by to *Distribute*.

Having thus translated the whole *Furniture* of the *Wrought off Form* to the *Form Imposing*, he finds the end of the *Cord* that he left sticking up above the
Face

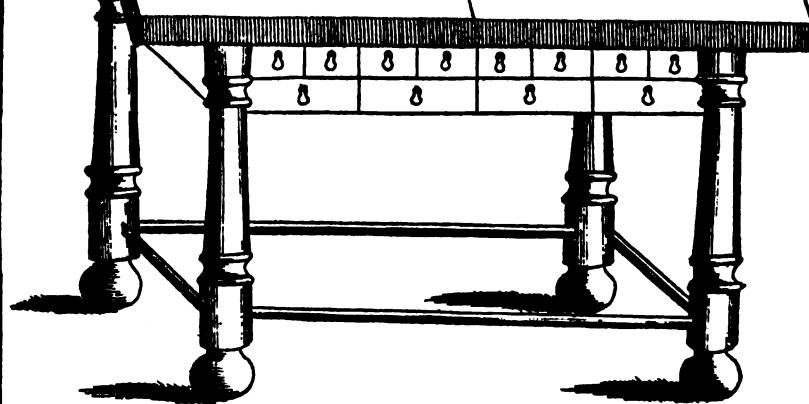
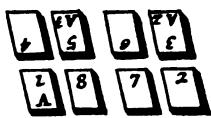
Face of the *Letter* (which perhaps by this time is got between the *Furniture* and the *Page*) and laying the Ball of his left Thumb, on the *Face* of the *Letter* at the *Direction* corner of the *Page*, to keep it from *Rising*, he takes the aforesaid end of the *Cord*, between the Fore-finger and Thumb of his Right Hand, and pulls gently to loosen the Noose that fastned the *Cord* when he *Tyed* up the *Page*, till he draws the Noose out, and after it successively all the several Whippings; which done, he places the Balls of his Thumbs, one against the middle of the *Side-stick*, and the other against the middle of the *Foot-stick*, and at once thrusts the *Page* close against the *Inner-Side* and *Head-stick*, and so makes room to get in all the *Quoins*. But if there be more than one *Page* in a *Quarter*, as in *Octavo's* and *Twelves*, then he unties all the *Pages* of that *Quarter*, beginning with the *Inner Pages* first, before he can put in the *Quoins*. Then again, thrusting hard with his Thumbs, against the outer Sides of the *Side* and *Foot-sticks* of the several *Quarters*, to thrust the *Letter* up tight and Square, he looks over the *Form* as nicely as he can, to see what *Letter* or *Letters* may *Rise* in the *Form*, (that is, stand higher than the rest) and with the Balls of his Fingers of both his Hands, (the *Quoins* being close and hard thrust up) pats upon the *Face* of the *Letter* to beat them down: But this is not enough to smoothen the *Form*, but only to smoothen it so as the edges of the *Dressing-block* (when it comes to smoothen it quite) may not job against them. Then he takes the *Dressing-block*, described Section 9. ¶ 3. in his left Hand, and lays the

Plate 28.

Imposing a Folio Half Sheet. Imposing a Quarto Half Sheet.



Imposing an Octavo Half Sheet. Imposing a Twelve-mer Half Sheet.



the smooth side of it upon the *Face* of the *Letter*, at the bottom of the *Quarter* next him; or he takes the *Shooting stick*, or sometimes the lower part of the clutched Fist of his right Hand, and knocks either with the Head of the *Shooting-stick* (or his Fist, as aforesaid) gently upon the upper Side of the *Dressing-block*, with quick knocks, removing the *Dressing-block* in a lineal rank upwards, and knocking still quick upon it, as it goes along and comes down again with the *Dressing-block*, in another lineal rank parallel to the first: Then in the same order goes up again and down again, till he have run over the whole *Form*, still knocking with quick knocks upon the *Dressing-block*, that so he may be sure to press down every *Rising Letter* in the whole *Form*, if he see any *Spaces* or *Quadrats* stick up, he thrusts them down with his *Bodkin*.

Then to *Lock* up the *Form*, he takes the *Shooting-stick* in his Left Hand and the *Mallet* in his Right, and placing the *Foot* of the *Shooting-stick* against the small *Quoin* between the *Side stick* and the *Chase*, drives that a little gently up, and then removes the *Shooting-stick* to the next *Quoin*, and so to the third *Quoin* (if there be so many) between the *Side-stick* and the *Chase*; Then removes his knocking to the thick end of the *Foot-stick*, and afterwards knocks the *Foot Quoins* gently up: Then knocks pretty strongly with the *Shooting-stick* against the thick end of the *Side stick*, and *Drives* the *Quoins* yet harder up: Then to the thick end of the *Foot stick*, and and *Drives* those *Quoins* also harder up. Then at last knocking again, against the thick ends of the *Side* and

and *Foot-sticks*, he knocks up the *Quoins* so hard, as that he thinks the *Form* may *Rise*: To try if it will, he draws the hither Side of the long Side of the *Chase*, about an Inch or two over the edge of the *Stone*; and putting his two hands under the *Chase*, Dances the *Form* three or four times so as it may just *Rise* off the *Face* of the *Stone*: but not so high as that any loose *Letters* or *Spaces* may drop out, if there be any in; but only so high as he may see if there be any in or no. If he finds there are many in that do not *Rise* with the *Form*, he says the *Form Dances*, wherefore he looks carefully upon his *Pages of Letter*, to find out the Cause: For generally, either the *Letter Hangs* or the *Lines*, are ill *Justified*: or else it is not *Hard* enough *Lockt up*.

If he finds by his Eye the *Letter Hangs*: he must *Un-lock* and *Loosen* the *Form*, or that *Quarter* that *Hangs* pretty *Loose*, that the *Letter* may be set to Right; which he does with patting upon the *Face* of the *Letter* where it *Hangs*, with the *Balls* of the *Fingers* of both his *Hands*, to twist or turn them into a Square Position.

If it be only a *Single Letter* or two that drops, he thrusts the end of his *Bodkin* between every *Letter* of that Word, till he comes to a *Space*: and then perhaps by forcing those *Letters* closer, he may have room to put in another *Space* or a *Thin Space*; which if he cannot do, and he finds the *Space* stand *Loose* in the *Form*; he with the *Point* of his *Bodkin* picks the *Space* up and bows it a little; which bowing makes the *Letters* on each side the *Space* keep their parallel distance; For by its Spring it thrusts the
Letters

Letters that were closed with the end of the *Bodkin* to their adjunct *Letters*, that needed no closing. Or sometimes he chews a small bit of *Paper*, and with the *Point* of his *Bodkin* forces that in on one side of the *Space*: and so fills up the Vacancy between the *Space* and the *Letter*. But both these ways are meer present Helps, and (in plain terms) accounted Botches, as being an Argument that his *Lines* were not well *Justified* in his *Stick*.

If he finds the *Form* or any part of it, was not hard enough *Lockt* up, he *Locks* all, or part harder up, as was shew'd before.

But now his *Form Rises*; Wherefore he draws the Long *Side* of the *Chase* (as before) a little over the edge of the *Correcting-Stone*, and putting two or three of his Fingers into the Vacancy between the *Quoins*, or else into the Vacancy at the ends of the *Chase*; he rears the *Form* upon the farther *Side* of the *Chase*, and removing his right Hand to the Short end of the *Chase*, grasps it near the upper corner, and then discharges his left Hand also; and removes it to the diagonal corner of the *Chase*; and so slides the long *Side* of the *Chase* off the hither Edge of the *Correcting-Stone*: Then slipping his Hands to the bottom of the *Chase*, about two or three Inches within the corners, with the insides of his Hands towards the *Face* of the *Letter*, and leaning the upper *Side* of the *Chase* against the upper part of his Breast, and clutching the Brawn of the inside of the upper Joynt of his Arm over the upper corners of the *Chase*, he carries the *Form* so before him to the *Press*, and lays it upon the *Stone*, for the *Press-man* to make a *Proof* of

of. The *Proof* being made, the *Press-man* brings the *Proof*, and layes it on the *Compositors Case*: and he brings the *Form* again and layes it on the *Correcting-Stone*, and rubs it over with the *Ly-Brush*, as shall be shew'd in proper place. And the *Compositor* gives the *Corrector* the *Proof* and his *Copy* to *Correct* it by: which being *Corrected*, the *Corrector* gives it again to the *Compositor* to *Correct* the *Form* by.

¶ 8. Of Correcting.

If there be but few *Faults*, and those easie ones, the *Compositor* *Gathers* the *Corrections* in his *Stick*, beginning at the bottom of every *Page*, and so ascending upwards: Because when he is *Correcting*, the *Corrections* of the top of the *Page* stand then first in the *Stick*, and therefore are readiest to his Hand. But if there be many *Faults* he brings the *Lower-Case* to the *Correcting Stone*, and takes his *Corrections* as he uses them.

Then with the *Mallet* and *Shooting-stick* he *Unlocks* the *Form*, as was shew'd in ¶ 3 of this Section. But keeps the *Quoins* pretty tight up, to secure the *Letter* from *Squabbling* or *Hanging*.

Then he Folds his *Proof* so oft double, till all the *Pages*, except that he intends to *Correct* first are Folded out of Sight, and he also Folds down the Left Hand *Margin* of that *Page* under the *Proof*, and then lays that Folded Side of the *Page* along, and close to the same *Page* in the *Mettle*: So that the *Head-line* in the *Proof* lye in the same range with the *Head-line* on the *Mettle*, and the *Foot-line* even with

with the *Foot-line* on the *Mettal*, and consequently all the *Lines* of that *Page* both on the *Proof* and *Mettal* agree, and stand in a mutual range.

Now therefore he looks in the *Proof*, to see where the *Correcter* has markt a *Fault*, and having found it in the *Proof*, he runs along that *Line* with his Eye to the same *Line* on the *Mettle*, which he easily does, because the *Line* of *Mettle* stands in the same range with that in the *Proof*, and finding the *Fault* in the *Mettle* also, he having now his *Bodkin* in his right Hand, with the *Blade* of it between his Fore-finger and Thumb, within half an Inch or three quarters of the *Point*, and the middle of the *Bodkin* within his clutched Hand to guide and command it, he sticks the *Point* of his *Bodkin* into the *Neck* of the *Letter*, viz. between the *Beard* and the *Face*, and lifts it with the *Point* of the *Bodkin* so high up above the *Face* of the other *Letters*, that he can lay hold of it with the Fore-finger and Thumb of his left Hand to take it quite out.

I must a little digress, to paraphrase on the posture he holds the *Bodkin* in: For in the sticking his *Bodkin* into the *Letter*, he holds the *Blade* of it, so that it may make as small an angle with the *Face* of the *Letter* in the *Form* as he can, viz. as flat towards the *Face* of the *Letter* as he can, without touching the *Face* of any of the adjacent *Letters* with the *Blade* of the *Bodkin*; For if he touches the *Face* though lightly, yet it may more or less *Batter* and spoil the *Face* of those *Letters* it touches, and so he creates himself a fresh trouble to mend them.

The reason why he holds the *Blade* of the *Bodkin*
as

as flat to the *Form* as he can, is, Because a small Horizontalish entrance of the *Point* of the *Bodkin* into the *Neck* of the *Letter*, will raise the *Letter* up above the *Face* of the *Form*, the *Blade* of the *Bodkin* being fastned in the little Hole it makes in the *Neck* of the *Letter*: But if he should stick the *Point* of the *Bodkin* straight or straightish down upon any part of the *Letter*, it would indeed make an Hole, but not fasten in the *Mettle*, to draw it up; for the weight of the *Letter* would make it slip off the round and smooth *Point* of the *Bodkin*. Besides the pressing the *Point* of the *Bodkin* with his right Hand against the side of the next *Letter* on his left Hand, keeps the *Point* of the *Bodkin* fast in the little Hole it makes in the *Neck* of the *Letter*, and therefore though the *Bodkin* have but a little entrance, yet it has hold enough to draw it up by. Now to return.

Having taken the Fault out, he puts the *Letter* that the *Correcter* markt in the *Margin* of the *Proof* in the room of it. Suppose an o were markt and n dasht out, therefore when he has taken the n out he puts an o in the room: These two *Letters* being of equal thickness, gives him no trouble to *Justifie* the *Line* again after the Fault is *Corrected*; but if they had been of unequal thickneses, as suppose an m to come out, and an n to be put in; in this case he puts in a *Space* between two words (where he finds most convenient) to *Justifie* the *Line* again: Or suppose an n to come out, and an m to be put in; now he must take out a *Space* where he finds most convenient to make room for the m, as being thicker by a *Space* than an n. Thus as he *Corrects* he

he still has a care to keep his *Lines* true *Justified*; which he tries by pressing the Balls of his two middle Fingers pretty hard against the ends of three *Lines*, to make them rise a little above the *Face* of the *Form*, whereof the *Line* he examines is the middlemost; for if that *Line* is not hard enough *Justified*, he will between the Balls of his Fingers find it hollow, or it will not *Rise* with the other two: And if it be too hard *Justified*, he will find the Balls of his Fingers *Bear* only or hardest against that *Line*, and the *Line* on each side it will not *Rise*.

If there be a long *word* or more left out, he cannot expect to *Get* that in into that *Line*, wherefore he must now *Over-run*; that is, he must put so much of the fore-part of the *Line* into the *Line* above it, or so much of the hinder part of the *Line* into the next *Line* under it, as will make room for what is *Left out*: Therefore he considers how *Wide* he has *Set*, that so by *Over-runing* the fewer *Lines* backwards or forwards, or both, (as he finds his help) he may take out so many *Spaces*, or other *Whites* as will amount to the *Thickness* of what he has *Left out*: Thus if he have *Set wide*, he may perhaps *Get* a small *Word* or a *Syllable* into the foregoing *Line*; and perhaps another small *Word* or *Syllable* in the following *Line*, which if his *Leaving out* is not much, may *Get* it in: But if he *Left out* much, he must *Over-run* many *Lines*, either backwards or forwards, or both, till he come to a *Break*: And if when he comes at a *Break* it be not *Gotten in*; he *Drives* out a *Line*. In this case if he cannot *Get in* a *Line*, by *Getting in* the *Words* of that *Break* (as I just now shew'd you how

how he *Gets-in* what was left out in the *Proof*) or by making less *White* to the *Title* of a *Section* or *Chapter* (if any happen in that *Page*) he must *Over-run* the next *Page* backwards or forwards, till that *Line Comes in*: Thus sometimes he *Over-runs* all the succeeding *Pages* of the *Sheet*, and at last perhaps *Drives out* a *Line to Come in* in the next *Sheet*.

If he have *Set* a word or small sentence twice, he must take that out, and *Drive-out* his *Matter*. If he be near a *Break*, and the *White* of that *Break* not very long, he may perhaps *Drive it Out* at the *Break* by putting in part of the next *Line* to fill up almost so much as he took out; but not quite so much, unless his *Matter* was at first so *Wide Set* that he can *Space out* no more, or unless the *Break-line* he comes to have so much *White* in it that he fears *Getting-in* that *Line*: If either of these inconveniences happen, he *Drives-out* as much as he can backwards in the *Matter*; that is, he takes out so much as he thinks he cannot *Drive-out* when he is at the *Break*: He takes it out at the beginning of the *Line*, and puts it in at the latter end of the *Line* before it: But first he takes out almost so much of the beginning of his Second upper *Line*, to make room for it: I say almost so much, because he intends to *Space-out* the rest if it were not too *Wide Set* at first. And thus he runs on from *Line* to *Line*, still taking out less and less at the beginning of every former *Line*, and putting it into the *Line* above that, that he may *Space-out* his *Matter* as he *Over-runs*, till his *Double-Setting* is *Driven-out*.

But if he have *Set* a *Line* or *Lines* twice, and cannot

cannot *Drive* it or them *Out* at a *Break* or *Breaks*; or that he cannot *Set* more *Whites* at the beginning of a *Section* or *Chapter*, he must *Over-run* the next *Page* or more, or the whole *Sheet* till it be *Driven-out*: And if in *Over-running* the whole *Sheet* it be not *Driven-out*, he must *Set* so many *Lines*, of the following *Matter* as will make up the last *Page*.

Many times either for *Getting-in* or *Driving-out*, the *Compositor* will chuse to *Over-run* in his *Stick*, and then he *Wets* the *Page* he is to *Over-run*, with the *Sponge* (that the *Letter* may the better stick together) and he separates so much of the former part of the *Page* as he intends to *Over-run*, from the rest of the *Page*, and places himself before the *Notches* of the *Letter*, and takes up about an Inch and an half or two Inches of the first Separated *Line*, and brings it to the *Stick*; and as it is coming along he turns the *Notches* upwards, and places that *Taking up* in the *Stick*. When he *Takes-up*, he places the *Inside* of the first *Joynt* of his middle Finger of his right Hand against the beginning of that *Line*, and the Ball of his *Thumb* against the other end of that *Taking-up*, and the Ball of his *Fore-finger* behind the *Taking-up*, about the middle of it, and so pinching it lightly brings it to his *Stick*, as aforesaid. And having thus by several *Takings-up*, gotten a *Line* into his *Stick*, he looks it over to see what *Spaces* or other *White* he can take out or put in, according as he has either *Left-out* or *Set-twice*, and then he *Justifies* the *Line* again, as was shew'd in ¶ 5. of this Section. And thus he *Over-runs Line after Line*, till

till he has *Gotten-in* or *Drove-out* his *Leaving-out*, or his Twice Set Matter.

If the *Compositor* is not firmly resolv'd to keep himself strictly to the Rules of good Workmanship, he is now tempted to make *Botches*; viz. *Pidgeon-holes*, *Thin-Spaces*, no *Space* before a *Capital*, *Short &c.*, *Abbreviations* or *Titled Letters*, *Abbreviate Words*, &c. And if Botching is in any Case excusable, it is in this; for with too great *Spacing-out* or too *Close Setting*, he many times may save himself a great deal of Labour, besides the vexation of mind, and other accidental mischiefs that attend *Over-running*.

It sometimes chances that a *Compositor*, by having two or more *Pages* in his *Sheet* with the same *Direction-line*, or by mistaking the right place of his *Page* when he set it by on a Paper under his *Cafe*, as was shew'd ¶ 7. of this Section, or by some other accident that may happen; I say it sometimes happens (but seldom through too much care) that he *Transposes* two *Pages*, or more, in his *Sheet*: In this case he *Unlocks* that *Quarter*, or those *Quarters* the *Pages* are in, and loosning the *Crosses* or *Croffes* from those *Pages* and their *Furniture*, takes the rest off the *Correcting-stone* with their *Furniture* about them: And if it be a *Folio* or *Quarto* he does not wet the *Pages*, because those *Forms* have *Furniture* about every side of the *Page*, which will keep up the *Letter* from falling down; But he only places the *Balls* of his two *Thumbs* against the outside of the *Furniture*, about the middle of the *Head* and *Foot* of the *Page*, and the *insides* of his two *middle Fingers*, assisted by his *Fourth* and *Little Fingers*,

gers, in a parallel position to his middle Fingers, (to strengthen them against the *Furniture*) about the middle of the *Sides* of the *Page*, letting the length of his Fingers reach as far from each corner of the *Page* towards the middle of it as he can, and so by a steady pressing the Balls of his Thumbs and the Balls of his Fingers on each Hand towards each other, he draws, or as he sees most convenience, thrusts the whole *Page* out of its wrong place, and sets it by on the *Stone*, till in the same manner he removes the other *Transpos'd Page* into the place of the first remov'd *Page*: And thus if there be more than two *Transpos'd Pages* in the *Sheet*, he removes them all, and *Sets* the right *Pages* in their right places.

But if it be an *Octavo* or *Twelves*, or any other *Form* that has *Gutter-sticks* between two *Pages*, he must Wet those *Pages* he leaves on the *Stone*, because when he removes one *Page*, by the help of the *Gutter-stick*, one side of the other *Page* will stand *Naked*; and consequently with the Shaking, Joggling, or Trembling of the *Stone* or Floor, the *Letters* on that side will be in great hazard of falling down, especially if the *Face* of the *Stone* happens not to be truly Horizontal: I say, happens not to be truly Horizontal, because the *Stone* is seldom laid with any caution, but only by gues.

Having placed the *Pages* in their right places, he again lays the *Chase* about them, and *Locks* them up again, as was shew'd in ¶ 7. of this Section: Then he carries the *Form* to the *Press*, and lays it on the *Stone* for a *Second Proof*, and sometimes for

a

a *Third Proof*; which having *Corrected*, he at last brings the *Form* to the *Press*, and again lays it on the *Stone Right*, viz. in *Folio's* and *Octavo's* with the *Foot of the First or Third Page* (which he easily knows by their *Signatures*) towards him, and the side of it next the *Plattin*: And in *Quarto's* and *Twelves*, with the *Foot of the First or Third Page* next the *Tympan*.

After all this *Correcting* a *Revise* is made, and if any *Faults* are found in any *Quarter* of it, or in all the *Quarters*, he calls to the *Press-man* to *Unlock* that *Quarter*, or the whole *Form*, that he may *Correct* those *Faults*: For when the *Form* is on the *Press* it is not the *Compositors* task to *Un-lock* the *Form*: Neither would a good *Press-man* be content he should make a knocking on his *Press*, especially if the *Press-man* have *Made-ready* his *Form*, as shall be shewed in the next Section.

¶ 9. Of Counting or Casting off Copy.

Counting or *Casting off Copy* (for both Phrases are indifferently us'd) is to examine and find how much either of *Printed Copy* will *Come-in* into any intended number of *Sheets* of a different *Body* or *Measure* from the *Copy*; or how much *Written Copy* will make an intended number of *Sheets* of any assigned *Body* and *Measure*.

The Rule and Method of *Counting off* either *Printed* or *Written Copy* is the same, only *Written Copy* is more difficult, because subject to be irregularly *Writ*: Therefore if I shew you how the *Compositor* *Casts*

Casts off Written Copy, I do at the same time inform you how to *Count off Printed Copy*.

The *Compositor* therefore first considers what *Bodied Letter* his Work is to be wrought on: then he carefully peruses the *Copy*, considering with himself whether it be evenly Written or unevenly Written, *viz.* whether it be throughout of an equal siz'd Hand, or whether part be close Written and part wide Written; if it be an equal siz'd Hand, that is, equally close Written in general, as well between *Letter* and *Letter*, *Word* and *Word*, as between *Line* and *Line*, he has scarce more trouble to *Count it off* than *Printed Copy*.

Wherefore, the *Measure* being given, he *Composes* one *Line* in his *Measure*: The *Matter* he *Composes* he chuses out of that part of his *Copy* that in his Judgement he admits is most indifferently Written, between Wide and Close, as being such as his whole *Copy*, one part with another, will likeliest *Come-in* alike with. This *Line* being *Compos'd*, he considers how much of his *Copy* it takes up, *viz.* whether it runs *Line* for *Line*, or whether two *Lines* of his *Copy* make one *Line* in his *Stick*; or whether a *Line* and an half, or a quarter, or half quarter of his *Copy*, &c. make one *Line* in his *Stick*; or whether a *Line* of his *Copy* make two *Lines* in his *Stick*, or a *Line* and a half, or a quarter, or half a quarter, &c. and accordingly calculates what just number of *Lines* will make another just number of *Lines* in his *Stick*. For Example.

If his *Copy* and *Measure* run *Line* for *Line*, then consequently 10, 20, 30 *Lines* of the *Copy* will make

10,

10, 20, 30 *Lines* in the *Measure*; and accordingly he counts what number of *Lines* in his *Copy* will make a *Page*; and by that, what number of *Lines* will make two *Pages*, four *Pages*, eight *Pages*, and consequently so many *Pages* and *Sheets* as he is to *Count off*.

If two *Lines* of *Copy* make one *Line* in the *Stick*, then consequently ten *Lines* in the *Copy* will make five *Lines* in the *Stick*; twenty *Lines* in the *Copy* ten *Lines* in the *Stick*, &c.

If a *Line* and a half of the *Copy* make one *Line* in the *Stick*, then fifteen *Lines* of *Copy* makes ten *Lines* in the *Stick*, thirty makes twenty, &c.

But a pair of *Compasses* makes the best expedition in *Counting off* of *Copy*, and (by my experience) I have found the surest way. I *Compose* one *Line* as aforesaid; if the *Line* I *Compos'd Gets-in* part of the next *Line*, viz. the second *Line* of the *Copy*, I place one Foot of a pair of *Compasses* at the beginning of the *First Line*, and open the other Foot to what was *Got-in* of the *Second Line*, and turn the *Compasses* about upon the Foot in the *Second Line*, till the other Foot reach the *Third Line* of the *Copy*; then turn about the Foot in the *Third Line* of the *Copy* till the other Foot falls in the *Fourth Line* of the *Copy*; and so from the *Fourth*, to the *Fifth*, *Sixth*, &c. till the *Compasses* end with a *Line* in the *Copy*, or near the end of a *Line*, rememb'reng as I go along, how oft I turn'd the *Compasses* about. Suppose, for Example, seven times: Then I number the *Lines* of *Copy*, beginning with the first *Line* and ending with the last *Line*, that the Points of the

the *Compasses* were turn'd over, and find them Eight, Nine, Ten, &c. and say Eight, Nine, Ten, &c. *Lines* of the *Copy*, makes Seven *Lines* of the *Measure*.

As now I have shew'd you how I *Count off Copy* if it come in more than *Line* for *Line*, so I shall shew you how I proceed if a *Line* in the *Copy Drive out* in the *Measure*.

It is but placing one Foot of a pair of *Compasses* at the farther end of the first *Line*, and opening the other Foot to the place where the *Compos'd Line* ended, and by turning about the *Compasses*, as before, to the Second, Third, Fourth *Lines*, &c. till they end in the beginning of a *Line* in the *Copy*; for then (as before) counting the number of *Lines*, beginning with the first, and ending with the last; Suppose Eight, Nine, Ten, &c. I say Eight, Nine, Ten, &c. *Lines* of the *Copy* makes so many *Lines* as is the number of times the Feet of the *Compasses* were turned about, between the first *Line* and the last *Line*.

Another way Arithmetically perform'd.

Suppose it be requir'd to know how many *Sheets* 127 *Pages of Written Copy* will make? I count the number of *Letters* contained in an ordinary *Written Line of Copy*, such a *Line* as I guess is likely to *Run Line for Line* with the generality of the rest of the *Copy*: And (for Example) I find 43 *Letters* in that *Line*: Then I count the number of *Lines* in an whole *Page*, and find 35 *Lines*, I Multiply 43 by

35,

35, the Product is 1505 for the number of *Letters* in an whole *Page*: Then I multiply 1505 by 127, the number of *Pages* in the whole *Written Copy*; the Product is 191135, the number of *Letters* in the whole *Written Copy*.

If it be now required to know how many *Sheets* in *Quarto*, of the *English Body* this *Written Copy* will make, agreeable to any *Measure* already *Printed*? As for Example, the length of a *Page* given is 33 *Lines*, and in one *Line* is contained 47 *Letters*: I multiply 47, the number of *Letters* in one *Line*, by 33, the number of *Lines* in a *Page*, the Product is 1551. With this Product I divide 191135, the number of *Letters* in the whole *Written Copy*, and the Product gives 123, that is, 123 *Pages* in *Quarto*, which divided by 8, the number of *Pages* in one *Sheet*, gives 15 *Sheets* and 3 *Pages*.

If it be required to know how many *Sheets* it will make of *Pica* in an *Octavo*, or of *Long Primer* or *Brevier* in *Twelves*, &c. the manner of Working is the same: For Multiplying the number of *Letters* in one *Line* by the number of *Lines* in one *Page*, and Deviding the number of *Letters* in the whole Work (suppose, as in the foregoing Operation by 191135) by the number of *Letters* in one *Page*, the Product gives the number of *Pages* in the Quotient: And then at last Deviding the number of *Pages* by 16 if an *Octavo*, or 24 if *Twelves*, &c. you have in the Quotient the number of *Sheets*, and in the Remain (if any be) the number of *Pages*.

These two last ways are the surest Rules for *Counting off Copy*: But yet the *Compositor* has several Considera-

siderations upon his *Copy* before he dares conclude he has truly and exactly *Counted off*.

For first, a strict regard must be had to the *Breaks* that come in the *Copy*: For long *Breaks* in the *Copy* are generally likely to be *Got-in*, and consequently a *Line* is *Got-in*: But short *Breaks* often *Drive-out* a *Line*. Therefore though the *Compositor* has already in general *Cast off* his *Copy*, yet he more particularly considers his *Breaks*; and indeed they serve as so many Regulators to him, to keep him within the bounds of his *Counted off Copy*: For every *Break* he examines by the number of *Lines* from the last *Break*, by the length of the *Break*, and by the close or wide Writing of his *Copy*, whether it will be *Got-in* or *Drove-out*, and accordingly marks it in his *Copy*, before he reckons he has done *Counting off*.

A *Break* to be *Got-in* he marks thus [, and adjoyns in Numerical Figures, the number of *Lines* the *Matter* between the last *Break* and it will make. A *Break* to be *Drove-out* he marks thus ---, and (as aforesaid) adjoyns Numerical Figures to remember him what number of *Lines* he accounted that *Matter* to make from the last *Break*.

If *Chapters*, *Sections* or *Paragraphs* happens in the *Copy*, the *Compositor* takes room enough to set them and their Titles gracefully in; and marks in Numerical Figures what number of *Lines* he assigns for it.

If as he *Counts off* his *Copy* he finds *Abbreviated Words*, he tells the *Abbreviated Words* to the full number of *Letters* that spells the Word at length, because in *Composing* he *Sets* those Words at length:
And

And should he not consider it in his *Counting off*, he would in *Composing* find his *Matter Run out* from his *Copy*.

Scarce any *Copy* is so regularly Written (as hath several times before been hinted) but that some places are Wider, and other places Closer Written, than the generality of the *Copy*, wherefore he considers both these accidents in his *Copy*, and accordingly allows for them.

If it happens that much *Italick* comes in the *Copy*, as sometimes two or three *Lines*, or more, or half a *Page*, an whole *Page*, or several *Pages*; the *Compositor* considers *Italick* is thinner than *Roman*, and consequently *Gets-in* more than *Roman* does, and therefore in his *Counting off* will allow accordingly for it.

The proportion that I allow for it is as 9 to 10, or which is all one, as 45 *Roman Letters* is to 50 *Italick Letters*: So that if a *Measure* holds 45 *Roman Letters*, the same *Measure* will hold 50 *Italick Letters*.

As *Italick* is thinner than *Roman*, so the *English Face* is thicker than the *Roman*; wherefore if he meets with the *English Face*, he considers that accordingly.

I find the proportion to be as 40 to 43, *viz.* 40 *English Faced Letters* fill the same *Measure* that 43 *Roman* does; and consequently for every 40 *Lines* to be *Set* in *English* he must *Count off* 43 *Lines*; and so proportionaply for more or less.

But yet I shall not deliver these my Observations on the *Italick* and *English* to hold thus in all *Italicks* and

and *Englishes*, nor all *Romans* of the same *Body* to be of an equal Thicknes, because some are *Cut Thicker* or *Thinner* on the *Face*: And besides, sometimes *Letter Cast*, though in the same *Matrices*, are by the *Founder Cast* Thicker or Thinner, and consequently in either Circumstance *Drive-out* or *Get-in*: Wherefore a *Compositor* will consider what *Fount* of *Letter* it is he Works on, and accordingly *Count off* his *Copy*.

¶ 10. *Of Papering up of Pages.*

Papering up of Pages, or *Papering up of Letter*, are two phrases indifferently used for the same meaning. Though this Operation seems so slight and trivial that it may be thought not worth mentioning, yet it being a task incumbent on the *Compositor*, it becomes mine too to shew how it is performed.

It is thus: When a *Book* is finisht, and the *Compositor* is to *Work* on other *Letter* afterwards; the *Wrought off Letter* is to be *Papered up*. The *Press-man* therefore having *Washt* the *Wrought-off Forms*, the *Compositor* *Ringes* them, as was shewed in Section 22. ¶ 3. He *Ringes* the *Letter* as well as if it were *Ringed* for present use, or rather better: for else the *Inck* that is desolved among the *Ly* would, with long standing by, harden between the *Letter*, and make the *Letter* stick so fast together that when it comes afterwards to be *Distributed*, the *Compositor* shall not without great difficulty and trouble get them asunder. This sticking together of the *Letter* is call'd *Baking* of the *Letter*. And *Compositors* in this Case say, *The Letter is Bak'd.* The

The *Compositer* having *Script* the *Form*, whips *Cords* as tight as he can about every *Page*, not to *Tye* them up for good and all, but aswell to keep up the *Letter* on the sides of the *Pages* that it fall not down, while it stands by for some dayes on the *Letter-board* to *Dry*, as to keep the *Letter* tight together that he may the better with his Hands take an whole *Page* at once off the *Letter-board*.

When it is *Dry*, if the *Pages* are not too broad for his *Grasp*, he places his Body against a side of the *Pages*, and the Balls of his two Thumbs against the side of a *Page*, one indifferently between the middle and *Head* of the *Page*, and the other between the middle and *Foot* of the *Page*, and with the three Fore-fingers of each Hand placed on the other side of the *Page*, grasps the *Page* between them and his Thumbs; and to keep his Hands the steddier, stretches the insides of his Little-fingers one against the *Head* the other against the *Foot* of the *Page*: And having the *Page* thus Steddy between his Hands close prest on all the sides of the *Page*, he with a quick motion nimblly rears one side of the *Page* upright, and receives the weight of it either on the Balls of his Thumbs or on the Balls of his Fingers, as best likes him; and so carries it to his *Galley* and *Tyes* it firmly up; as was shewed ¶ 6. of this Section.

As he took and *Tyed* up this one *Page*, so he takes and *Tyes* up all the *Pages*. But if a *Page* be too big for his *Grasp*, he underlays the *Slice* of a *Galley* till it lye within a Scaboard so high as the edge of the *Letter-board*, and getting some one to hold the *Slice* steddy against the edge of the *Letter-board* he slides the

the *Page*, with the *Head* or *Foot* forwards upon the *Slice*, and so carries the *Page* to the *Galley* and *Tyes* it up, as aforesaid.

He sends the Boy to the Warehouse-keeper for so much Paper as he finds he shall want; and if the *Pages* are small, he layes a single Sheet down on the *Correcting-Stone* or on a *Letter-board*, and sets a *Page* down on that Sheet of Paper, so as the farther Side of the *Page* may stand towards one end of the Sheet; and so far on the Sheet, as that the end of it may lap over the *Face* of the *Letter*, and about half way down the *Shank* of the *Letter*, on the hither side the *Page*: And smoothing the Paper tight over the *Face* of the *Letter*, and half way down the *Shank* on the hither Side, and quite down the *Shank* at the *Head* and *Foot* of the *Page*, he folds the loose Paper that hangs over the ends of the *Page*, from each corner of the *Page*, to end in an Angle in the middle of the loose Paper, and then folds the other end of the Sheet of Paper tight over the Paper that covers the *Face* of the *Letter*; and also folds the loose Paper at the ends of the *Page* down into Angles, as he did the former loose ends: Then rearing his *Page* over the further side, lays the *Face* downwards, still smoothing the Paper tight, and folding in the un-folded corners, to meet in the same Angles with the former folded Angles in the middle of the loose Paper: And thus so long as he has Paper to spare he turns his *Page*, wrapping it at least twice, or if he can thrice about in Paper, folding and doubling down the Loose Paper into Angles as before: And at last turns up those Angles or Lappets either

either over the *Face* or Bottom of the *Letter*, and turns the *Page* upon those folded Lappets, that its weight may press and keep them close under the *Page*.

If the Pages are large, so as one *Sheet* will not compass them twice or thrice about, to be strong enough to bear the *Letter*, which generally sinks downwards into the middle of a *Page*, he lays two, or sometimes three Sheets under the *Page*: And as he wrapt up the first Lay of Sheets, adds more to lengthen them out, that they may wrap at least three or four times about the great *Page*.

Having thus *Paper'd up* the *Pages*, and folded the Lappets under them, he writes upon the upper side what *Letter* it is, *viz.* *Long-Primer Roman*, *Long-Primer Italick*, *Pica Roman*, *Pica Italick*, *Pica English*, *English Roman*, *Italick*, &c. and sets them by for the *Master-Printer* to dispose of.

§. 23. *Of the Correcter, and his Office.*

A *Correcter* should (besides the *English Tongue*) be well skilled in Languages, especially in those that are used to be Printed with us, *viz.* the *Latin*, *Greek*, *Hebrew*, *Syriack*, *Caldæ*, *French*, *Spanish*, *Italian*, *High Dutch*, *Saxon*, *Low Dutch*, *Welch*, &c. neither ought my innumerating only these be a stint to his skill in the number of them, for many times several other Languages may happen to be Printed, of which the Author has perhaps no more skill than the bare knowledge of the Words and their Pronunciations, so that the
Or-

Orthography (if the *Correcter* have no knowledge of the Language) may not only be false to its Native Pronunciation, but the Words altered into other Words by a little wrong Spelling, and consequently the Sense made ridiculous, the purpose of it controvertible, and the meaning of the Author irretrievably lost to all that shall read it in After times.

He ought to be very knowing in Derivations and Etymologies of Words, very sagacious in *Pointing*, skilful in the *Compositors* whole Task and Obligation, and endowed with a quick Eye to espy the smallest *Fault*.

But I shall say no more of his Qualifications; but suppose him endowed with all necessary accomplishments for that Office.

The *Compositor* either carries him a *Proof*, or sends the Boy with it to his Apartment, which is commonly some little Closet adjoyning to the *Composing-room*: And the *Master-Printer* appoints him some one that is well skill'd in true and quick Reading, to Read the *Copy* to him, whom I shall call the *Reader*.

This *Reader*, as I said, Reads the *Copy* to him, and the *Correcter* gives attention; and at the same time carefully and vigilantly examines the *Proof*, and considers the *Pointing*, *Italicking*, *Capitalling*, or any error that may through mistake, or want of Judgement be committed by the *Compositor*.

If he finds one *Letter Set* instead of another, as in this Word tho for the, he dashes out the wrong *Letter*

Letter thus th \emptyset , and Writes the *Letter* it should be on the Right Hand *Margin* of the *Page*, right against the same *Line*, and makes a Dash behind it, as you may see in the *Margin*.

e/

If two or three, or more Words in the same *Line* have *Faults* in them, as in these Words, P \ddot{o} tien \ddot{e} pet f \ddot{o} rce; where first a/ c/ r/ o/ an o is *Set* instead of a, e instead of c, t instead of r, and c instead of o: These remarks in an orderly succession towards the Right Hand, against the same *Line*, as you may see in the *Margin*.

But if one word be *Set* instead of another, as Scoff instead of Smile, here he marks Scoff out thus Scoff, and writes Smile, as in the *Margin*.

Smile /

If a *Word* or *Words*, or *Letter*, or *Point* be *Left out* he makes this mark ^ where it is *Left out* for a mark of *Insertion*, and Writes in the *Margin* what must come in.

If a *Space* be *Left out* he makes the former mark of *Insertion* where it should come in, and makes this mark ✕ in the *Margin*.

✖/

If a whole Sentence be *Left out*, too long to be Writ in the *Margin*, he makes the mark of *Insertion* where it is *Left out*, and only Writes (Out) in the *Margin*. If the Sentence *Left out* be not very long, he Writes it under the *Page*, or on the Left Hand *Margin* of the *Page*: But if it

(Out)

it be too large to be Writ in the *Margin*, or under the *Page*, he Writes in the *Margin*, See the Copy. (See the Copy)

If a Word or Sentence be Set twice, as *Him* *Him*, he marks out one *Him* thus *Him*, and makes this mark *J* in the *Margin*, for *Deleo*, to take out.

If a *Letter* be turned thus *p*, he dashes it out as you see, and makes this mark in the *Margin*.

If Words are *Transposed*, that is, if one Word stand in another Words place, as, no I love Swearing, and it should be, I love no Swearing; he marks this *Fault* thus, no I love Swearing, and makes this mark *f* in the *Margin*. The like mark he makes in *Matter* and *Margin* if two *Letters* are *Transpos'd*.

If a *Space* or an *m* or *n* *Quadrat*, &c. stick up, and *Print Black*, as between these words, he marks in the *Margin* thus.

If a *Word* be Set in *Roman Letter* instead of *Italick* or *English Letter*, he dashes the Word underneath thus, and Writes *Ital.* or *Eng.* in the *Margin*.

In like manner, if a single *Let-*
or more *Letters* be Set in *Roman Let-*

*J/**Q/**f/**Ital / Eng /**|*

Letter, and it should be *Italick* or *English Letter*; or if in *English* or *Italick*, and it should be *Roman Letter*, he dashes the *Letter* or *Letters* thus underneath, and writes *Ital.* *Ital/ Rom/ Eng/ Rom.* or *Eng.* in the *Margin*: Or if *Lower-Case Letters* be *Set* instead of *Capitals*, he dashes them underneath, and Writes *Capt.* in the *Margin*. *Capt./*

Having Read the *Matter* of the *Proof* he examines again if the *Form* be right *Impos'd*, for though he before turn'd the *Pages* in the *Proof* as he read them according to their orderly places, yet he will scarce trust to that alone, but again examines them on purpose, and distinctly, which he does not only by the *Direction Word*, but by examining the whole Sentence the *Direction* comes in, both at the end of the *Page*, and the beginning of the next *Page*.

He examines that all the *Signatures* are right, and all the *Titles* and *Folio's*.

If the Work be large *Forms* and small *Letter*, he has a second, and sometimes a third *Proof*, which he Reads as the first.

After the Second or Third *Proof* he has a *Revise*, which is also a *Proof-sheet*: He examines in this *Revise*, *Fault* by *Fault*, if all the *Faults* he markt in the last *Proof* were carefully mended by the *Compositor*; if not, he marks them in the *Revise*.

Thus you see it behoves him to be very careful as well as skilful; and indeed it is his own interest to be both: For if by his neglect an *Heap* be spoiled, he is obliged to make Reparation.

A D-

Advertisement to AUTHORS.

*A*lthough I have in the precedent Exercises shew'd the Accomplishments of a good Compositor, yet will not a curious Author trust either to his Care or Abilities in Pointing, Italicking, Capitalling, Breaking, &c. Therefore it behoves an Author to examine his Copy very well before he deliver it to the Printer, and to Point it, and mark it so as the Compositor may know what Words to Set in Italick, English, Capitals, &c.

For his Italick Words he draws a line under them thus: For English Words he draws two lines under them thus; and for Capitals a line of Pricks thus, or else draws a line with Red Inck.

If his Copy, or any part of it, be Written in any Foreign Language, he is strictly to spell that Foreign

Foreign Language right: Because the Compositor, as I said in the Preface to this §, takes no notice of any thing therein but the very Letters, Points and Characters he finds in his Copy.

If an Author have not (through haste in Writing) made Breaks in proper places; when he comes to peruse his Copy he may find cause to make several Breaks where he made none: In such a case he makes a Crotchet [thus, at the Word he would have begin his new Paragraph.

Thus in all particulars he takes care to deliver his Copy perfect: For then he may expect to have his Book perfectly Printed. For by no means he ought to hope to mend it in the Proof, the Compositor not being obliged to it: And it cannot reasonably be expected he should be so good NATURED to take so much pains to mend such Alterations as the second Dictates of an Author may make, unless he be very well paid for it over and above what he agreed for with the Master-Printer.

The next *Exercises* (God willing) shall be
the

the *Press-mans* Trade, The Office of the *Ware-house-keeper*, The *Customs* of the *Chapel*, And a *Dictionary* to explain the hard Words and Phrases uſed in the whole Practice of *Typography*: Which will be the Conclusion of this Second Volume.

A D V E R T I S E M E N T.

There is now coming forth a small Book, intituled *Enneades Arithmeticæ*; the Numbring Nines, or *Pythagoras* his Table, extended to all Whole Numbers under 10000. And the Numbring Rods of the Right Honourable *John Lord Nepeer*, enlarged with 9999 Fixt Columns or Rods, of Single, Double, Triple and Quadruple Figures, and with a new ſort of Double and Movable Rods, for the much more ſure, plain and eaſie performance of Multipli- cation, Diuiſion, and Extraction of Roots. The whole being very uſeful for moſt Persons, of what- ſoever Calling and Employment, in all Arts and Sciences: All having frequent Occasions of Ac- compts, Numbring, Meaſuring, Surveying, Gau- ging, Weighing, Demonstrating, &c. The Divine Wiſdom having from the Beginning *Disposed all things in Measure, Number and Weight*, Sap. 11. 21.

Printed for *Joseph Moxon*, at the Sign of *Atlas* in *Ludgate-street*. Where also theſe Numbring Rods, (commonly call'd *Napier's Bones*) are made and fold.

MECHANICK EXERCISES:

Or, The Doctrine of

Handy=works.

Applied to the

Press=mans Trade.

P R E F A C E.

TH E Printing-Prefs that a Press-man works at, is a Machine invented upon mature consideration of Mechanick Powers, deduced from Geometrick Principles; and therefore a Press-man indowèd with a competency of the Inventers Genius, will not only find great satisfaction in the contemplation of the harmonious design and Make of a Press, but as often as any Member, or part of it is out of order, he will know how to remedy any deficiency in it. This alone

alone will intitle him to be an Understanding Press-man: But his care and serious industry in the Physical and Manual performance of his Task, must give him the Reputation of a good and curious Work-man.

§. 24. ¶. 1. *Of the Press-mans Trade.*

A N understanding *Press-man* therefore knows not only how to direct a Printers Joyner to Set up and Fasten a *Press* when it is made, but also how to give a strange Joyner and Smith instructions how to make a *Press*, and all its parts, in a Symetrical proportion to any unwonted size, if in a strange place he shall have occasion to use it.

I have already at large insisted upon the dimensions of every particular Member of an ordinary siz'd *Press* in § 10, 11. But in those Sections did omit shewing you how the *Press* is Set up and Fastened; yet promised to do it when I came to the *Press-mans* Trade: It being not only a care incumbent upon him, but a Curiosity he would assume to himself to direct and see the Joyner set and fasten it in a Steddy and practical position. We will suppose a strange Joyner, and not a Printers Joyner (as here in *London* he may be furnish't with) who generally by their constant conversation in Printers work, do or ought to know as much of Setting up a *Press* as the *Press-man* himself.

The Joyner therefore having set together the Frame, *viz.* the *Cheeks, Feet, Cap, Head, Till, Winter, Hind-Posts, Ribs, Carriage, &c.* The *Press-man* directs, and sees him perform as follows by and by.

by. For I should have told you that before the *Head* is put into its place, the *Press-man* besmears the whole Tennanted ends and Tennants well with Soap or Grease, and also the Mortesfes the *Head* slides in, and so much of the *Cheeks* as the ends of the *Head* work against, that the *Head* may the easier work up and down.

He also before the *Carriage* is laid on the *Ribs*, besmears the two edges of the *Plank* and the under side of the *Coffin* well with Soap or Grease; and the like he does by the inside of the *Wooden Ribs*, that they may slide the easier beside each other.

Now to return to the Joyner. The *Press-man*, I say, directs and fees him perform as follows.

1. To place the *Feet* upon an Horizontal Level Floor, as I shewed in the First Volume, Numb. 7. § 7. when I spoke of the Level that Carpenters use.

2. To erect the *Cheeks* perpendicularly upright, as I shewed Vol. 1. Numb. 7. § 8. when I treated of the *Plumb-line*.

3. To place the *Stays* or *Braces* so as the *Press* may be kept in the most Steddy and Stable position, as well to give a check to the force of the hardest *Pull* he makes, as to the hardest Knock the *Bar* shall make against the farther *Cheek*, if by chance (as sometimes it does) it slip out of the *Press-mans* Hand.

This consideration may direct him to place one *Brace* against the end of the *Cap* that hangs over the hither *Cheek*, and in a range parallel with the fore and hind side of the *Cap*: For the more a *Brace* stands

stands aslope to the two parallel sides, the less it resists a force offered to the end of them, *viz.* the hither end of the *Cap*, which is one main *Stay* to the whole *Press*.

If he place another *Brace* against the hinder corner of the farther end of the *Cap*, it will resist the *Spring* of the *Bar*, if it slip out of the *Press-mans* Hand.

And if he places two other *Braces*, one against the hither corner of the hind-side of the *Cap*, and the other against the farther corner of the fore-side of the *Cap*, the *Pres's* will be sufficiently *Braced-up*, if the Room will afford convenience to place the farther end of the *Braces* against.

By convenience I mean a firm solidity to place the end of the *Braces* against, be it either a Stone-wall, Brick-wall, or some principal Post, or a Girder, &c. that will not start or tremble at the force of a *Pull*.

The *Braces* ought to be straight, and of Substance strong enough proportionable to their Length: And if convenience will allow it to be fixed in such a position that they stand in the same straight Line with the upper Surface of the *Cap*, *viz.* that the farther end of the *Brace* neither dips lower or mounts higher than the upper side of the *Cap*. Neither ought the *Brace*, though thus posited, to stand aslope or askew, *viz.* make unequal angles with the side of the *Cap* it is fastned to, but it ought to stand Square, and make right angles with the respective side of the *Cap*; because in those Positions the *Braces* best resists the force of continued *Pulls*.

But

But though this be by the Rules of Architecture, the strongest, firmest, and most concise method for *Bracing-up a Press*, yet will not the Room the *Press* is to stand in always admit of convenience to place the *Braces* thus: Therefore the *Press-man* ought to consider the conveniences of the Room, both for the places to fit the *Braces* to, and the positions to set the *Braces* in; placing his *Braces* as correspondent as he can to these Rules.

If he doubt the crazy make of the *Winter*, he will cause two *Battens* of three or four Inches broad, and a full Inch thick, to be nailed close to the outer sides of the Feet of the *Press*, which will both strengthen the *Winter*, and keep the lower part of the *Cheeks* from flying out, and also hinder the *Press* from working into a twisting Position.

And though I am loath to name the *Under-laying* of the *Feet*, because at the best it is but a *Botch*, and Subjects the whole *Press* to an unstable position yet because by accident it may happen, the aforesaid *Battens* will also keep these Underlays from working out.

Joyners that Work to Printers have got a Custom to place a strong Piece of Timber between the middle of the *Cap* and the Ceiling or Roof of the Room, which can do no service there, unless they intend to support the Roof: For the weight of the *Press* alone will keep it close to the Floor, and the strength of Stuff between the Mortesses in the *Cheeks* and the ends of them, are intended to be made strong enough to resist the Rising of the *Head*: For should that strength of Stuff start, neither their strong Piece of Timber,

Timber, nor the strength of the Roof, would resist the Rising of the *Head*: but *Head* and *Cap*, and Timber and Roof too, would all start together, as by experience I have seen. For indeed the strength of Stuff between the Mortesfes that the Tennants of the *Head* works in, and the upper ends of the *Cheeks*, and the Strength of Stuff between the Mortesfes that the Tennants of the *Winter* lyes in, and the lower ends of the *Cheeks* resist the whole strength of the working of the *Spindle* out of its *Nut*. So that the *Cap* suffers no pressure upwards or the *Feet* downwards, unless the force of the *Spindle* break the strength of Stuff between the *Head* and the upper ends of the *Cheeks*, or the strength of Stuff between the *Winter* and the lower ends of the *Cheeks*.

The *Press* being thus far fastned, the *Carriage* is laid on; and if the Joyner performed his Work well in making the Wooden-work, it will at first lye exactly Horizontal; if not, it must be mended where it is amiss before the *Press-man* can *Lay* the *Stone*; and before the *Stay* of the *Carriage* can be fitted under the end of the *Ribs*.

¶ 2. Of Laying or Bedding the Stone.

We will suppose the Wooden *Ribs* to lye on the *Winter* exactly, flat and Horizontal, therefore the *Press-man* now *Lays* the *Stone*: If the *Stone* be a good thick Marble *Stone*, and all the way of an equal thickness between the *Face* and the *Bottom*, he may *Bed* or *Lay* it upon so many large *Sheets* of Brown Paper as will raise the *Face* about a *Brevier*

vier above the Superficies of the *Coffin*, and the *Stone* will do good service.

Or he may *Bed* or *Lay* it on *Bran*; which indeed the *Press-man* most commonly does, if the *Stone* be qualified as aforesaid.

The manner how he lays it on *Bran* is thus,

He grasps an handful of *Bran* and lays it down at the hither corner of the *Coffin* on his Left Hand, and it will form it self into a small *Hillock*; then he takes another handful of *Bran*, and lays that down in the same manner near the first, towards the further side, and so a third, &c. towards the further side, till he have filled the whole breadth of the *Coffin*. Then he in like manner lays another row of *Hillocks*, beginning at the hither side of the *Coffin*; and so a third and fourth row, &c. till the length of the *Coffin* is filled as well as the breadth: Then with a *Riglet* he drives the tops of these *Hillocks* into the Valleys between them, to spread the *Bran* into an equal thicknes in the whole *Coffin*. Which done, he lays the *Stone* upon it.

But in this case he considers to lay so much *Bran* thus into the *Coffin* as may make the *Face* of the *Stone* rise about a *Great Primer* higher than the Superficies of the *Coffin*: For else he must take all his *Bran* out again, and new-lay his *Hillocks*, making them bigger or less, till he have fitted the *Face* of the *Stone*, to lye about a *Great Primer*, as aforesaid, higher than the Superficies of the *Coffin*.

But if it be a thin *Stone*, or a *Purbeck* or *Portland Stone*, it is great odds if it be thus *Laid*, but it breaks with the first *Pull*: Therefore these *Stones* are

are generally *Laid* or *Bedded* with Plaister of *Paris*, which before it hardens, will of it self run into an Horizontal position.

This Plaister of *Paris* is tempered with fair Water to the consistence of Batter for Pancakes, or somewhat thicker, and such a quantity is put into the *Coffin* as may raise the *Face* of the *Stone* about a Scaboard higher than the Superficies of the *Coffin*.

The different matter the *Stone* is *Laid* on is the reason why the *Face* is *Laid* of different heights above the Superficies of the *Coffin*: For by the force of a *Pull* about a dozen Sheets of Brown Paper may be squeez'd closer by a *Brevier Body*, which brings the *Face* of the *Stone* into the same Level with the Superficies of the *Coffin*. And Bran squeezes much more. But Plaister of *Paris* not at all.

When he *Lays* the *Stone* on Bran, or on Plaister of *Paris*, he and his Companions slings the *Stone* in two strong Packthreds, placing one towards either end of the *Stone*; and each of them taking an end of each String in each of their Hands, with the *Face* of the *Stone* upwards, and brought as near as they can into an Horizontal Position, they with great care and caution let it into the *Coffin*, and as near as they can, so as the whole bottom of the *Stone* touch the *Bedding* all at once; lest by raking the *Bedding* with any part of the bottom of the *Stone* first, the Horizontal form of the *Bedding* be broken.

Having laid the *Stone* down, they draw the Packthred from under it: And by squeezing a little Water out of a Spunge upon about the middle of the *Face* of

of the *Stone*, try whether the *Stone* lye truly Horizontal, which they know by the standing of the Water: For if the Water de late it self equally about the middle of the *Stone*, the *Stone* lies Horizontal: But if it have a propensitude to one fide more than another, the declivety is on that fide, and the *Stone* must be new *Laid*.

Having laid it Horizontal, they *Justifie* it up with the *Justifiers* I mentioned in § 11. ¶ 17.

¶ 3. *Of Setting the Rounce.*

The *Rounce* being well *Set* does not only ease a *Press-man* in his Labour, but contributes much to Riddance in a train of Work.

In the old-fashioned *Presses* used here in *England*, the *Press-man* finds often great trouble and losf of Time in *Setting the Rounce*: Because the *Girts* being nailed to the *Carriage-board* behind, and to the Frame of the *Coffin* before, he cannot alter the position of the *Rounce* without un-nailing and nailing the *Girts* again, both before and behind. Nay, and sometimes though he thinks he has been very careful in *Winding* the *Girts* off or on the *Barrel* of the *Rounce*, as he finds occasion requires; Yet by straining either of the *Girts* too hard, or not hard enough, or by an accidental slip of either of the *Girts*, or by stirring the *Rounce* out of a Set position, when he thinks he has *Set* the *Rounce*, he has it to do again. Besides, The *Carriage-board*, *Frame* of the *Coffin*, and the *Rounce-barrel*, all suffer tearing to pieces by often drawing out and driving in o Nails.

But

But in these new-fashioned *Presses* all these inconveniences are avoided, for the *Press-man*, without nailing or un-nailing, *Sets* the *Rounce* to what Position he will, only by lifting up the Iron *Clicker* that stops the wheel: For then *Winding* off so much *Girt*, and *Winding* up so much *Girt* at the opposite end of the *Carriage*, his *Rounce* is *Set*, without hope or Hazzard.

He *Sets* the *Rounce* to such a position, that when the fore-end of the *Tympan* will just lye down and rise free, without touching the fore-edge of the *Plattin*, then a line drawn or imagined from the Axis of the *Handle* of the *Rounce*, to a Perpedicular or *Plumb-line*, let fall from the Axis of the *Spindle* of the *Rounce*, these two lines shall make an angle of about 45 degrees, which is half the Elevation between an Horizontal line, or Line of Level, and a Perpendiculer, or *Plumb-line*.

¶ 4. Of Hanging the Plattin.

When the *Press-man* *Hangs* the *Plattin*, he lays a *Form* upon the *Press*, and about a Quire of Paper doubled upon it (this Quire of *Paper* thus doubled is called the *Cards*) then layes the *Plattin* upon the *Cards*, and so *Runs* the *Carriage* and *Plattin* in, till the middle of the *Plattin* lye just under the *Toe* of the *Spindle*: Then he puts the *Pan* of the *Plattin* in its place, and in part *Justifies* the *Head*, as shall be shewed in the next ¶. And he un-screws the *Hose-screws*, till the Squares at the ends of the *Hose* come down to about a quarter of an Inch of the Square of the

the Socket they are fitted into in the ends of the *Garter*, and when the *Toe* of the *Spindle* is fitted into the *Nut* in the *Pan* of the *Plattin*, he examines by straining a Pack-thred against the two foresides of the *Cheeks* of the *Pres*, whether the fore-edge of the *Plattin* is set in a parallel Range with the fore-sides of the *Cheeks*: If it be not, he twists the ends till the edge of the *Plattin* stands parallel with the Pack-thred, and consequently with the *Cheeks*.

Then with the *Bar* he *Pulls* the *Spindle* hard down upon the *Plattin*, and Sets the edges of a *Paper-board* between the *Bar* and the farther *Cheek* of the *Pres*, to keep the *Bar* from starting back.

And having provided fine Whip-cord, he knots a Noose on one end and puts it over one of the *Hooks* of the *Plattin*, lashing the Whip-cord also upon the farthermost *Notch* of the *Hose-hook*, and again upon the *Plattin-hook*, and again upon the *Hose-hook*, and again upon the *Plattin-hook*: So that here is now three Lashes of whip-cord upon the *Plattin-hook*, and upon the farthermost *Notch* of the *Hose-hook*. Wherefore he Lashes his fourth Lashing of whip-cord now upon the second *Notch*, viz. the middlemost *Notch* of the *Hose-hook*, reiterating these Lashes on the middlemost *Notch* and *Plattin-hook* also three times. And thus in like manner Lashes also three Lashes upon the third and last *Notch* of the *Hose-hook* and also of the *Plattin-hook*, observing to draw every Lashing of an equal strength.

Then he begins to whip about these Lashings to draw them close together: He begins, I say, at at the bottom of the Lashings, viz. close above the *Plattin-*

Plattin-hook, and draws his whippings very tight and hard, and contiguous above one another, till he have whipt so near the top of the Lashings, *viz.* near the *Hose-hooks* that he finds the Lashings (which now spread wide asunder because the *Notches* of the *Hose-hooks* stands far asunder) will yield no longer to his whiping and pulling: So that now he fastens his whip-cord with two or three hard knots, and cuts it from the Coyl.

In like manner he begins at the opposite diagonal corner of the *Plattin*, and lashes and whips that: And also the two other corners of the *Plattin* as he did the first, carefully observing to draw all his lashings and whippings of an equal strength, lest any corner of the *Plattin* either mount or dip.

If he finds he strained the whip-cord not hard enough; or (when he is in his train of work) that the *Plattin-cords* with long working work loose; or that the *Toe* of the *Spindle* and the *Nut* it works in, have worn one another; he by turning the *Screws* at the upper ends of the *Hose*, draws up the *Nut* of the *Plattin* closer to the *Toe* of the *Spindle*, and by consequence strains the *Plattin-cords* tighter up; which is also a great convenience in these new-fashioned *Presses*: For, for any of these aforesaid accidents the *Press-man* that works at our *English-Presses* must new *Hang* his *Plattin*: When (as aforesaid) in these new *Presses* he only turns about a *Screw*.

¶ 5. Of

¶ 5. *Of Justifying the Head.*

Justifying the Head is to put into the MortesSES in the Cheeks between the upper sides of the Tennants of the Head, and the upper sides of the MortesSES in the Cheeks, an equal and convenient thickness of (either) square pieces of Felt, Pastboards, or Scabboards (some or all of them) that when the *Press-man Pulls*, the Tennants of the Head shall have an equal Horizontal level Check.

In *Justifying the Head*, the *Pull* is to be made *Longer* or *Shorter*.

If the *Press-man* be tall and strong and his work be *Light*, that is, a small *Form* and great *Letter*, which needs not so strong a *Pull* as a Large *Form* and small *Letter*, he covets to have a *Short-pull*; that is, that the *Spindle* shall give an *Impression* by that time the *Bar* comes but about half way to the hither *Cheek* (in Printers Language *Down*.)

But if the *Press-man* be low, and not very strong, he will require a *Longer Pull*, especially if the work be *Heavy*, viz. a Large *Form* and small *Letter*: Because the heighth of the *Bar* is generally made to lye at the command of a reasonable Tall man, and therefore a Low man cannot Pull the Handle of the *Bar* at so great a force at Arms-end as a Tall man; but will require the swinging of his whole Body backwards to add force to the *Pull*: So that if the *Pull* be not *Longer*, he cannot fall enough backwards to get the *Handle* of the *Bar* within his command and force. And therefore a Low man and *Heavy Work* requires a long and *Soaking Pull*. A

A long or a *Soaking* or *Eafe Pull*, is when the *Form* feels the force of the *Spindle* by degrees, till the *Bar* comes almost to the hither *Cheek* of the *Press*, and this is also call'd a *Soft Pull*; because it comes Soft and Soakingly and easily down: And for the contrary reason the *Short Pull* is call'd an *Hard Pull*, because it is suddenly perform'd.

That which makes a *Hard Pull*, is putting into the Mortesfes in the *Cheeks* solid Blocks of Wood, which will scarce Squeeze by the Strength of a *Pull*: And that which caufes a *Soft Pull* is putting in pieces of Felt or Pastboard (as aforesaid) which being Soft will Squeeze and retain their Spring for a con-fiderable time, yet will at length grow hard with Working, and then the *Pull* grows *Longer*; which the *Press-man* mends, by putting in another Felt or Pastboard into each Mortef.

The *Head* cannot be conveniently and well *Justifi-fied* soon after the laying of the *Stone*, if it be *Laid* on Bran, because though the Force of the *Spindle* will at the immediate time of the *Pull* Squeeze the Bran in the *Coffin* close, yet so soon as the force of the *Spindle* is off the Bran, all its dry parts, by their several irregular positions, will like so many Springs, at the same moment of time endeavour to recover their Natural tendency, and heaves the *Stone* up-wards again: So that generally for a day or two Working the *Stone* will not lye Solid, though at length through the often and constant Squeezing the Bran it will. But if the *Stone* be *Laid* on Brown Paper, or Plaister of Paris, it quickly finds a Solid Foundation.

When the *Press-man* *Justifies* the *Head*, he un-screws

screws the *Female Screws* of the *Head Screws*, that the weight of the *Head* may draw it down, to make room to put the *Justifyers* into the *Mortesfes* in the *Cheeks*; and when he has put in so many as he thinks convenient, he *Screws* up the *Head* again as hard as he can. Then lays the *Cards* on the *Form*, on the *Press*, and *Runs in the Carriage* under the *Plattin*, and *Pulls* hard upon it, while his *Companion* *Screws* up the *Head* as hard and tight as he can, that the *Carriage*, *Tympan*, &c. may *Run* the freelier under the *Plattin*.

¶ 6. *Of Oyling the Iron Work of the Press.*

The *Ribs*, the *Tympan Joynts*, the *Frisket Joynts*, the *Garters*, both ends of the *Rounce-Spindle*, the *Nut* and *Spindle*, and the *Toe* of the *Spindle*, are all to be well *Oyl'd*; that they may all perform their several offices the easier, lightlier and nimbler; both *Upper* and *Under hand*.

All but the *Nut* and *Spindle*, and *Toe* of the *Spindle*, are *Oyl'd* with a *Feather* dipt in a spoonful, or little *Pot*, or *Oyster-shell*, &c. of *Sallad Oyl*; and that feather dabb'd upon so much of the *Ribs* as he can come at, at either end of the *Press*: For then by *Running* the *Carriage* three or four times quick *Out* and *In*, it desperses the *Oyl* equally the whole length of the *Ribs*, and at the same time *Oyls* the *Cramp-Irons*.

And for *Oyling* the *Joynts*, he commonly takes out the *Pins* and *Oyls* them, and puts them in again; and with the edge of a *Feather* dabs a little

little Oyl between the Crevices of the *Joynts*.

He thrusts the Feather in between the *Spindle* of the *Rounce* and its *Collers*.

To Oyl the *Nut* and *Spindle*, he pours a good quantity of Oyl in at the *Hole* in the *Head*, and with a Cork stops the hole again to keep out dust and filth: Then drawing the *Bar* quick to and fro about half a score times, he works the Oyl equally about the *Nut* and *Spindle*.

To Oyl the *Toe* of the *Spindle*, he pours about a Spoonful of Oyl into the *Plattin-pan*.

¶ 7. Of Making Register, and Making Ready a Form.

A curious *Press-man* will take care that against the *Compositor* brings a *Form* to the *Press* his *Press-stone* be wip'd very clean; for if any (though small) hard extuberant matter lye on it, the *Letter* that lyes on that extuberant matter will, with *Pulling*, quickly *Rise*, and not only Print harder than the rest of the *Form*, but bear the force of the *Plattin* off of the *Letters* adjacent to it. And therefore many times a *Press-man* will receive the *Form* from the *Compositor* when he has only Set the *Form* on the side of its *Chase* upon the *Press-stone*, that he may be the Surer the *Face* of the *Stone* is clean when he layes the *Form* down; as also that he may carefully examine that the backside of the *Form* is clean before he goes about to make *Register*, or otherwise make ready his *Form*.

Making Register is to *Quoin* up a *Form* and otherwise alter *Whites* (if need be) between the *Croffes* and *Pages*: So as that when a second *Form* of the same

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Volumne, Measure and Whites, is plac'd in the same position, all the Sides of each *Page* shall fall exactly upon all the Sides of the *Pages* of the first *Form*.

The first process a *Press-man* makes towards this Operation, is the chufing and placing of his *Points*: For to large Paper he chuses *Short Shanked Points*, and to small Paper *Long Shanked Points*, and proportionable to intermediate sizes of Paper: For his *Points* ought to be placed so as that when he is in his Train of work, they prick the *Point-holes* within the grasp of the hollow between his hand, Thumb, and Fore-finger; because when he shall Work the *Reteration* he may the better manage and Command the sheet he lays on the *Tympan* and *Points*.

Nor will he place his *Points* too near the edge of the *Paper*, because when he Works the *Reteration*, he would be forc'd to carry his furthermost *Point-hole* the further from him, which in a long train of Work loses Time: For the *Laying Sheets* quickly on their *Point-holes* adds much to riddance. So also the less distance between the further and hither *Point-hole* makes more riddance than if they are far distant; because he must draw his Body so much the further back to place that *Hole* on its *Point*. Therefore he places the hither *Point* farther into the *Paper* than the farther *Point*, if it be *Folio*, *Quarto* or *Octavo*, but to *Twelves* equally distant from both edges of the *Paper*.

By placing the *Points* unequally from the edges of the *Paper*, as in *Folio's*, *Quarto's* and *Octavo's* (as aforesaid) he also secures himself the more from a *Turn'd Heap* when he works the *Reteration*; because

cause without very much altering the *Quoins*, he shall not be able to make *Register*: And *Press-men* (especially if they Work upon the same sort of Work) seldom or never remove the *Quoins* on the further side the *Carriage*, nor on the right hand end of the *Carriage*, but let them lye as gages for the next *Form*: For thrusting the *Chase* close against these *Quoins*, the *Register* is almost (if not quite) made: The *Compositor* having before, according to his Task, chosen the *Chases* exactly of an equal size, and made strait and equal *Whites* between the *Croffes*, &c.

Having chosen his *Points*, he places them so that they may both stand in a straight line parallel with the top and bottom sides of the *Tympan*; which to know, he strains a Packthred cross the whole *Tympan*, laying it at once upon the middle of the *Heads* of both the *Point-Screws*, (for we will suppose the Joyner hath made the Mortesses into which the *Point Screws* are Let, parrallel with both the ends of the *Tympan*) then if both the *Points* stand in that straight line they are parrallel, if not, he moves one or both of them upwards or downwards till they do, and then *Screws* them fast.

Then he layes the *Tympan* down upon the *Form*, holding the *Frisket-end* of it in his Left-hand, about an Inch or an Inch and a half above the *Face* of the *Letter*, and Sinks his Body downwards till he can see between the *Form* and *Tympan*, and with the Ball of the middle finger of his Right-hand preffes a little gently upon the *Tympan* just over the *Point-ends* of each *Point* successively, to see if the *Points* fall in or near the middle of the *Slits* in the *Short-*

Short-Cross. If they fall exactly in the middle of those *Slits*, the *Form* lies right between the middle of both the ends: If they fall not exactly in the middle of both these *Slits*, he moves the *Form* between the ends of the *Carriage*, till they do, and then *Quoins* up the two ends of the *Chase*.

Then laying the *Tympan* flat down upon the *Form*, he layes the *Blankets* in it: (They are call'd the *Blankets* though generally it is but one *Blanket* doubled:) Then he puts the *Iron-Pins*, fastned through the hither side of the Inner *Tympan* into the Holes made through the hither side of the outer *Tympan* for Gages: And turning about the Tongues of the *Iron-Buttons*, that are fitted into the outer Side of the outer *Tympan* over the upper Side of the Inner-*Tympan*, he *Screws* the *Button* fast down. He also *Screws* down the *Iron-Button* at the end of the *Tympan*. These *Buttons* thus *Screwed* down are to keep the *Inner-Tympan* fast in, that it Spring not upwards.

Then he Folds a sheet of the Paper he is to Work long-ways, and broad-ways, and lays the long Crease of it upon the middle of the *Long-Cross*; and the Short Crease over the middle of the *Gutters* of the *Short-Cross*, if the *Short-Cross* lye in the middle of the *Form*, (for in *Twelves* it does not, but then he gueffes at the middle;) then wetting his *Tympan* (as shall in proper place be shewed) he turns it down upon the Paper, and *Running in the Carriage*, *Pulls* that Sheet, which with the force of the *Pull* now the *Tympan* is wet, will stick to the *Tympan*; and turning up the *Tympan* again sees how well the Sheet was laid; that is, how even it was Laid: For if

if it was laid even on the *Form*, the *Margin* about the out sides of all the outer *Pages* will be equal; But if the Sheet be not laid even, he lifts it up Side by Side till he have loosen'd it from the *Tympan*, and removes it by his discretion till it be laid even: And then *Pulls* again upon it to fasten it to the *Tympan*. This Sheet is call'd the *Tympan-sheet*.

Then he lays another Sheet even upon the *Tympan-sheet*, for a Register Sheet, and a Waste Sheet over that to keep it clean from any filth the *Face* of the *Letter* may have contracted and imprint upon it, and *Pulls* these two Sheets. Then he *Runs out* the *Carriage*, and takes up the *Tympan*, and takes off the two Sheets, laying the waste Sheet by: But turns the other Side of the *Register-Sheet* the proper way his Volumne requires, *viz.* end-ways if it be *Octavo* or *Folio*; or Side-ways if *Twelves* or *Quarto*, &c. as at large you see in the Section of *Imposing*. And laying the *Point-holes* in the *Register-Sheet* over the *Points*, lays his waste Sheet on again, *Runs-in* the *Carriage*, and *Pulls* upon that the Second side of the *Register-sheet*, to try how well the Impression of the Sides of all the *Pages* agree, and lye upon the Impression in the first *Pull'd* Side. If he finds they agree perfectly well, *Register* is made. But if the Impression of the last *Pull'd* Side of the *Register-sheet* stand be-hither the Impression of the first *Pull'd* side, either the whole length of the Sheet or part, he observes how much it stands be-hither: If the thickness of a *Scaboard*, a *Nomparell*, a *Long-Primmer*, &c. he loosens the *Quoin* or *Quoins* on the farther side of the *Carriage*, and opens one or both of them, *viz.* removes

moves them backwards till they stand a *Scaboard*, a *Nomparell*, a *Long Primmer*, &c. off the sides of their respective Corners: Then *Knocks* up one or both the opposite *Quoins*, till he have removed the *Chase*, and the *Chase* by consequence has forc'd the opened *Quoin* or *Quoins* close against their Corners. Or if the Impression of the last *Pulled Side*, stands within the Impression of the first *Pulled Side*; he observes how much also; and Loosning the hither *Quoin* or *Quoins*, and *Knocking up* the opposite as before, makes *Register*, for the Sides of the Sheet.

Then he observes how the *Register* of the *Head* and *Foot* agrees. And if he finds it agrees on both sides the *Short Crosses*, he has good *Register*; supposing the *Compositor* has performed his Office, viz. made all his *Pages* of an equal Length, &c.

If the Impression of the Last *Pulled Sheet*, lye without the Impression of the first *Pulled Sheet*, towards the upper or lower end of the *Tympan*, he opens the *Quoins* at the respective end, and *Knocks-up* the opposite till he have made *Register*: Which to try he *Pulls* another clean *Register-sheet* as before. And if he finds *Register* agree on all the Sides of the *Form* the Task is performed: If not, he mends as aforesaid till it do.

But it sometimes happens that the *Compositor* has not made an exact equal *White* between all the sides of the *Crosses*: In this case, altering the *Quoins* will not make good *Register*; wherefore the *Press-man* observes which side has too much or too little *White*; and unlocking the *Form* takes out or puts in such a number of *Scabboards* as he thinks will make good
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Register: which he tries by *Pulling* a Sheet, and if need be, mending as before, till he have *Pull'd* a Sheet with good *Register*.

Although the *Press-man* have made *Register*, yet he must further *Make Ready* the *Form* before he can go to Work upon it. Under this phrase of *Making Ready the Form* is comprehended many Considerations, leading to several various Operations; For first, The *Frisket* must be *Cut*: which to perform, the *Press-man* fits the *Match-Joynts* of the *Frisket* into the *Match-Joynts* of the *Tympan*, and pins them in with the *Frisket-pins*: And having *Beaten* the *Form*, turns down the *Frisket* and *Tympan* on the *Form*. And having also Rubbed the *Blankets* to soften them, lays them smooth and even in the *Outer-Tympan*, and *Pins* the *Inner Tympan* in upon them, as was shewed in the beginning of this ¶, and *Pulls* as before, and as shall farther be shewed in ¶ 15. upon the bare *Frisket*.

Then he *Runs out* the *Carriage*, and takes up the *Tympan* and *Frisket* together off the *Form* and lays them on the *Gallows*; Then takes the *Frisket-pins* out again, and takes off the *Frisket*: And laying it flat on a *Paper-board*, with the point of a Pen-knife cuts through the *Frisket* about all the Sides of each *Page*, allowing to each *Page* he thus cuts out of the *Frisket* about a *Nomparil Margin* on all the sides of the cut *Pages*: Then he puts and pins his *Frisket* again on the *Tympan*, as before.

2dly, He takes care that the *Tympan* be well *Wet*; which he does by squeezing Water out of a *Sponge* on the backside of it, till it be well Wet all over, and well soak'd and limber.

3dly,

3dly, That the *Form* be well and fast *Lock'd up.*

4thly, That no *Letters* or *Spaces* lye in the *White-lines* of the *Form*; which may happen if the *Compositor* have *Corrected* any thing since the *Form* was laid on the *Press*, and the *Compositor* through oversight pickt them not all up.

5thly, If any *Wooden Letters* or other *Cuts* be in the *Form*, that they be exactly *Letter-high*: If not, (for it seldom happens they are) he must make them so; If they are too *Low*, (as they generally be) he *Under-lays* them: But first He examines how much they are too *Low*, by laying one Card or one Scaboard or two Scabboards, or a Scaboard and a Card, &c. upon the Face of the *Wooden Cut*, and gently feeling with the Balls of the Fingers of his right Hand if the intended *Under-lay*, viz. the Scaboard, Card, &c. lye exactly even with the *Face* of the *Letter*, If it do not, he tries thicker or thinner *Under-lays* till he have evened the *Under-lay* with the *Face* of the *Letter*: For then the Balls of his Fingers will go smoothly and equally over the *Under-lay* and the *Face* of the *Letter*, as if they were one and the same Superficies.

Having evened his *Under-lay*, he *Unlocks* that *Quarter* it is in, and takes the *Wooden Cut* out of the *Form*, and cutting a Scaboard or Card or what it wants a little smaller than the bottom of his *Wooden Cut*, he lays it into the place he took the *Wooden Cut* out of, or else he Pasts the *Under-lay* on the bottom of the *Wooden Cut*, and puts the *Wooden Cut* into its place again upon the *Under-lay*. But yet he trusts not to his Judgment altogether for the thickness

ness of the *Underlay*: But *Locking up the Form* again, *Pulls* the *Cards* upon it to sink it as low as it will go, and *Beats* and *Pulls* a Sheet to see how it pleases him. If it be too low, which he finds by the Pale Printing of it, he *Underlays* it a little more, and again trys by Printing till it pleases him. But by no means he lets the *Cut* stand too high, though but a small matter, For then it will Print too *Hard* and too *Black*, and deface the beauty and fairnes of the *Cut*; So that it may better stand about half a Card too low, than in the least too high.

If the *Wooden Cut* be too high, he causes a Joyner to Plain off some at the bottom.

6thly, If a *White Page* or *Pages* happen in a *Form*, and he uses a *New-drawn Frisket*, then he does not *Cut out* that *Page*: But if he Work with an *Old Frisket*, and that *Page* is already *Cut out*, he *Sews*, or sometimes *Pastes* on a Scaboard, if the *Page* be not too broad, or a strong Pasteboard to the *Sides* and *Croffes*, to cover the *White-page* in the *Form*, that it Print not Black.

If the sides of the *Pages* adjacent to the *White-page* Print *Hard*, as most commonly they do, because the *White-page* is generally lower than *Letter* high, so that the force of the *Spindle* squeezes the yielding *Paper*, *Tympan* and *Blankets* below the Plain of the *Face of the Letter*; and besides the force of the *Spindle* falling upon the center of the *Plattin*, and the Plain of the *Plattin* not finding resistance to entertain it equally, presses lower down upon the low *White-page*, than upon the *Face of the Letter*; so that the *Press-man* either *Underlays* the *White-page*,

page, as he does *Wooden Cuts*, or else he fits a *Bearer* on the *Frisket*.

The *Bearer* is a *Riglet* of a convenient thickness: and this convenient thickness the *Press-man* finds as I shewed you how he found the thickness of his *Underlays* for *Wooden Cuts*; only with this difference, that as then he made his *Wooden Cut* exactly *Letter-high*, so now he maks his *Bearer* and the *Furniture* his *Bearer* bears on *Letter-high*: Wherefore he Pasts one side of his *Bearer*, and lays it as he would have it on the *Furniture*, with the Pasted side upwards; and laying his *Tympa*n and *Frisket* down upon the *Form*, with his Fingers preses on the outside the *Inner-Tympa*n *Frisket* and all, upon the place where the *Beares* lies; So that with the Paste the *Bearer* sticks to the side of the *Frisket*, which he takes up again: and if he thinks the Paste not strong enough to hold it till the *Form* is wrought off, he sews it to the *Frisket* by pricking his Needle on both sides the *Bearer*, and lashing the Thred over it so often till he thinks it fast enough sew'd on.

7thly, He examines whether the *Frisket Bites* not: That is, whether no part of it Print upon any of the fides of any of the *Pages*: if they do he cuts away so much and about a *Nomparel* more off the *Frisket* where it *Bites*.

8thly. He examines if the *Beards* of the *Letter* Print at the Feet of the *Pages*: If they do, He considers whether the too short or too far *Running* in of the *Carriage* causes it. Or whether it be only the *Beard* of a short *Page* that Prints; If it be the *Beard* of a short *Page* that Prints, he remedies it with an
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Under-lay as I shewed he did in the *White Page*.

If the *Carriage* be *Run* in too short, and the *Feet* of the *Pages* stand towards the *Plattin*, the *Hind-side* of the *Plattin* will presf strong upon the *Feet* of those *Pages*: And if the *Carriage* be *Run* in too far, the *Feet* of the *Pages* that stand towards the hinder *Rail* of the *Tympan* will most feell the force of *Plattin*, and according to a greater or less proportion of that force, and to the softness or yielding of the *Paper*, *Tympan*, and *Blankets*, and all other *Springs* in the *Presf*, mentioned in §. 11. ¶ 1. of this *Volumne*, the *Feet* of the *Pages* and *Beard* of the *Letter* will more or less Print *Hard*.

Wherefore in this case he *Runs* the *Carriage* under the *Plattin*, till the farther Edge of the *Plattin* just cover the *Feet* of those *Pages*, and with a piece of Chalk makes a White stroke over the *Board* of the hither side of the *Carriage* behind, and the upper side of the *Rail* of the *Ribs*: Then he *Runs* in the *Carriage* again, till the Foreside of the *Plattin* just cover the *Feet* of the *Pages* next the *Hind Rail* of the *Tympan*, and makes another mark with Chalk on the *Rail* of the *Ribs* to joyn with the mark he first made on the *Board* of the *Carriage*. Then he *Runs* out the *Carriage*, and lays the *Tympan* down on the *Form*; and *Runs* in the *Carriage* again till he joyn the mark or line he made first on the *Carriage-board* and *Rail* of the *Ribs*, and makes a mark with Chalk on the farther *Rail* of the *Tympan* just range with the Fore-side of the *Plattin*. This mark on the *Tympan* shews him how far he must *Run* the *Carriage* in against the Fore-edge of the *Plattin* for the *First Pull*. Then he

Runs

Runs in the *Carriage* farther, till he joyn the same *Mark* or *Line* on the *Carriage-board* to the second *Mark* he made on the *Rail* of the *Ribs*, and makes another *Mark* on the further *Rail* of the *Tympan* just range with the *Fore-side* of the *Plattin*, for the *Mark* he is no *Run* the *Carriage* in to against the *Fore-edge* of the *Plattin*, for his *Second Pull*.

9thly, He Examines if the *Catch* of the *Bar* will hold the *Bar* when the *Spindle* makes a small Spring, *viz.* When the *Bar* flies but a little way back from the pressure of the *Form*: If it will not, he knocks up the *Catch* a little higher till it will, and then Screws the *Screw* on the *Shank*, and consequently the *Catch* close and firm against the *Cheek* of the *Press*.

But if the *Catch* stand too high, so that it will not without a great Spring, (*viz.* when the *Bar* is *Pull'd* hard from the farther *Cheek*) fly up; He then knocks upon the top of the *Catch* to sink it lower; And when it is well fitted Screws it up again, as before.

If the *Catch* of the *Bar* stand too Low, it will not hold the *Bar*; But it will *Come down* again of it self when he is in his train of Work: For if, as it often happens, he lets the *Bar* fly harder than ordinary back, or if it slip out of his Hand, it will knock hard against the *Cheek*, and Spring back again.

If the *Catch* of the *Bar* stand but a little too High, the Violence of the *Bars* flying back to make it stick on the *Catch* will soon Loosen the Square of the *Bar* in the *Eye* of the *Spindle*; and indeed subject the whole *Press* to an unstable condition.

This is another ease and convenience these New-fashioned *Presses* gives the *Press-man*: For in the Old make

make of the *Press*, when the *Catch* of the *Bar* holds too hard, or too soft, he is troubled to Raise or Sink the *Catch* with the thickness of *Scabards*, which being indevisable, does not without trouble or luck justen it to an exact Height. And besides, These *Under-lays* being but put under the *Catch* upon the *Wooden Bearer* without any Fastning, are very subject to work out by the constant disturbance the motion of the several Parts of the *Press* (when at work) gives it: Or else (which is worse) he many times is forced to batter the *Cheek* of the *Press*, with drawing and driving of Nails out and in it, to fit on another *Catch* bigger or lesser, whereas here with a softer or an harder knock of the Hammer (as aforesaid) he Raises or Sinks the *Catch*, and afterwards Screws it firmly up.

iothly, He considers whether the *Stay* of the *Frisket* stands neither too forwards or too backwards. The *Stay* may stand too forwards, though when it is leisurely turn'd up it stays the *Frisket*: Because, when the *Press-man* is in a Train of Work, though he generally throws the *Frisket* quick up with an accustomed, and as he intends, equal strength; yet if his gues at strength in throwing it up varies, and it comes (though but a little) harder up, the *Batten* fastned on the *Cap*, and the Perpendicular *Batten* fastned to the aforesaid *Batten* (as is described in §. 11. ¶ 21. of this Volumne) will by their shaking cause a Spring, which will throw the *Frisket* back again upon the *Tympan*: Nay, though (as sometimes it happens) a solid Wall serves to do the Office of a *Stay* for the *Frisket*; yet with a little too hard throwing it up, the

the *Frisket* it self will so shake and tremble (its Frame being made of thin Iron) from end to end, that e're it recover rest, its own Motion will by the quick running of a Spring through it beat it back again.

If the *Stay* stand too backward, then after he has given the *Frisket* a Touch to bring it down, it will be too long e're it come down, and so hinder his Riddance.

Therefore he places the *Stay* so, that the *Frisket* may stand but a little beyond a Perpendicular backwards, that with a near-gues'd strength in the tossing it up it may just Stand, and not come back; For then with a small Touch behind, it will again quickly come down upon the *Tympa*n.

11thly, He considers the Scituacion of the *Foot-step*, and that he places so as may best suit with his own Stature; For a Tall man may allow the *Foot-step* to stand farther off and lower than a Short, because his Legs reach farther under the *Carriage*, and can tread hard to add strength to his *Pull*; when a Short man must strain his Legs to feel the *Foot-step*, and consequently diminish the force of his *Pull*.

12thly, He fits the *Gallows*, so that the *Tympa*n may stand as much towards an upright as he can: Because it is the sooner clapt down upon the *Form* and lifted up again. But yet he will not place it so upright, but that the White Sheets of Paper he lays on it may lye securely from sliding downwards: And for *Reteration* Sheets their lying upon the *Points* secures them.

In these New-fashioned *Presses* there is no trouble to place the *Gallows*, so as it may mount the *Tympa*n to

to any Position: For sliding the *Male-duftails* made on the *Feet* of the *Gallows* through the *Female Duftails* fastned on the *Planck* of the *Carriage*, performs this great trouble that in our English *Presses* requires Unnailing the Studs of the *Gallows* and Nailing them again; and many times tearing them and the *Carriage-Planck* to pieces: And that so oft as the fancy of the *Press-man* alters, or another Work-man comes to Work at that *Press*.

13thly, Few *Press-men* will Set the range of the *Paper Bench* to stand at right angles with the *Plank* of the *Carriage*: But draws the farther end of the *Paper Bench* so as the hither side may make an Angle of about 75 Degrees (more or les) with the hither side of the *Carriage*: The reason is, if the hither side of the *Paper Bench* stand at right Angles with the hither side of the *Carriage*, he must carry his Hand farther when he *Lays out Sheets* which would hinder rid-dance: Besides his *Companion* has a nearer access to it, to look over the *Heap*; which he frequently does, to see the constant Complexion of the Work.

14thly, The *Press-man* brings his *Heap* and Sets it on the hither end of the *Paper Bench* as near the *Tympa*n as he can, yet not to touch it, lest it stop the *Tympa*n in a train of Work: and he places an end of the *Heap* towards him. Then taking off the *Paper-board* that cover'd it when it was Prest, he lays the long sides of it parallel to the sides of the *Paper Bench*: Then he takes the uppermost Sheet (which as you may Remember is a *Waste-sheet*) and lays it on the empty *Paper-board*; And taking Three or Four or Five Quires off his *Heap* in both his Hands,

he

he lifts it a pretty height above his Head, and claps it as hard as he can down upon the rest of the *Heap*, to loosen the Sheets that with Pressing stick close together: And not thinking them yet loose enough, he thrusts them long-ways and side-ways, heaving and huffing them till he think he has pretty well loosen'd or hollow'd that quantity of Paper.

Then with the nail of his Right Hand Thumb, sloaping from his Thumbward, he draws or slides forwards the upper Sheet, and two or three more commonly follows gradually with it, over the hither edge the *Heap*, to prepare those Sheets ready for him to snatch off the *Heap*.

15thly, He considers if the *Face* of the *Tympan* be moist enough, for a *Tympan-sheet* to stick to, for though he Wet the back-side of it before to supple it, yet if the *Tympan* be strong, the Water will not soak quite through to moisten the *Face*, So that he wets the Spunge in fair Water, and besprinkles the upper side or *Face* of the *Tympan* all over: And squeezing the Water that is left in the Spunge well out again, rubs it quickly and gently all over the *Face* of the *Tympan*, to drink up or lick off the body of Water that he besprinkles on, and only leaves moisture on the *Face* of the *Tympan* to hold the Sheet.

Here accrues now a benefit by the make of these New-fashioned *Presses* to the Master *Printer*: For these *Presses* having a *Gutter* fastned to the *Hind-rail* of the *Carriage* (as was described in § 10. ¶ 9. of this Volumne) to receive the Water that falls from the *Tympan*, and to convey it beyond the farther side of the *Press*, secures the *Blank* of the *Carriage* from

from Wet and moisture, and consequently from that cause of Rotting.

Then he takes a Sheet of Paper off the *Heap* for a *Tympan-sheet*, and Folds it exactly into four quarters, and lays the Creases of the Sheet exactly upon the middle of the *Short* and *Long Crosses*, if the Column of the *Form* allows them both to be in their respective middles of the *Chase*; if not, he lays the Creases exactly against the Notches in the *Chase* that are made for them respectively: And if his *Frisket* be Blackt with former Work, he lays a Sheet of Waste-Paper upon the Creast-sheet: Then lays the *Tympan* down on the *Form*, and *Pulls* on these two Sheets, and takes up his *Tympan* again, and lays by the Waste-Sheet; but the Creast-Sheet he lays on the *Tympan*. But first presses the *Tympan* downwards, from under the Shank of each *Point* successively, puts the two opposite sides of the Sheet under the *Shancks* of the *Points*, and the *Holes* the *Points* prickt with *Pulling* exactly under the bottom Revits of the *Points*: Then taking a little Paste on the Ball of one of his fingers, a little besmears the under corners of that Sheet, and claps them down close on the *Tympan*, that the Sheet may stick: But the bottom corner of that side the Sheet that is next to him, he besmears within the Matter of the Sheet, *viz.* within the Impression the *Form* made. For when he has fastned that corner down, he tears off the *Margin*, (by gues) in a straight line athwart the very corner, that it may not lye in his way to catch at as he *Takes off Sheets*, when he is in his train of Work.

This Sheet is called the *Tympan-sheet*; and is only
as

as a standing mark to lay all the other Sheets exactly even upon, while he Works upon *White-paper*.

The *Press-man* does now suppose he has *Made Ready*: Yet for assurance he will try his *Register* once more, lest some of the *Quoins* should have slipt. How he made *Register* I shewed you before, wherefore if his *Register* be not good, he mends it as I there shewed. But we will suppose it now good, wherefore he gently *Knocks* up all the *Quoins* in the corners, with an equal force to fasten them.

Though I have in Numerical order set down these Operations, Circumstances and Considerations in this ¶: yet does not the *Press-man* oblige himself to observe them in this or any other orderly succession: Because it often happens that some of these Operations may more readily be performed out of this or any other prescribed Order.

¶ 8. *Of Drawing the Tympans and Frisket.*

Drawing the Tympans or Frisket is the Covering and Pasting on of Vellom, Forrels or Parchment upon the *Frames*. To each *Tympan* and *Frisket* is chose a Skin large enough to cover and lap about the *Frames*.

These Skins the *Press-man* rumples up together, and puts them into a Pail of fair Water to soak; and if he thinks they do not soak fast enough, he takes them and rubs them between his Hands, as Women wash Cloaths, to supple them, that the Water may Soak the faster in. And being throughly Soakt he wrings the Water as well out as he can.

Then the Boy having provided a Brush and about

a

a Pint of Paste, made of fine Wheaten Flower, well boiled in fair Water to the consistency of Hasty-pudding, he spreads the Skin flat upon a Table; and first Pastes the under Side of the *Tympan*; then lays it on the middle of the Skin, and rearing each side successively up, Pastes the Skin also from the insides the *Tympan* to the outer edges of the Skin, and lays the *Tympan* down flat again: Then he Pastes all the other sides of the *Tympan*, and wraps the Skin about the two long Sides first, Cutting the Sides of the Skin away so much, till he leaves only enough to reach almost quite through the under-sides of the *Tympan* again: Then drawing and straining the Skin tighter, he drives in the points of two-penny or three-penny Nails about six Inches distant from one another, to keep the Skin from starting as it Dries.

Having thus Drawn the sides, he with the Point of a Pen-knife cuts square holes in the Skin, just where the *Iron-Joynts* fall, for the Joynts to fall into, and Draws and Strains the ends of the *Tympan* as he did the Sides; wrapping the ends of the Skin under the under-sides of the *Tympan*, and where Wood is, drives in the points of Nails, as before.

Then setting it by to dry; when it is dry, he draws the Nails.

As he Drew this *Tympan*, so he Draws the other: and the *Frisket* also: only, because he cannot drive in Nails, (the *Frisket* being all made of Iron) he doubles the Skin over the sides of the *Frisket*, and being well Pasted, as aforesaid; he Sews the sides that Lap over down upon the whole Skin, to keep it from starting while it dries: And he Pastes a Sheet
or

Plate 29.



or two Thick of Paper all over the inside of it; as well to strengthen as to thicken it.

¶ 9. *Of Wetting Paper.*

Paper is commonly *Wet* in a *Tray* full of fair Water. The *Press-man* places the length of the *Tray* before him; his dry *Heap* on the Left Hand the *Tray*, and a *Paper-Board* with its Breadth before him on his Right Hand of the *Tray*: He lays first a Waste Sheet of Paper on the *Paper-board*, lest the Board might Soyl or foul the first Sheet of the *Heap*. Then he takes up the first *Token*, and lays it in such a position that the backs of the Quires lye towards his Right Hand, that he may the readier catch at the Back of each Quire with his Right Hand, when he is to *Wet* it: And he lays that *Token* athwart, or somewhat Crossing the rest of the *Heap*, that he may the easier know when he has *Wet* that *Token*.

Then taking the first Quire of the *Heap* with the back of it in his Right Hand, and edge of the Quire in his Left, he lays the Quire down upon the Waste Sheet, so, as that the back of the Quire lye upon the middle crease of the Waste Sheet, and consequently one half of the Quire already laid even down upon one half of the Waste Sheet. If the Paper be Strong, he opens about half the Quire, and turns it over dry upon the other half of the Waste Sheet: But if the Paper be Weak and Spungy, he opens the whole Quire, and lays that down Dry.

The reason why he lays the first Laying-down Dry, is, because it lying under the rest of the *Heap* will

will sufficiently imbibe the moisture that Soaks from it: And the reason why he leaves but half a Quire Dry for strong Paper, and an whole for Spungy, is, Because Spungy Paper Soaks in moisture faster than Strong.

Having laid down his Dry Laying, he takes another Quire off the Dry *Heap*, with the back of the Quire in his Right Hand, and the edge of the Quire in his Left, (as before,) and closing his Hand a little, that the Quire may bow a little downwards between his Hands, he Dips the back of the Quire into his Left Hand side of the Tray of Water: And discharging his Left Hand of the Quire, Draws the Quire through the Water with his Right; but as the Quire comes out at the Right Hand side of the Tray, he nimbly catches the edge of the Quire again in his Left Hand, and brings it to the *Heap*, but by lifting up his Left Hand bears the under side of the Quire off the Dry Paper, laid down before, lest the Dry Sheet should stick to the Wet, before he have plac'd the Quire in an even position, and so perhaps wrinkles a Sheet or two, or else put a Dry Sheet or two out of their even position, on the fides or ends.

But this Drawing the Quire through the Water he performs either nimbly or slowly: If the Paper be Weak and Spungy, he performs it quickly; if Strong and Stubborn, slowly.

To place this Quire in an even position, he lays the back of the Quire exactly upon the opening crease of the former Quire, and then lets the side of the Quire in his Left Hand fall flat down upon the *Heap*; and discharging his Right Hand, brings it to the

the edge of the Quire; and with the assistance of his Left Hand Thumb (still in its first position) opens or divides either a third or half of the whole Quire, according to the quality of the Paper, (as was said before,) and spreading the Fingers of his Right Hand as much as he can through the length of the Quire, turns over his opened division of the Quire upon his Right Hand side of the *Heap*.

The reason why he spreads the Fingers of his Right Hand as much as he can through the Length of the Quire; is, because the outside Half Sheet is Wet, and consequently quickly Limber, so that if the Paper be Weak, it would fall Down before the rest of his Opening, and double into wrinkles, which thus spreading his Fingers prevents.

In the same manner he Wets all the Quires of his Dry *Heap*. See Plate 29.

But having Wet his first *Token*, he doubles down a great corner of the upper Sheet of it on his Right Hand, so as the farther corner may lye a little towards the Left Hand of the crease in the middle of the *Heap*, and so as the hither corner may Hang out on the hither side of the *Heap* about an Inch and an half: This Sheet is called the *Token-Sheet*, as being a mark for the *Press-man* when he is at Work to know how many *Tokens* of that *Heap* is *Wrought-off*, and consequently to know how many is to Work.

When he has Wet the first *Token*, he removes the next uppermost Dry *Token* askew on the Dry *Heap*, and successively all the rest, as I shewed in the beginning of this ¶.

Having Wet the whole *Heap*, he lays a Waiste Sheet

Sheet of Paper upon it, that the *Paper-Board* to be laid on, Soyl not the last Sheet of the *Heap*: Then three or four times takes up as much Water as he can in the hollow of his Hand, and throws and sprinkles it all over the Waste-sheet that it may moisten and Soak downwards into the un-wet upper part of the last Division of the Quire.

The Paper being thus Wet, he takes up the whole *Heap* upon the *Paper-board*, and sets it by in a convenient place of the Room, and lays another *Paper-board* upon it: And upon the middle of the *Paper-board*, sets about Half an Hundred Weight, and lets it stand by to pres, commonly till next Morning: For *Press-men* generally Wet their Paper after they have left Work at Night.

The manner how Paper is *Set out*, shall be shewed when I come to the Office of the *Warehouse-keeper*.

¶ 10. Of Knocking up the Balls.

Ball Leathers (as I said before in § 11. ¶ 21.) are either *Pelts* or *Sheep-skins*: If *Pelts*, they are chosen such as have a strong Grain, and the Grease well Wrought out of them: They are either Wet or Dry before they come to the *Press-mans* use: If Wet, he having before-hand provided a round Board, of about Nine inches and an half Diameter: Supposing the *Ball-stocks* to be six Inches diameter, lays the Round Board upon the whole *Pelt*, and cuts by the out-side of the Board so many round pieces as he can out of the *Pelt*, reserving two for his present Use.

And hanging the rest up (commonly upon the *Braces*

Braces of the Press) to dry, that they may not Stink or Mould before he have occasion to use them.

But if his *Pelts* are Dry, he lays them to Soak (by choice in Chamber-ly) but I never heard, or by my experience could find why it is preferred before Fair Water: For the purpose of Soaking them is only to supple them.

If he Work with Leather, It is chosen with a Strong and close grain: Wherefore by experience it is found that the Neck-piece, and indeed all along the back of the Skin is best; but it is commonly subject to be greafie, which gives the *Press-man* sometimes a great deal of trouble, to make his *Balls Take*. He also lays the *Ball Leathers* in *Soak* to supple them.

When they (either *Pelts* or *Leathers*) are well *Soaked*, he Rubs them well with both his Hands, and then twists and wrings them (as Women do Cloaths) to get the Water out again.

When they are well wrung, he Sits down upon a Seat about fourteen or fifteen Inches high, commonly a *Heap* of *White Paper*, if it stand conveniently for him; but not upon a *Printed Heap*, least his Weight pressing it cause the un-dried *Inck* to *Set-off*: He sits down, I say, and lays the *Ball-stock* upon his a little opened Thighs near his Knees, that with closing his Thighs he may hold it in a Steddy position, and with the Handle of the *Ball-stock* towards his Belly. Then taking the *Ball-Leather*, he laps or Folds about three quarters of an Inch of one part of it over so much of it towards his Left Hand into a Plaight, and laying the edges of that Plaight towards him, an Inch above the edge of the *Ball-stock*, he with the Head of the

the *Sheeps-foot* drives a *Ball-nail* into the middle of the Plaight, a little more than half an Inch above the edge of the *Ball-stock*: But he Drives the *Ball-nail* not quite up to the Head, but leaves about almost a quarter of an Inch of the Nail out; that with the *Claw* of the *Sheeps-foot* he may Draw the Nail again when occasion serves.

Having driven the first Nail, he turns about the *Ball-stock*, till the opposite side, and as near as he can guess, point of the edge of the *Ball-stock* lies directly upwards between his Thighs, (as before,) and then taking as near as he can guess the opposite edge of the *Ball-leather* between his Fore-fingers and Thumb of his Left Hand, he holds the edge of the *Ball-leather* upright, and having his Wooll or Hair Teized, lying by him on his right Hand on the Floor, he grasps at once as near as he can guess, so much as may just serve to fill his *Ball-leather* and the hollow of the *Ball-stock*; which bringing to the hollow of the *Ball-stock*, he draws the *Ball-leather* over it; and lapping the edges of the *Ball-leather* over, as before, makes another Plaight, and Drives another Nail, as before: So that here is now the two opposite Sides of the Leather Nailed on. Then he takes up the *Ball* by the Handle in his Left Hand, and observes whether the Wooll tend more to one than the other open half: If it do, he thrusts it with the ends of his Fingers of his Right Hand into the middle, or else over to the other Half, till the Wooll lies equally on both the Halfs.

If he have put too much or too little Wooll into the *Ball*, he either takes some out, or adds more to, as the

Plate 30



the respective Half may require. Then lays it down again between his Thighs, as before, and lays another Plaight in the middle of the *Ball-leather* on one of the open Halves, and as near as he can gues, between the middle of the two opposite Nails; and Nails that Plaight down to the *Ball-stock*, as before.

In the like manner he Nails down the other open sides, (now Quarters,) and then again takes a View how the Wooll is disposed into the middle of the *Ball*; and where he finds it tend most to any of the open Quarters, he Drives the Wooll with the ends of his fingers, as before, or sometimes when the *Balls* have been Wrought with, and blackt with *Inck*, with the *Head* of the *Sheeps-foot* into the middle, and then Nails down as before all the open Quarters as near as he can gues; between the middle of his former driven Nails, and then again, takes another View as before, to see how the whole *Ball* pleases him.

If he finds any of the Plaights laid too near one another, he draws that Nail, and alters that Plaight, to lay it as near as he can by gues, in the middle between the next two Plaights.

Then he considers if his *Ball* be round: If it be not, he thrusts the Wooll from the bunching-out side, towards the wanting side, either with the ends of his Fingers, or the Balls of one of his Hands; while the Wooll is yet loose in the *Ball-stock*: For when the *Ball* has been Wrought withal, it will grow so hard, that the Wooll will not move out of its place.

Having *Knockt up* one *Ball* well, he *Knocks up* the other, as the firſt.

The

The *Balls* are well *Knockt up*, when the Wooll is equally dispersed about all the Sides, and the middle smoothly covered with the *Leather*, viz. not rising in Hillocks, or falling into Dales, not having too much Wooll in them, for that will subject them to soon hardning, and quickly be uneasie for the *Press-man* to Work with; or too little, for that will make the *Leathers*, as the Wooll settles with Working soon flap, and wrap over it self into Wrinkles. So that he cannot so well destrIBUTE his *Balls*: But the *Balls* ought to be indifferently plump, to feel like an Hard stuft Bed-pillow, or a strong Spunge a little moistned with Water.

Having Knockt up the *Balls*, and Rub'd out the *Inck*, as shall be shewed in the next ¶, he trys if his *Balls* will *Take*, that is, he Dabs the top of one of them three or four times lightly upon the hither part of the *Inck-block*: If he finds the *Inck* sticks to it equally all about, and that so much as has toucht the *Inck-block* is Black, it *Takes*: But if scarce any of the *Leather* is Black, or that it be Black and White in Splotches, then the *Balls* does not *Take*: Wherefore he consideres whether his *Ball* be too Wet, or else Greasie, for each of these inconveniences will hinder the *Taking* of the *Ball*.

If it be too Wet, he burns half a Sheet or an whole Sheet of Waste Paper, and waves his *Ball* to and fro over the flame of it; but so quick and cautiously that he neither shrinks the *Leather* or Dryes it too much: In Winter time when a fire is at Hand, he dryes it gently by the fire.

If it be Greasie, he with the edge of the *Ball-knife* scrapes

scrapes off the thick Oyl, that Works down out of the *Nut* and *Spindle* of the *Press*, or else with the point of his Knife takes a convenient quantity of Oyl out of the *Plattin-pan*, or for want of either takes fresh Sallad Oyl and smears and spreads it well all over the whole *Ball-leather*; and then holding the *Ball-knife* in his Right Hand, with its edge a little sloping downwards that it cut not the *Ball-leather*, and the handle of the *Ball-Stock* in his Left Hand, he joyns the bottom of the *Ball-leather*, viz. as near the outer edge of the *Leather* as he can, for the *Ball Nails* to the edge of the *Ball-knife*, and turning the *Ball* about by its Handle, presses it hard against the floapt edge of the *Ball-knife*, and at once drives the laid on Oyl and Grease too before the floapt edge of the *Ball-knife*; but he keeps the Handle of the *Ball-Stock*, and consequently the whole *Ball* too, constantly turning, that the whole circumference of the *Ball* may be *Scraped*: And as the *Ball* has performed a Revolution against the floapt edge of the *Ball-knife*, he draws gradually his Left Hand a little backish, that the floapt edge of the *Ball-knife* may by several Spiral revolutions of the *Ball*, scrape up to the very top of the *Ball*, and carries before it the Oyl and Grease thither: Which having there, he gathers up upon the *Blade* of his *Ball-knife* and disposes of it, as of so much Dirt and Filth.

After a due proces of either of these Operations respectively, his *Ball* will *Take*, and he again dabs gently the top of his *Ball* three or four times on the *Inck-block* (as before) and finding it *Take*, he takes the Handle of it into the clutched Fingers of his Left Hand,

Hand, holding the *Ball-stock* just a little above the circle of his Fore-finger and Thumb, and grasps the Handle of the other *Ball-stock* into his Right Hand, with the circle of his Finger and Thumb upwards, and the now bottom of his Right Hand downwards, but not resting upon the *Ball-stock*; and trys if that *Ball* will *Take*, by dabbing the Leather of it three or four times upon the other *Ball*: If it do not *Take* with dabbing, he twists the *Balls* in either Hand close and hard, contrary to one another, to besmear the upper with the under *Ball*. If after this, the upper *Ball* do not *Take*, he considers the cause, and remedies it, as he did the first *Ball*.

¶ 11. *Of Rubbing out Inck.*

Before the *Press-man* goes to Work, he Rubs out his *Inck*.

If the *Inck* have lain long on the *Inck-block* since it was *Rubbed out*, the Superficies of it generally is dried and hardened into a Film or Skin, wherefore the *Press-man* carefully takes this Film quite off with the *Slice* before he disturb the Body of the *Inck*: For should any, though never so little of it, mingle into the *Inck*, when the *Ball* happens to take up that little particle of Filin, and delivers it again upon the *Face* of the *Letter*, it will be a *Pick*, and Print black, and deface the Work: And if it get between the *Face* of two or more *Letters*, or the *Hollows* of them, it will obliterate all it covers. And if it be *Pull'd* upon, and the *Press-man* not careful

careful to over-look his Work, it may run through the whole *Heap*.

Wherefore having carefully skinned off the Film with the edge of the *Slice*, he scrapes his *Slice* clean with the *Ball-knife*, lest some small parts of the Film should yet stick to, or remain on the *Slice*: And then with the *Slice* brings the body of *Inck* into the middle of the Plain of the *Inck-block*, and searches the fides of the *Inck-block*, by thrusting the edge of the *Slice* forwards along them and all the angles of the *Inck-block*, and so scrapes off all the *Inck* as clean as he can, and gathers it to the whole mass of *Inck*: Then with the *Slice* he turns the whole mass about half a score times over and over to mingle it well together, lest some part of it should be more consolidated than the rest: And to mingle it yet better, he then falls to *Rubbing* it with the *Brayer*, grafting the Handle of it in his Right Hand, he begins to *Rub* with all his strength at the hithermost fide-boundings of the Body of *Inck*, and keeping *Rubbing* through the almost whole length of the *Inck-block*, he gradually proceeds to the farther side of the Body of *Inck*. In this manner of *Rubbing* he bears hardest upon the farther edge of the *Brayer*, because the hither sides of the *Inck-block* are not fenced in with Rails about them; and should he *Rub* with the bottom of the *Brayer* flat upon the *Inck-block*, he might draw too great a body of *Inck* to the unfenced fides; so that the *Inck* would be subject to run off: This *Rubbing* is only to spread the *Inck* pretty equally over the superficies of the *Inck-block*: Wherefore he now begins a circular *Rubbing*, observing in the circulation

culation of the *Brayer* that he always a little mounts the part of the edge of the bottom, which in its progress is ready to approach a prominent body of *Inck*, that it may somewhat slide over it, that the *Inck* be not lickt up high on the sides of the *Brayer*.

Then with the Handle of the *Slice* in his Left Hand and the Handle of the *Brayer* in his Right, he joyns the bottom edge of the *Slice* to the side of the *Brayer*, holding the flat of the *Slice* Horizontal, and the bottom of the *Brayer* perpendicular both over the *Inck-block*, and keeping his *Brayer* and *Slice* in this position, by turning the Handle of the *Brayer* in his Right Hand, held pretty stiff against the edge of the *Slice*, he scrapes off all the *Inck* that the side of the *Brayer* has lickt up: And setting down his *Brayer*, he takes the *Slice* in his Right Hand and lays what *Inck* he scrapes off the side of the *Brayer* again upon the *Inck-Block*, and *Slices* the whole mass of *Inck* into the farthermost corner of the *Inck-block*.

This *Rubbing* of the *Inck* may serve when the *Inck-block* had *Inck* on it before.

But if no *Inck* were on the *Inck-block* before, then he lays new *Inck* on the *Inck-block*: Wherefore he considers what Work he Works on: whether it be small or great *Letter*: If it be small *Letter*, or curious Work, the *Inck* must be *Strong* he Works with: But if it be great *Letter* or sleight Work, he makes *Soft Inck* serve, or at least mingles but a little *Hard Inck* with it.

If the *Inck* be too *Hard*, as sometimes in very frosty Weather it will be, then, though his Work be curious, yet he must *Rub* in a little *Soft Inck* to soften it; because

because it will not else *Distribute* well upon the *Balls*; especially if the *Leathers* be a little too *Wet*, or a little *Greasie*: Besides, it may and many times does pull and tear the *Grain* off the *Skin*; which not only spoils the *Skin*, but fills the *Form* full of *Picks*.

Sometimes when he finds the *Inck* too pale, he *Rubs* in *Blacking*, but he first joults the bottom of the *Blacking Tub* three or four times against the ground, that if by chance any dirt or filth have gotten into it, it may sink to the bottom of the *Tub*.

But when he either mingles *Strong* and *Weak Inck* together, or else puts in *Blacking*, he applies himself again first to *Rubbing* with the *Brayer*, the length-way of the *Inck-block*, as before, and then to a circular *Rubbing*, as before; and to cleansing his *Brayer*, as before; and this long-ways *Rubbing*, circular *Rubbing*, and cleansing his *Brayer*, he reiterates so oft, till he judge the whole mass of *Inck* sufficiently *Rubbed* and mingled, and the *Blacking* perfectly imbibed by the *Inck*: And then he *Slices* the whole mass of *Inck* to the farthermost corner of the *Inck-block*, as before.

¶ 12. *Of Destributing the Balls.*

I shewed you in ¶ 10 of this § how he dabb'd the *Ball* on the *Inck-block*, to try if it would *Take*: And I shewed you in what Posture he handled the *Balls* when he tryed if the other *Ball* would *Take*: Therefore for *Taking Inck* and *Handling the Balls* I (to avoid tautology) refer you to that ¶.

Having now *Taken Inck*, and gotten the *Balls* in his Hands, in that posture, he Works them side-ways upon

upon one another to and from him, and with a craft (acquired by use) in the Handling of the *Balls*, all the while keeps the Handles, and consequently the whole *Ball-stocks* (both) turning round in his Hands and in a motion contrary to each other, *viz.* His under *Ball* moving from the Left Hand to the Right, and his upper *Ball* moving from his Right Hand to the Left; and by and by in a second motion contrary to the first, *viz.* his under *Ball* moving from the Right Hand to the Left, and his upper *Ball* moving from the Left Hand to the Right.

And these motions and Operations he continues so long till he judges, and in part perceives the *Inck* is equally *Distributred* all over the whole *Ball-Leathers*.

The first way of turning the *Ball Handles*, while the *Balls* are moved to and from him, is made by pressing the ends or *Balls* of the fingers of both his Hands upon the *Ball-handles* from-wards his Hands: And the second way of turning them contrary to the first, is made by gathering in the ends or *Balls* of his fingers while they are in their circular to and fro motion. But because in gathering in his fingers, he does somewhat dis-ingage his grasp of the *Ball-Handles*, therefore he lightly and almost insensibly, tosses the *Ball-stocks* a little up, that when they are dis-ingaged from a close grasp, his fingers ends may the easier draw the *Handles* towards him. This is a Hand-craft, which by continued use and practice, becomes familiar to his Hands.

¶ 13. Of

¶ 13. *Of Beating.*

The *Press-man* imagines, or by his eye judges the length of his *Form* (be it what Volumne it will) devided into four equal parts or Rows, which four Rows for distinction sake, I shall number from the Left Hand to the right, with first Row, second Row, third Row, fourth Row, just as an *Octavo Form* is exactly devided by four Rows of *Pages*.

He places his Left Hand *Ball* at the hither end of the first Row, so that though the *Ball* be round, yet the square encompassed within that round shall sufficiently cover so much of the square of the hither end of that Row as it is well capable to cover; and his Right Hand *Ball* he sets upon the hither end of the third Row: He sets his *Balls* close upon the *Face* of the *Letter*, with the *Handles* of the *Ball-stocks* a little bending towards him: But as he presses them upon the *Face* of the *Letter*, he mounts them perpendicular; and lifting at once both the *Balls* lightly just clear off the *Face* of the *Letter*, he removes them about the fifth part of the breadth of the *Form* upwards, *viz.* towards the farther side of the *Form*, and again sets them close down upon the *Face* of the *Letter*, with the *Handles* of the *Ball-stocks* again bending a little towards him, as before: and as he presses them upon the *Face* of the *Letter*, mounts them perpendicular, as before: Thus in about four or five or six such motions, or rather removes of the *Balls*, according to the breadth of the *Form*, he *Beats* over the first and third Rows. Thus *Beating* from the hither

ther towards the farther side, is in *Press-mens* phrase called *Going up the Form*.

The reason why he bends the *Handles* of the *Ball-stocks* a little towards him, is, that the *Ball-leathers* drag not upon the *Face* of the *Letter*; for then the edges of the hollows between the *Lines* or *Words*, or the edges of the cavities below the *Face* would scrape *Inck* off the *Balls* to stop up or choak the *Form*. And the reason why (before he removes them) he mounts the *Handles* of the *Ball-stocks* a little perpendicular, is, that the *Balls* may touch in their greatest capacity upon the *Face of the Letter*.

To *Come down the Form*, he skips his *Balls* both at once from the first and third Row to the second and fourth Row, and brings them down as he carried them up; only, as before, he bended the *Handles* of the *Ball-stocks* a little towards him, so now he bends them a little from him: That the *Ball-leathers* (now *Coming down*) drag not, as aforesaid. Then in like manner he again skips the *Balls* from the second and fourth Row to the first and third Row, and again *Goes up the Form* with the *Balls*, as he did before. And then again skips, as before, and *Comes down the Form* again with the *Balls*.

Having thus gone twice upwards and twice downwards with the *Balls*, the *Form* is sufficiently *Beaten* in a train of Work, when the *Face of the Letter Takes well*.

But if he *Beats* the first Sheet of a fresh *Form*, or after a *Form* is *Washed*, or he makes a *Proof*, he *Goes* three four or five times *Upwards* and *Downwards*: Least the *Face of the Letter* should happen to be *Wet*

or

or moist, and consequently un-apt to take *Inck*, without reiterated *Beatings*.

¶ 15. *Of Pulling.*

We will suppose now two *Press-men* going in the Morning to their train of Work: The one they distinguish by the name of *Firſt*, the other his *Second*, these call one another *Companions*: The *Firſt* is he that has wrought longest at that *Press*, except an Apprentice, for he must allow any Journey-man though new-come that ſtile: Generally the Master Printer reposes the greatest trust upon his care and curioſity for good Work; although both are equally liable to perform it.

All the privilege that the *Firſt* has above the *Second* is, that the *Firſt* takes his choice to *Pull* or *Beat* the agreed stint firſt: And that the *Second* *Knocks up the Balls*, *Washes the Forms*, *Teizes Wooll*, and does the other more ſervile Work, while the *Firſt* is imploid about making *Register*, ordering the *Tympa*, *Frisket*, and *Points*, &c. or otherwise *Making Ready the Form*, &c.

The *Firſt* now takes his ſpell at *Pulling*: For the *Firſt* and *Second* take their ſpell of *Pulling* and *Beating* an agreed number of *Tokens*: Sometimes they agree to change every three *Tokens*, which is three Hours work, and sometimes every six *Tokens*; that they may both *Pull* and *Beat* a like number of *Tokens* in one day.

Under the general notion of *Pulling* and *Beating* is comprised all the operations that is in a train of work per-

performed by the *Puller* and the *Beater*: For though the *Puller Lays on Sheets*, Lays down the *Frisket*, Lays down the *Tympans* and *Frisket*, *Runs in the Carriage*, *Runs out the Carriage*, takes up the *Tympans*, Takes up the *Frisket*, *Picks the Form*, Takes off the Sheet, and Lays it on the *Heap*, yet all these Operations are in the general mingled and lost in the name of *Pulling*. And as in *Pulling*, so in *Beating*; for though the *Beater Rubs* out his *Inck*, *Slices* it up, *Distribute* the *Balls*, peruses the *Heap*, &c. yet all these Operations are lost in the general name of *Beating*. Thus they say the *First* or the *Second* is *Pulling*; or, the *First* or the *Second* is *Beating*; though they are performing the different Operations aforesaid: unless upon particular occasions the respective Operations are particularly nam'd.

As there are many Operations conjunct to *Pulling*, and *Beating*, so the *Press-man* performs them with various Set and Formal Postures and Gestures of the Body. For,

To take a Sheet off the *Heap*, He places his Body almost straight before the hither side of the *Tympans*: I say almost straight, Because it is more straight before the side of the *Tympans* than it is before the angle made by the *Paper-bench* and the side of the *Tympans*: But he nimbly twists the upper part of his Body a little backwards towards the *Heap*, the better to see he takes but one Sheet off, which he loosens from the rest of the *Heap* (as I have shewed before) by drawing the back-side of the Nail of his right Thumb on his Right Hand nimbly over almost the whole length of the *Heap*, and receiving the hither end of the Sheet with

with the inside of his Left Hand fingers and Thumb catches with his Right Hand about two inches within the farther edge of the Sheet near the upper corner, and about the length of his Thumb below the hither edge of the Sheet, and brings it nimbly to the *Tympan*: And at the same time twists his Body again straight before the *Tympan*, only a very little moving his right Foot from its first Station a little forwards under the *Carriage Plank*: And as the Sheet is coming to the *Tympan* (we suppose now he Works upon *White Paper*) he nimbly disposes the fingers of his Right Hand under the farther edge of the Sheet near the upper corner; and having the Sheet thus in both his Hands, lays the farther side and two extream corners of the Sheet down even upon the farther side and extream farther corners of the *Tympan-sheet*, but he is careful the upper corner of the Sheet be first laid even, upon the upper corner of the *Tympan-sheet*; that he may the sooner disingage his Right Hand: And if by the nimble casting his eye, he perceive the sides of the Sheet lye un-even upon the *Tympan-sheet*, he with his Left Hand at the bottom corner of the Sheet, either draws it backwards, or pulls it forwards, as the Sheet may lye higher or lower on the hither corners of the *Tympan-sheet*, while his Right Hand being disengaged, as aforesaid, is removed to the backside the *Ear* of the *Frisket*, and with it gives it a light touch to double it down upon the *Tympan*. And by this time his Left Hand is also disengaged, and slipt to the hither under corner of the *Frisket*, to receive it, that it fall neither too hard or too quick down upon the *Tympan*: For hard falling

falling may shake the loose Sheet on the *Tympa*n out of its place; and so may the quick pressure of the Air between the *Tympa*n and *Frisket*, after the Sheet is well laid: and while his Left Hand receives the *Frisket* his right is disengaged from the *Ear* of the *Frisket*, and removed to the middle of the back-side the *Tympa*n; which he grasps between the Balls of his Fingers and Thumb, to lift it off the *Gallows*, and double it and the *Frisket* together on the *Form*. And while the *Tympa*n is coming, he slips his Left Hand Fingers from under the *Frisket* to the hither outer corner of it, as well to keep the Sheet close to the *Tympa*n in its position, as to avoid the jobbing of the lower side of the *Frisket* against any small square shoulder, either of the *Furniture*, *Quoins*, *Chase*, or the corners that may stand higher than their common Plain.

Then nimbly slipping his Left Hand, he with it grasps the *Rounce*, and with a moderate strength, nimbly gives its *Winch* about one Turn round; I say about, because the first *Pull* will generally fall out to be made about the middle of the *Carriage*; (as was shewed in § 11. ¶ 16.) but perhaps not just in the middle: yet to regulate his *Runing in*, he made a mark before on the farther Rail of the *Tympa*n, (as I shewed in ¶ 3. of this §) to which mark he *Runs the Carriage in*, till he bring the mark in a Range with the fore-edge of the *Plattin*; and as it is coming, skips his Hand to within an Inch or two of the end of the *Bar*, and then at once gently leans his Body back, that his Arm as he *Pulls the Bar* towards him may keep a straight posture; because in a *Pull* it has then
the

the greatest strength. And he also slips his right Foot upon the *Foot-step*, while his Left Hand holds fast by the *Rounce*; as well to rest on the *Foot-step* and *Rounce*, as to enable his Body to make a stronger *Pull*; which will prove *Longer* or *Shorter*, according to the strength put to it, and also the *Hard* or *Soft Justifying* of the *Head*, (as was shewed in ¶ 5. of this §.)

Then disengaging his Right Hand again from the *Handle* of the *Bar*, he slips it to the *Bow* of the *Bar*, before the Handle fly quite back to the *Cheek* of the *Press*: For should the *Bar* by its forcible Spring knock hard against the *Cheek* of the *Press*, it might not only shake some of its Parts or circumstantial appurtenances out of order, but subject the whole Machine with oft reiteration to an unstable position. Besides, the farther the *Bar* flies back, the more he hinders quick riddance in recovering it again. But yet he must let the *Bar* fly so far back as that the *Tympan* may just rise clear off the *Plattin*; lest when he *Runs in* his *Second Pull*, the *Face* of the *Plattin* rub upon the *Tympan*, and shoves the Sheet upon the *Face* of the *Letter*, and sometimes *Slurs*, and sometimes *Doubles* it upon the *Face* of the *Letter*.

Having *Pull'd* the *First Pull*, and having the *Rounce* still in his Left Hand, He turns the *Rounce* about again, till the *Carriage Runs in* so far, as that the second mark on the Rail of the *Tympan* comes into a Range with the hither edge of the *Plattin*, as before the first mark did; and then *Pulls* his *second Pull*, as he did his *first*; and slips his Right Hand again off the *Handle* of the *Bar* to the *Bow*, (as before) and guides the *Bar* up to its *Catch* leisurely, that coming now

now near the *Cheek* it knock not against it: and just as he has *Pulled his Second Pull*, he gives a pretty quick and strong pressure upon the *Rounce*, to turn it back, and the *Carriage* out again: And so soon as he has given that one pressure, (as aforesaid) he desingages his Left Hand from the *Rounce*, and claps the fingers of it under the middle of the *Tympan*, and on the *Ear* of the *Frisket*: and while this is doing, removes his Right Hand to the now upper, but immediately it will be the under-side of the *Tympan Rail*, within four or five Inches of the upper end of it, to receive the *Tympan*, as it is lifted up off the *Form* by his Left Hand. And having thus received it, lets it descend gently down on the *Gallows*. And as it is descending, slips his Left Hand fingers under the hither lower corner of the *Frisket*, and gives the *Frisket* a toss up; while by this time his Right Hand being disengaged from the *Tympan*, is ready to catch the *Frisket* by the *Ear*, and convey it quick and gently to its *Stay*: And while the *Frisket* is going up; he slips the end of the middle finger of his Left Hand, or sometimes the ends of his two middle fingers with their Balls upwards, under the hither lower corner of the *Pulled off Sheet*, and at the instant he has got them under, he nimbly bows his Joyns upwards, to throw up the corner of the Sheet, to make it mount a little, for him to gather about two Inches hold of it between the Balls of his Thumb and fore-finger. And heaving the whole Sheet by this corner a little upwards, He at the same time lifts it off the *Points*, and draws it somewhat towards him; and as it comes, catches it near the upper corner of the same side of the Sheet,

Sheet, between the foremost Joynts of his fore-fingers and Ball of the Thumb of his Right Hand, and nim-bly twisting about his Body towards the *Paper-bench* carries the Sheet over the *Heap of White-paper* to a *Paper-board*, which before he placed beyond that *Heap* on his Right Hand, (as aforesaid in ¶ 14.) and lays it down upon a Waste-sheet laid for that purpose on that *Paper-board*; but while it is coming over the *White-paper Heap*, though he have the Sheet be-tween both his fore-fingers and Thumbs, yet he holds the Sheet so loosly that it may move between them as on two Centers, as his Body twists about (as afore-said) from the side of the *Tympan* towards the side of the *Paper-bench*.

Thus you see both the *Press-mans* Hands at the same time alternatively ingaged in different Operations: For while his Right Hand is employed in one Action his left is busie about another, and these ex-ercises so suddenly varied, that they seem to slide in-to one another; one Posture beginning when the former is but half performed.

Having thus *Pulled* one Sheet, and laid it down: He turns his Body towards the *Tympan* again, and as he is turning gives the next Sheet on the *White-paper Heap* a Touch with the backside of the Nail of his Right Thumb, as before, to draw it a little over the hither edge of the *Heap*, and lays it on the *Tympan*, &c. as he did the first; and so successively eve-ry Sheet till the whole *Heap of White-paper* be *Wrought off*.

As he comes to a *Token-sheet*, he un-doubles that, and smooths out the Crease with the back-side of the

the Nails of his Right Hand, that the *Face* of the *Letter* may Print upon smooth Paper. And being Printed off, he folds it again, as before, for a *Token-sheet* when he works the *Reiteration*.

Having *Wrought off* the *White-paper*, he turns the *Heap* thus:

He takes the *Paper-board* that his *White-paper* lay on, and sets it down on the ground: Then removes the *Heap* to his Left Hand; then takes up the *Paper-board*, and lays it on his Right Hand: And if it be *Twelves*, or any *Form Imposed* like *Twelves*, as *Twenty fours*, &c. he turns it from one long side of the Paper to the other, that is, the long side of the Paper that stands on his Right Hand when the Printed side lies upwards, he turns over to his Left Hand, and lays the un-printed side upwards. In performing this, he grasps off of the *Wrought off Heap* so much at once between both his Hands as he can well govern, without disordering the eveness of the sides of the *Heap*, viz. a *Token*, or more, and lays that upon the *Paper-board*; then takes another grasp in like manner, and lays that on the first grasp, and so successively, till he have turned the whole *Heap*, grasp by grasp. Then removes the *Heap* near the *Tyman*, and lays the other *Paper-board* beyond it, as the first *Paper-board* stood before; always remembering to lay a *Waste-sheet* first on the *Paper-board*.

Having now turned the *Heap*, and made *Register* on the *Reteration Form* (as was shewed in ¶ 7. of this §) he Works off the *Reteration*: But he somewhat varies his posture in the *Laying on his Sheets*: For as before, when he wrought *White Paper*, he catcht

catcht the Sheet by the upper farther corner with his Right Hand, he now having heaved up the Sheet (as aforesaid) catches it as near the farther side of the farther *Point-hole* as he can, with the Ball of his Right Hand Thumb above the Sheet, and the Ball of his fore-finger under the Sheet, the readier to lay the *Point-hole* over its respective *Point*: which having done, he slips his Body a little backwards, and both his Hands with it, his Right Hand towards the hither *Point-hole*, with the back-sides of the Nails of his fingers to draw or stroak it over the *Point*: and the fingers of his Left Hand, as they come from the farther corner, nimbly slipping along the bottom edge of the Sheet, till they come to the hither corner; and then with his fore-finger and Thumb, layes hold of it, to help guide the *Point-hole* on that *Point* also: Then *Pulls* that Sheet, as before, as he did the *White Paper*, and so successively all the rest of the *Reteration*. Only, the *Token-sheets*, as he meets with them, he Folds not down again, as he did the *White Paper*.

If a *Press-man* have no *Companion*, but works alone; he has a little oblong Square *Form* or Bench made to stand so high as the *Face* of the *Letter* upon the *Press-stone*, and so long as to contain the *Balls* when set upon the *Ball-leathers*.

This *Form* or *Bench* some Work-men will place on the hither side the hither *Cheek*, within about half an Inch of the foreside of the *Cheek*: And other Work-men will place it on the farther side of the *Carriage*; each sort of Work-men supposing that in the place he sets it, the *Balls* stand most commodious for his

his quick taking up and setting down: I shall not plead the convenience of either, but in short speak to the inconveniences of both.

The inconvenience of placing it on the hither side the hither *Cheek*, is, that the *Press-man* must twist his Body somewhat about to take up the *Balls*. And the inconvenience of placing it on the further side the *Carriage*, is, that the *Press-man* must thrust his Body over the *Form* to take up the *Balls*: both ways strain the Body, and hinder riddance.

Those that place it on the hither side the *Cheek*, begin and end their *Beating* as has already been shewed, *viz.* on the hither side the *Form*: But those that place it on the farther side the *Carriage*, begin and end their *Beating* on the Rows on the farther side the *Form*.

One *Press-man* in his train of Work will *Beat* so soon as he has laid the *Tympa*n on the *Gallows* after *Pulling*: Another will not *Beat* till he has laid his Sheet on the *Tympa*n, and doubled the *Frisket* down on it: both sorts fancying their own way most quick and commodious: For these conveniences are the purposes they both drive at.

¶ 16. *Of Printing Red, or other Colours with Black.*

When *Red* and *Black* are to be Printed upon the same Sheet, the *Press-man* first *Makes Register*, as was shewed ¶ 7. and *Makes Ready* his *Form* as was shewed ¶ 14. of this §. Then having a new *Frisket Drawn*, as was shewed ¶ 8. He Prints upon his new *Frisket* with *Black*. And having before a *Proof-sheet* Printed

Printed *Black*, with the Words to be Printed *Red* under-lined on that *Proof-sheet*; He takes off his *Frisket*, and lays it flat on a *Paper-board*, and with a sharp-pointed Pen-knife neatly cuts out those words on the *Frisket*, and about half a Scaboard *Margin* round about the words, that he finds under-lined on the *Proof-sheet*: Then sets the *Frisket* by till he has wrought off his *Heap* with *Black*, and puts his common *Frisket* on the *Joynts* of the *Typan* again.

While the *Press-man* is *Cutting the Frisket*, the *Compositor* takes those *Words* out of the *Form* that are *Under-lin'd* on the *Proof-sheet*, and in their place puts *Quadrats*, m-*Quadrats*, *Spaces*, &c. to *Justifie* the *Lines* up again.

Then *Locking up the Form*, the *Press-man* Works off the *Heap Black*, as was shewed in the last ¶.

Having wrought off his *Heap Black*, he takes off the common *Frisket*, and puts on his new cut *Frisket*: Then taking a piece of thick Scaboard he cuts it into so many small slips as there are *Whites* in the *Form* to be Printed with *Red*; These small slips he cuts exactly to the length of the *Quadrats*, &c. the *Compositor* put in, and to the breadth of the *Body*; but rather a small matter less than bigger, lest they bind at the bottom of the *Shank* of the *Letter*: for when the *Compositor* takes out the *Quadrats*, &c. he put in before the *Form* was *Wrought off Black*, these slips of Scabards the *Press-man* pricks on the Point of a *Bodkin* and puts them into their respective holes: And being loosen'd off the Point of the *Bodkin* with the blunt Point of another *Bodkin*, are laid down flat on the *Press-stone*; These slips are called *Underlays*, and are

are described in ¶ 14. of this §. Upon these *Underlays* the *Compositor* puts in again the *Words* or *Letters* he took out before the *Form* was *Wrought off Black*: So that these *Words* now stand higher than the other *Matter* of the *Form*, and therefore will Print when the other *Matter* will not. But yet for the more assurance that the other *Matter* Print not, the *New-cut Frisket* was prepar'd, which hinders any thing to Print but what Prints through the Holes cut in it; which Holes these *Underlaid Words* fall exactly through.

Having mingled the Red, or any other intended Colour with *Varnish*, as shall be shew'd in the next ¶, he *Beats* the *Form* as with *Black*; and *Pulls* it very lightly, lest these *Underlaid Words* standing higher than the rest of the *Matter*, Print too *Hard*.

¶ 17. *Of mixing and Grinding Colours with Varnish.*

Varnish is the common *Menstruum* for all Colours that are to be used in Printing.

Red is the chief Colour that is used with *Black* in Book-Printing: of *Reds* there are two sorts in general use, *viz.* *Vermillion* and *Red-Lead*; *Vermillion* is the deepest and purest Red, and always used to Books of Price. *Red-Lead* is much more faint and foul, and though more used than *Vermillion*, yet used only to Books of Vulgar Sale and Low price, as Almanacks, &c.

Yet may other Colours also be used to Print withal; yea, any Colours that are used in Oyl-Painting, as *Lake* and *Russet*, which are *Reds* deeper than *Ver-*

Vermillion; Virditur Indico and Bice for Blews; Orpment, Pinck, Yellow Oaker, for Yellow: Virdigreace, and Green Virditur, for Greens: or what other Colours may be fancied.

But all Colours for Printing must be Ground with *Soft Varnish*; especially those Colours that are of themselves Dryers; as *Red-Lead, Vermillion, Orpment, Verdigrease*; For should they be Ground with *Hard Varnish* the Colour'd *Inck* would dry and harden so quick and fast upon the *Form*, that it would soon be choaked up, and consequently want *Washing* e're the *Form* be *Wrought off*; which would be very troublesome to the *Press-man*, because he must expect to have all his *Underlays* to new fit to their places: And besides, it will so Dry and Harden upon the *Balls*, that the Grain of the *Leathers* would quickly tear off, and fill the *Form* full of *Picks*.

The fitteſt Colours therefore for Printing, are ſuch as are of the lighteſt Body and Brighteſt Colour.

They are to be Ground with a Mullar on a ſmooth Marble Stone, ſo long that the Colour becomes impalpable, and is throughly mingled with the *Varniſh*.

¶ 18. *Of Printing with Gold and Silver.*

This Operation is ſeldom uſed but for Printing Names; and therefore rarely dreſt in a *Form* to the *Press*; but is uſually Printed in the *Stick*: And then the *Compoſiter* *Justifies* his *Stick* very *Hard*, as well that

that the *Letters* fall not out when the *Back* of the *Stick* is turned upwards, as that the strength of the *Hard Varnish* the *Face* of the *Letter* is *Beat* with, pulls not the *Letter* out of the *Stick*.

Therefore the *Press-man* makes two little *Balls*, by tying about an Handful of Wooll in new clean Leather, and dabs one of his *Balls* upon the Hardest *Varnish* he has, and with the other deistributes his *Varnish* to a convenient Fatnes, as he did his *Balls* in ¶ 12. With one of these *Balls* he *Beats* the *Name*; and having his Paper *Wet*, he lays a fingle *Blanket* on the *Correcting-stone*, and his Paper on the *Blanket*; and with a *Riglet* fitted to the *Stick*, he presses the *Letter* to keep it straight in *Line*: Then places the *Face* of the *Letter* exactly flat down upon the Paper, and with the force of both his Hands presses the *Letter* hard and even down upon the Paper, to receive an Impression: But he takes care not to wriggle the *Letter* in the *Stick* backwards or forwards, lest either the *Beard Print*, or the sides of the *Letter* be more or less besmeared with the *Varnish*: Because the Gold or Silver will stick to the least Sully that the *Varnish* may chance to make.

Then cutting his Gold or Silver to a size full big enough to cover the Printed *Name* or *Matter*, he lays his Gold or Silver on what was Printed, and with a little White Cotton gently presses the Gold or Silver upon the Printed *Matter*, and lets the Paper lye by a while; as well that it may dry, as the *Varnish* Harden, (which will quickly be) he with his Handkerchief gently wipes over the Printed *Matter*. So shall all the Gold or Silver that was toucht

toucht by the *Varnish*, stick to the *Varnish* on the Paper, and the other will wipe away.

If he lists to Polish it, he uses a Tooth or the Ivory Handle of a Knife.

¶ 19. *Rules observed; and Remedies to the Inconveniences the Press-man may meet with in a Train of Work.*

1. The *Press-man* is to make a *Proof* so oft as occasion requires: If he takes off his *Form* to make a *Proof*, he *Un-locks* and lays the *Quoins*, as shall be shewed when I come to *Washing* of the *Form*: but many *Printing-houses* have an empty *Press* stands by to make *Proves* on.

The *Compositor* having brought the *Form* to the *Press*, lays it down on the *Press-stone*, and the *Press-man* places it even under the *Plattin*, that the *Plattin Bear* not harder on the hither or farther side of the *Form*: Then he *Pulls* the *Cards* upon the *Form*, to press it into a flat position: Then *Beats* the *Form* four or five times over, that he may be sure it *Take*: Then he lays the *Proof-sheet* on the *Form*, so as by his Judgement it shall have an equal *Margin* on all its opposite sides, and a double *Blanket* on the *Proof-sheet*; and *Running in the Carriage*, *Pulls* the *Proof-sheet*: Having *Pull'd* it, he *Runs-out* the *Carriage* again, and takes the *Proof-sheet* off the *Form*. Then with the *Ly-brush* dipt in *Ly*, he *Rubs over the Face* of the *Letter* three or four times, to *Wash* off what *Inck* may remain on it, and carries the *Form* again

again to the *Correcting-stone* and lays it down: And the *Proof* he carries to the *Compositors Cafe*.

2. If the *Form* he Works on be *Small-letter*, or *Old Letter*, he uses *Strong Inck*; and *Beats Lean*: For *Weak Inck* and *Fat Beating*, will quickly Choak up the *Face* of the *Letter*. But to fetch off *Hard Inck* thin *Beat* on the *Face* of the *Letter*, he *Pulls Hard*. But if the *Form* be great *Letter* or *Black English Letter*, it will allow *Fatter Beating*.

3. He keeps a constant and methodical posture and gesture in every action of *Pulling* and *Beating*, which in a train of Work becomes habitual to him, and eases his Body, by not running into unnecessary diversions of Postures or Gestures in his Labour, and it eases his mind from much of its care, for the same causes have constantly the same effects. And a *Pull* of the same strength upon the same *Form*, with the same *Beating*, and with the same *Blankets*, &c. will give the same Colour and Impression.

4. That every two Sheets, if the *Form* be small *Letter* (rarely three, unless *Great Letter*) he *Takes Inck*; and so soon as he comes off the *Form*, viz. has *Beat* it, he falls to *Distributing* his *Balls*. And that Sheet which he *Takes not Inck* he steps to the *Heap* to overlook the Colour, viz. whether he has *Taken* too much or too little *Inck*; and to see if no accidents have befallen the *Form*, viz. that no *Letters*, *Quadrats* or *Furniture*, &c. *Rise*, that no *Letters* are *Batter'd*; That *Bearers* fail not, viz. grow so thin with long *Pulling* on, as not to perform the office of *Bearers*; that the *Register* keep good; that no *Pick* be got into the *Form*, or any other accident that may de-
face

face the beauty of the Work, but all this while still keeps his *Balls Distributing*.

If he have taken too much *Inck*, which sometimes may happen (but seldom for want of carelessness) he will not *Take Inck* again, till he have wrought his *Balls* to a good and moderate Colour. But if the Sheet already *Pull'd* be so *Black* that it may not tolerably pass, he Doubles or Folds it in the middle and lays it cross the *Heap*, that the *Gatherer* may take or leave it, in case the *Heap* falls Short. If he foresee the next Sheet will also be too *Black*, he takes a Dry Sheet of Waste Paper between his *Balls* and *Distributes* upon that Dry Sheet, that it may take off the *Inck*.

If in doing this, the strength of the *Inck* have *Pull'd* the *Paper* to pieces, so that small rowl'd-up bits may stick upon the *Ball-leathers*, if they be but a few he picks them off with his Fore-finger and Thumb, but if there be many he makes his *Balls* clean by *Scraping* them (as I shewed in ¶ 10. of this §) for else these small rowl'd-up bits of Paper will be apt to fill the *Form* full of *Picks*.

If *Letters*, *Quadrats* or *Furniture Rife*, he puts them down, the *Letters* and *Quadrats* with his *Bodkin*, and the *Furniture* with his *Hammer*, and *Locks* the *Quarter* they are in, a little Harder.

If any *Letters* are *Batter'd*, he *Unlocks* the *Quarter* they are in, and desires the *Compositor* to put in others in their room.

If *Bearers* Fail, that is, Squeeze thinner with long *Pulling* on, he takes those *Bearers* off, if they are on the *Frisket*, and puts on thicker: But if the *Furniture*,

ture, were *Under-laid* (as I shewed in ¶ 7. of this §) he *Unlocks* the *Quarter* they are in, and *Under-lays* them according to his Judgement.

If *Register* be *Out*, which sometimes happens by the starting of the *Quoins*, he mends it, as I shewed in ¶ 7. of this §.

If a few *Picks* are got into the *Form*, that is, little bits of Paper, Skin or Film of *Inck*, Grease or other filth which may stick to the *Face*, or get into the hollows of the *Letter*, he with the point of a Needle picks them out: But if many be gotten in, he takes off the *Form* and Washes it, as shall hereafter be shewed.

And though he every other Sheet overlook the *Heap* (as was said before) yet his *Companion* that *Pulls*, by an habitual use casts his eye upon every single Sheet; Yet rarely hinders his riddance by it, for while he is taking the Sheet off the *Tympan*, he gives a quick spreading glance upon it, and lays it down, as was shewed ¶ 15. of this §, unless he perceive somewhat to mend: For then he lets it lye on the *Tympan* till he has mended what was amiss.

And that he may *Take Inck* more equally, to keep the *Balls* of an equal Fatnes, he keeps the *Rubb'd out Inck* on the *Inck-block* of an equal Fatnes; which to do, he with the under-edge of the bottom of the *Brayer*, draws often from the mass of *Inck* a small, (and as near as he can guess) an equal quantity of *Inck*, viz. about the quantity of a Pea, and with the *Brayer* Rubs and disperses that *Inck* of an equal thickness, all over the hither corner of the *Inck-block*. While this is doing he holds the *Balls* upright on one another

another in his Left Hand, leaning the Handle of the uppermost *Ball-stock* against his Breast.

The equal and often *Taking* of *Inck* in a small quantity, and constant *Distributing* of the *Balls*, is the onliest means to keep the *Heap* throughout of an equal Colour, and to avoid *Beating* of *Fryers*.

5. If he meets with naughty Sheets in his Work; as torn, or stain'd, &c. he Prints them not, but throws them under the *Paper-bench*; and if any crease or wrinkles be in any Sheet, he laying the backs of his four Left Hand fingers upon a smooth place in the Sheet, rubs with the backs of the Nails of his Right Hand Fingers from-wards him upon the wrinkles, till he have smoothened them.

6. And though his constant care is to Lay every particular Sheet even upon the *Heap*, yet it often happens either through *White Pages* that may come in the *Form*, which because not Printed lye solid on one another, the unequal pressing of one side or end of the Paper, or the unequal Bearing of the *Plattin* on one side or end of the *Form*; I say it often happens by these accidents, that the *Heap*, as it grows higher is on one part of the Sheet raised above, and on another part sunk below an Horizontal level: It is raised higher on that side or end of the *Heap* most prest in the *Tympan*, and by consequence makes the Paper there more Huffie; Because deep pressure of the *Letter* into the Paper below the common level of the Sheet bears the Paper off from the *Heap*, on the underside the Sheet; and the greater the number of Sheets are thus Printed off and laid on the *Heap*, the more that side or end of the *Heap* shall Rife:
And

And by the Rule of Contraries, when *White Pages* come in the *Form*, the greater number of Sheets laid on the *Heap*, shall where those *White Pages* lye, make the *Heap* lower in that place, because they clap folider together, for want of Printing the Paper through the backside level of each Sheet: So that the small un-level lying of every Sheet, though unperceptable, in a small number of Sheets, makes each Sheet incline to the lowest side of the *Heap*, and as the *Heap* accumulates heighth, throws the *Heap* more or less towards the dripping side, or end over the bottom of the *Heap*.

To remedy which, he claps the insides of both his Hands against both the ends of the *Heap*, but more forcibly against the Hanging over end towards the other end, till he has drove the *Heap* into an upright position.

If either of the sides hang over, he with the inside of his Left Hand commonly against the farther side of the *Heap*, and the outside of his Right Hand fingers on the hither side the *Heap*, either draws the hanging over side towards him with his Left Hand, or thrusts it from him with his Right Hand fingers, as aforesaid, while his opposite Hand does the office of a stop, that it be not drawn too forward, or thrust too much backward. Then where the *Heap* rises above the Level, he with the inside flats of one or both of his Hands presses it down into an Horizontal Plain.

7. If it be a *Reteration* he Works, and a great Number is laid on, he uses a *Tympan-cloath* instead of a *Tympan-sheet*: This *Tympan-cloath* is a Fine and even

even Linnen Cloath, about an Inch or two larger on every side than the Paper he Works on: He Wets this Cloath and wrings the Water out again, so that it remains only moist: Then lays his Cloath instead of his *Tympan-sheet*, and Pastes the corners of the under side of it to the *Tympan*, and Works upon it as on a *Tympan-sheet*.

One reason why he uses a Cloath to Work the *Reteration* on rather than a Sheet of Paper, is, because a Sheet of Paper quickly wears out, which a Cloath will not do. Another reason is, that when the *Inck* that wrought off the *White Paper* Sets off upon the *Tympan Cloath*, it may in clean *Ly* be washt clean again: For a good *Press-man* will not Work on a foul *Tympan Cloath* or (if he use no Cloath) on a foul *Tympan-sheet*, because as the *Inck* of the *White-paper* aforesaid, set off on the *Tympan Cloath*, so the more the *Tympan Cloath* has gathered *Inck* from the *White-Paper*, the more it will Return or give back again, towards the besmearing of every Sheet that is Printed on it.

The reason why the *Press-man* does not use a Cloath to Work the *White Paper* with, is, because in Working the *White-Paper*, the use of the *Tympan-Sheet* is principally to lay all the Sheets of the *Heap* even by, as being of the exact size with all the rest of the *Heap*, which a *Tympan-Cloath* is not, nor could it, without great trouble, be reduced to that size by the *Press-man*, or if reduced to that size, without much difficulty be laid even or square on the *Tympan*: Because the *Cloath* when *Wet*, will be hard to be kept straight and square, but every side will

will naturally run into irregularities, which a Sheet of *White Paper* will not do.

8. Sometimes, through the loose *Hanging* of the *Plattin* on its *Cords*, or through the much wearing of the *Hose*, or the *Garter*, or the *Worms* in the *Nut* and *Spindle*, or the irregular wearing of the *Toe* of the *Spindle* in its *Nut*, or too much play of the *Tennants* of the *Head* in their *Mortefesses*, or the irregular drynes of the *Tympan*, or through irregular *Running in* of the *Carriage*, It will happen that the *Letter* will *Double* upon the Sheets, that is, Print double.

If the loose Hanging of the *Plattin* be the cause, it is easily mended by turning about the *Female Screws* fitted to the tops of the *Hose*, as was shewed ¶ 4. of this §.

If the *Hose* be worn, or the square holes the *Hose* Works in, it may for the present be botcht up by putting Scabboards between the *Hose* and the square holes of the *Till*; but to mend it perfectly either another *Till* must be made, or a new *Hose*, or both.

If the *Garter* be worn too wide; the Smith must either mend the Old, or make a new one.

If the *Worms* of the *Nut* or *Spindle* be worn, the *Spindle* must be examin'd by the Smith, and made true, and have a new *Nut* Cast on it.

If the *Toe* of the *Spindle* and its *Nut*, or either of them be worn irregularly, it is Smiths Work to mend.

If the *Tennants* in the *Head* have too much Play in their *Mortefesses*; which though it seldom happens, yet if the *Head* were not made of well seasoned Stuff, the *Tennants* may be subject to shrink, and so have too

too much play. There is no substantial remedying this fault, but by making a new *Head*.

If an unproper temperature of the *Tympan* be the cause; that is, when it is dry in one place and moist in another, the dried place may by its spring force the Paper against the *Face* of the *Letter*, and in part Print it before it come to feel the force of the *Plattin*; (but this is rather slurring than *Doubling*) and when the force of the *Plattin* does come, the spring in the dried part will again remove the Paper, and the force of the *Plattin* gives its full Impression where the Paper is thus removed, but when it is real *Doubling*, it happens generally on the whole Sheet.

This *Doubling* or *Slurring* is mended, by reducing the dryest part of the *Tympan* to an equal moist temperature with the moistest.

Doubling often happens in the middle of the *Form*, and the reason is, because the foreside of the *Plattin* Prints beyond the middle of the *Form* at the first *Pull*, and the hindside of the *Plattin* by the *Second Pull* reprints part of the *First Pull*: So that a Spring in the *Tympan* removes the Paper in this interval of Time.

This fault is mended by exact observing the *Running in* of the *Carriage*.

Doubling may also happen by the too loose and flapping straining of the *Tympan*, when it was first *Drawn*.

This cannot be mended without taking the *Tympan* off, and *Drawing* on a new one.

A *Press-man* having *Pull'd* a Sheet, may by some accident (either of Object or Discourse) let it ly on the *Form*

Form after he has *Run-out* the *Carriage*, and afterwards forget it was *Pull'd*, yet may perhaps lift the *Tympan* a little off the *Form*, which lifting off (if the *Joynts* are not very good) will remove the Sheet, if then he *Pull* it again, it will *Double*.

This fault because it is but an accident I shall pass by, and only say,

If the *Joynts* are so faulty (as sometimes Old *Joynts* are) that the *Press-man* cannot keep *Register* with them, the Smith must make new or mend the Old.

9. When the *Press-man* leaves Work at Noon, he draws half the Nails out of the Balls, and takes the Wooll out: Then doubles the loose half of the *Leather* over the remaining Nail'd-on half, with the *Incky fides* of each half next each other, and Rowls up the *Leathers* close, and laies them in a Bowl or Pan of Water to Soak till he has Din'd.

He also covers the *Form* with the *Tympan*, to keep it from dust or filth that may fall on it: And takes out the *Blankets* and lays them on the *Heaps*: And with a *Spunge* Wet in Water besprinkles the backside of the *Tympan*, to Soak it whiles he is at Dinner.

Coming again to his Work afternoon, he takes the *Handles* of the *Ball-stocks* between his Thighs, (being seated as before, when he knockt up the *Balls*, ¶ 10.) to hold them fast, and he takes the turn'd down backsides of the *Ball-leathers* in both his hands, (for the other side being all over Black, would black his Hands) and rubs them between his Fingers very well, to supple them. Then squeezes and Wrings the Water well out again; and *Teizes* his Wooll, by opening

opening all the hard and almost matted knots he finds in it: but he does not pull the Wooll or hardned knots in it assunder from the whole mass of Wooll: But endeavours to keep the Wooll of each *Ball* intirely connected in the same mas, and only opened, to Loosen and Soften it: For pulling the knots to pieces, would tear the Wooll, and soon make it unfit for use. Having *Teazed* the *Wooll* he *Knocks up* his *Balls* again, as I shewed in ¶ 10.

Then he goes to the *Tympa*, and squeezing his *Spunge* as dry as he can, he rubs it over the backside of the *Tympa*, to Suck up the Water, that may lye on it.

Then taking the *Blankets*, he rubs them between both his Hands to soften them; for we must suppose that the Mornings *Pulling* on them has compacted and hardned them: being well Rub'd, he lays them in the *Tympa* again, as was shewed before in ¶ 7. and falls again to his Afternoons train of Work.

Having wrought all day, though his *Form* be not *Wrought off*, it may yet be *Foul*, so that he must *Wash* it: Nay, in small *Letter* a good *Press-man* will *Wash* his *Form* twice a day: Wherefore he calls to the Boy to Heat the *Ly*, somewhat before he is ready for it, about a Heating time: And having a *Shooting-stick* lying by him on the *Till* or some other convenient place, drives every *Quoin* between the *Furniture* and the *Chase* fast up; least they may have somewhat shrunk, or else started back: Then with a piece of Chalk he makes a score on the two farthermost *Corners* of the *Carriage*; and through the *Quoins* driven against them, and upon the two *Corners* of the *Carriage*

Carriage of the *Tympan* and their *Quoins*, and lets the *Quoins* ly; but he *Unlocks* all the opposite *Quoins*, and takes them out of their places; laying those *Quoins* that he takes from between the fore-end of the *Carriage* and the *Chase* on the hithermost upper long side of the *Plattin*, the hithermost *Quoin* on the hithermost fide of the *Plattin*, and the farthermost *Quoin* on the farthermost side of the *Plattin*; with their small ends towards him, and fromwards him as they lay on the *Carriage*. The *Quoins* that he takes from the hither side of the *Carriage*, he lays on the hithermost Return side or end of the *Plattin*; that on his Left Hand on the *Carriage*, towards the farther Corner of the *Plattin*, and that *Quoin* on the Right Hand on the *Carriage*, towards the hither corner of the *Plattin*, with their small ends towards the Hand they lay on, on the *Carriage*.

Having taken out and placed these four *Quoins*, he tries if the *Form* will *Rise*, as was shewed § 22. ¶ 7. then takes up the *Form*, and carries it to the *Ly-Trough*, and lays it in it, even as the *Compositor* brought the *Form* to the *Press*, and laid it on the *Press-stone*. § 22. ¶ 7. and taking the *Ly Kettle*, or *Chafer*, in his Left Hand pours the *Ly* Scalding hot place by place over the whole *Form*: And then with the ends of the Hair of the *Ly Brush* rubs gently over the whole *Form*: And as he thus *Rubs* with his Right Hand Rocks the *Ly-Trough* a little on its Axis, that the Body of *Ly* may accompany the *Ly-Brush* in its progress from the hither to the farther side of the *Form*: And thus he *Washes* the *Form* still on, till he perceive the *Face* of the *Letter* purely clean.
Then

Plate 31



Then he lets the *Ly* out again into the *Ly-Kettle* at the Hole and Pipe in the Left Hand hither corner of the *Ly-Trough*: and stopping the hole again, sets by the *Ly-Kettle*. Then with a Dish or two of fair Water he *Ringes off* the Laver of the *Ly* that may ly on the *Face* of the *Letter*, and rears up the *Form* and throws a Dishful or two of fair Water on the back-side of it, to *Rince* it also. Then takes the *Form* out of the *Ly-Trough*, and sets it by, shelving with its *Face* against the Wall, to Dry.

If the *Heap* be *Wrought off*, he lets the *Compositer* know it, to take Charge of it.

Having *Wrought off* his *Heap*, he takes it off the *Paper-bench*, and sets it by on the floor, covering it with a *Waste-sheet*: And gives notice to the Boy, or to the *Ware-house-keeper*, to fetch it away and *Hang it up* to Dry.

Then he draws the *Balls*, and takes the *Blankets* out of the *Tympan* (as at Noon:) And if he have Paper to *Wet*, *Wets* it as was shewed ¶ 9. of this §.

§ 25. *The Office of the Warehouse-keeper.*

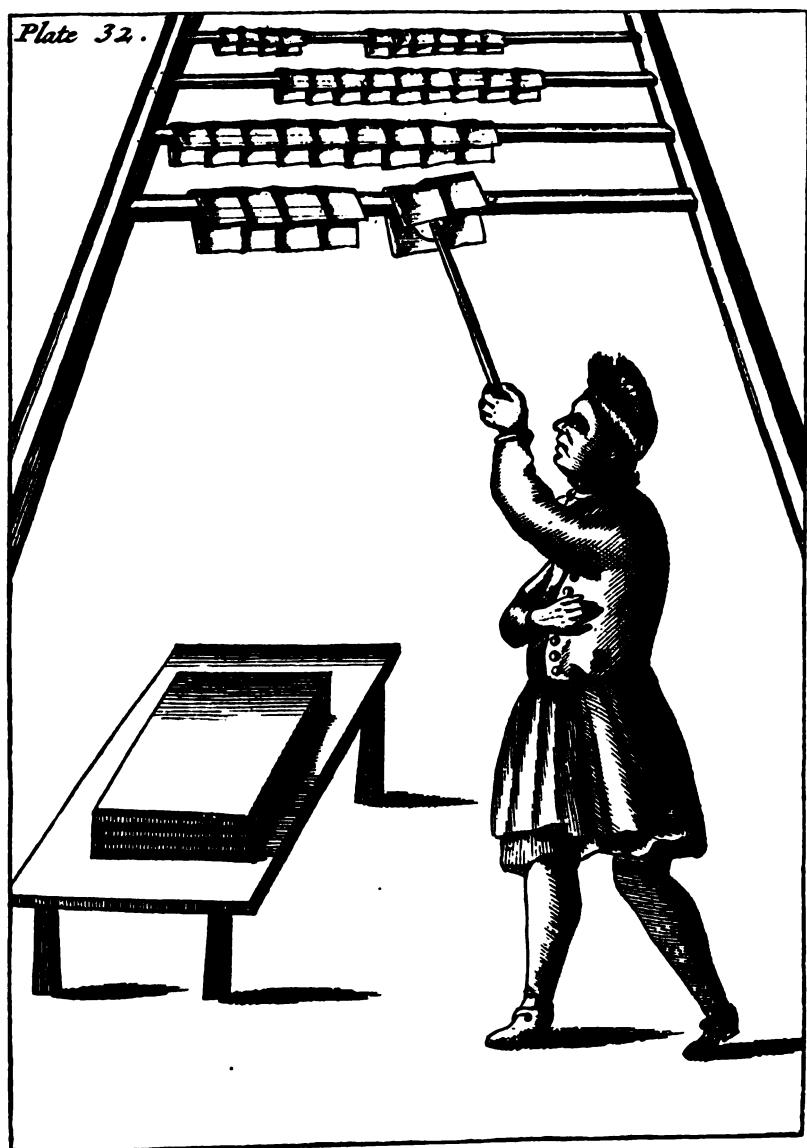
¶ 1. *Of Hanging up Paper.*

THE *Warehouse-keeper* takes the *Heap* out of the *Press-room*, and carries it into the *Warehouse*, or other *Drying-place*, and setting it upon a *Form* or *Bench* of convenient heighth, with an end of the *Heap* from him, he takes the *Handle* of the *Peel* in his Left Hand, and lays the *Board* flat down upon the *Heap*, with the Left Hand side of the *Board* towards

wards the Left Hand side of the *Heap*, and so as its upper edge may reach to almost three quarters of the length of the Sheet, and that the Right Hand end of the *Peel* may ly on the middle of the *Heap*: Then with his Right Hand he doubles over so much of the *Heap* as he thinks good, perhaps about a *Quire*, or half a *Quire*, or about seventeen Sheets, more or less, either as he can allow them time to *Dry*, or have room on his *Racks* to *Hang* them on. Having thus doubled his first *Doubling* on the *Heap*, he removes the Left Hand half of the *Peel* almost off the *Heap*, viz. to about two Inches within the Left Hand side of the *Heap*, and doubles, as before, a second *Doubling* to hang over the first *Doubling*, towards the Left Hand about two Inches, as aforesaid, on the *Peel*, and as near as he can guess, the same number of Sheets. And having these two *Doublings* on his *Peel*, he takes the *Peel* off the *Heap*, and holding the *Handle* a little aslope, that the *Shorter Folding-over* of the Sheets may open from the *Peel*, he lifts it up, and places it at one end of his first *Rack*, and lets it hang on it, by drawing the *Peel* from under the Paper. In like manner he Loads and unloads his *Peel* again successively, till he have *Hung up* the whole *Heap*. See Plate 31.

Note, that the sides of the Sheets do not hang against one another, but lap over one another, as you may see by Plate 31. Nor are they *Hung up* to *Hang* with their edges against the side of the former *Hanging-up*, but to lap over, so as every Right Hand *Doubling* may lap about two Inches over the Left Hand *Doubling*; that when the *Books* are taken down,
the

Plate 32.



the *Warehouse-keeper* clapping the flat side of his *Peel* against the Right Hand edge of the Paper, slides several *Doublings* over one another (perhaps three or four:) And putting the *Peel* under them, takes them off the *Racks*, and lays them on the *Heap* again, on a clean Waste Paper, and sets the *Heap* orderly by, till it comes to be *Gather'd*.

The *Warehouse-keeper* is also very careful to lay all the Sheets, so as the respective *Signatures* of every Sheet may ly exactly over the respective *Signature* of the first Sheet, lest when the *Books* come to be *Gathered*, some Sheets may be *Turned*, which will give him a great deal of trouble to *Turn* them right when he *Colations* the *Books*.

¶ 2. *Of Laying the Heaps.*

Laying the Heaps is to place them on Benches or Forms of a convenient Height, in an orderly *Signatural Succession*. By an orderly *Signatural* succession, I mean the first *Signature*, which most commonly is A (and therefore shall be so accepted) be placed on the Left Hand of the Bench, with either the Side or Foot of the *Page*, as the *Column* requires, that hath the single *Signature* A at the bottom of it upwards, and towards the hither side of the Bench. On the Right Hand side of the *Heap* A is B, and next it C, in like order D E F, &c.

¶ 3. *Of*

¶ 3. Of Gathering of Books.

Gathering of Books is to take one Sheet off every *Heap*, beginning at the last *Heap* first, *viz.* at the Left Hand end of the Range. The *Gatherer* takes it off with his Right Hand, and disposes the hither end of the Sheet into his Left Hand, clapping his Left Hand Thumb upon the middle of the Sheet, to hold it fast. Then he takes a second Sheet off the second *Heap* from the Left Hand, *viz.* towards the Right; and lays the second Sheet on the first, and so successively a third, a fourth, a fifth, &c. till he has *Gathered* the last Sheet on his Right Hand; still observing to lay the middle of each Sheet under his Thumb, and all the single *Signatures* on each Sheet orderly and successively on one another.

Thus he *Gathers* on, till one of all the *Heaps Comes off*; which when it does, he Doubles or Quires up all the other *Heaps*, and lays them by till he can *Bundle* and *Tye* them up; which when he has also done, he writes upon them *Imperfections* of (the *Title of the Book*) and Writes on it the *Signature* of the Sheet that is Wanting, and sets it by in a convenient place of the *Warehouse*, that he may have recourse to it on any occasion.

Though I shewed how he *Gathered* the *Books*, yet shewed not how he *Knocks them up* and *Folds* them: Wherefore,

Having thus *Gathered* one *Book*, he *Knocks it up*, that is, he carries it to a Table provided on purpose

pose near him; and taking the ends of the *Book* between the two Bows of the Thumb and Fore-finger of each Hand, he grasps the ends loosely between them, and placing the hither long side or edge of the *Book* on the plain of the Table, he lifts the whole *Book* a little above the plain of the Table, (about an Inch or two, more or less) and while the whole *Book* is held loosely by its ends, lets it fall gently down on the Table, that the edges of such Sheets as may stand out, or lower than the rest, may be drove even with the rest of the edges of the *Book*, and also that the edges of such Sheets as may lye above the edges of the *Book* may be joulted downwards, and lye even in the same Range with the rest of the edges.

And as he is *Knocking up* the lower edge of the *Book*, he at the same time evens the two ends of the *Book*, by thrusting the Bows of his Thumbs and Fingers against the ends of the *Book*, which being loosely grasp'd, and the Bows of his Thumbs and Fingers bearing pretty stiff towards each other; will drive in the ends of such Sheets as may stick out at either end; and so even the ends of the *Book* at the same time.

Having thus even'd all the edges, he lays the *Book* flat down on the Table, and holding one end of it stiff and tight in his Left Hand, he rubs the whole flat of his Right Hand hard upon the upper Sheet, to pres it and all the other Sheets as close together as he can; then takes it up, and gives the edges another or two gentle *Knocks*, as before; and then *Folds up*, or *Doubles* the *Book*, according to its respective *Column*. If

If it be *Folio, Quarto, Octavo or Sixteens*, he *Folds* it in the *Short Cross*; but if it be *Twelves, Eighteens, Twenty-fours*, he *Folds* it in the *Long Cross*.

But most times before he *Folds* the *Books* he will *Colation* them: (as shall be shewed by and by:) therefore having *Gathered* the *Book*, he lays it by on a Sheet of Waste Paper, and *Gathers* a second *Book* as he did the first, and lays that flat open on the first, then *Gathers* a third, fourth, fifth *Book, &c.* as before, and lays them successively on each other, till he have raised an *Heap* of *Books* so high, that he grows cautious of laying more on, lest its heighth should exceed his management. Then *Gathers* on, and raises another *Heap* or *Heaps* till one of the *Sig-natures* comes off.

¶ 4. Of Colationing Books.

The *Colationing of Books*, is,

First, To examine whether the whole number of Sheets that belong to a *Book* are *Gathered* in the *Book*.

Secondly, To examine that two Sheets of one sort are not *Gathered*.

Thirdly, To examine whether the proper *Signa-ture* of every Sheet lye on its proper corner of the *Gathered Book*.

To do this, The *Colationer* provides himself with a *Bodkin*; which is nothing else than a pretty thick Sowing Needle, (most commonly broken-eyed,) having its thick end thrust fast into a round piece of Wood, about the thickness of a Tobacco-Pipe, and about three or four Inches long.

Now

Now having the *Heap of Gathered Books* before him, with the single *Signature A* lying upwards on his Right Hand, and his Left Arm cross the *Heap*, and his Hand near the *Signature corner*, with his *Bodkin* in his Right Hand, he pricks up the corner of the first Sheet A, and at the same moment he pricks it up, slips the Balls of his two Fore-fingers of his Left Hand, and secures it from falling back again on the *Gathered Heap of Books* between his Thumb and hinder Joyn of his Fore-finger, and immediately pricks into the Sheet B, casting his Eye upon the *Signature*, as well to see that it is B, as to see that it is singly B, and not B 2, B 3, &c. For if the single *Signature* lye not on the same corner of the *Heap*, the Sheet must be turned till it do. In like manner he picks up and receives C D, &c. still casting his Eye that it be the right *Letter*, and single *Signature*, as aforesaid.

If he finds two Sheets of the same *Signature*, he takes one out and lays it by, or else on the *Heap*, if they be not all *Gathered*.

If he finds one Sheet wanting, he fetches that Sheet from the *Heap*; or if he want it at the *Heap* the *Book* is laid by as *Unperfect* till he have *Colationed* the whole *Impression of Books*, to see if he can make it *Perfect* with some other *Book*, that may have two of the same Sheets *Gathered* in it.

Having examined that his *Book* is *Perfect*, he *Knocks and Folds it up*, as was shewed in the last ¶.

Having *Gathered, Colationed* and *Folded* these *Books*, he *Tells them*, to see how the *Impression Holds out*; and as he *Tells them*, he lays a set number of *Books*

Books (if the *Books* be *Thick*, five, if *Thinner*, Ten, if very *Thin*, twenty five or fifty) with the *Folded Side* or *Back* one way, and the same *Number* of *Books*, with the *Folded* or *Back-side* the other way, *viz.* the edges of the latter number of *Books* upon the *Backs* of the former *Number*: As well to distinguish and Count the *Number* of *Books* readily, as to keep the Bundle in a flat and Horizontal position. For if the *Backs* of the *Quired Books* in a Bundle, should lye all one way, the *Fold* of the *Back* being more or less hollow in the middle of each *Book*, will in a *Number* of *Books*, by springing upwards, mount the *Backs*; and consequently the edges of the *Books* in the *Bundle* will be depressed, so that in a great *Bundle* the *Books* will be subject to slide off one another.

These *Books* being thus Counted, he sets them by on Waste Paper in convenient Piles, *viz.* Piles of about three or four Reams high (according as the Paper may be thicker or thinner) he sets them by (I say) in Piles of equal Numbers, Range by Range, till the whole *Impression* is set by.

And before he Tyes them up, he puts them into the *Standing Press*, placing in it so many *Books* as the *Press* will hold, both in width and Height; observing to set in every *Pile* he puts Range by Range into the *Press*, an equal number of *Books*, that each *Pile* may equally feel the force of the Screw.

Then with a strong Iron Bar he turns about the *Spindle* as oft he can, with his main Strength to Squeeze and *Press* the *Books* as close and tight as he can together: and so lets them stand in *Press* about a Day

Plate 33



a Day and a Night. Then takes them out, and in like manner puts in more *Books*, till the whole Impression is *Printed*. See Plate 32.

As he takes each number of *Books*, he Tyes them up with Packthred, lays a Waste Paper under and upon each *Bundle*; and if the *Master-Printer* Printed the *Impression* for Himself, he writes the Title of the *Book*, and number of the *Books* on the uppermost Waste Paper, and sets them by square and orderly on the Shelves in the *Warehouse*, to deliver them out according to the *Master-Printers* order. But if the *Impression* were Printed for an Author, or a Book-seller, he sends them to the Authors or Book-sellers, without writing on the uppermost Waste Paper.

¶ 5. Of Setting out Paper, and Culling the Cording Quires.

Each Ream of Paper contains twenty Quires: These twenty Quires are by the Paper-makers so disposed that the Back or Doubling of each Quire lies upon the opening or edges of the next Quire: For reasons given in the last ¶.

Two of the twenty Quires in a Ream are called *Cording Quires*, viz. the two *Out-side Quires*; because the whole Ream is Corded or Tyed up between them. They are also called *Casse Quires*, because they serve for Cases to the Ream. These Quires are by the Paper-maker made up of torn, wrinckled, stained, and otherwise naughty Sheets; yet does not perhaps the whole Quire consist of such Sheets, but commonly some

some good Sheets are in *Culling* found among them, as shall be farther shewed by and by.

The *Warehouse-keeper* therefore when he *Sets out* Paper, lays by the uppermost *Cording Quire*, and then nimbly snatches with his Right Hand at the back of the next Quire, and if the back lye towards him, draws it into his Left Hand with the edges of the Quire towards his Fingers; but if the back lye from him, nimbly turns it while it is coming to his Left Hand, and so again nimbly snatches at the back of the succeeding Quires, placing their backs all one way on the First Quire in his Left Hand, till he have Counted or taken off of the Ream a *Token*; which *Token*, if it be set out for *Half a Press*, viz. a *Single Press-man*, is generally but five Quires, and is indeed often called *Half a Token*: But if it be for an *Whole Press*, it contains Ten Quires. This *Token* he lays by near him, upon a Waste Sheet of Paper, and again applies himself to *Set out* the next *Token* in the same manner, but lays the next *Token* with the backs of the Quires over the edges of the former *Token*, and thus *Sets out* so many *Tokens* as his *Heap* requires, yet always consider how his Paper *Holds out*, whether five and twenties, or but four and twenties: If it *Holds out* five and twenties, he *Sets out* in every Fourth, Fifth, or Sixth *Token* Eleven Quires, to secure the *Impression* to *Hold out*. If but four and twenties, he *Sets out* Eleven Quires, in every second *Token*, and at last a Quire more to the whole *Heap* to make good the wanting Sheets of every Quire, and to make *Proves*, *Revises*, *Register-Sheets*, *Tympan-Sheets*, and to supply other accidents that may happen at the *Press*, either

either by naughty Sheets, or Faults committed in *Beating*, *Pulling*, *Bad Register*, &c. for all or any of these accidents that happens to a Sheet, the *Press-man* doubles it, and lays by in the *Heap* as Waste, as I shewed § 24. ¶ 18. (4) and still he remembers, as aforesaid to lay by the two *out-side Quires* of every Ream; and at last lays on the *Heap* another Waste Sheet of Paper, and so brings it to the *Press* to be *Wet*.

The *Culling the Cording Quires*, is, to examine every Sheet one by one. To do it, he lays the *Cording Quires*, or many *Cording Quires* open before him against the Light, and takes up every Sheet successively and observes the goodness of it: Such Sheets as he finds good, he lays on his Right Hand, and the Bad on his Left. If a Sheet have but a little corner torn off, *viz.* so much as he judges the *Book-binder* would take off with his *Plow*, to make the *Leaf* square with other *Leaves*, he accounts that a good Sheet: But if more be torn off, he lays it by for Bad; and so he does Wrinkled and stain'd Sheets.

Having thus *Cull'd* all the *Cording Quires*, he tells out the good Paper into Quires, allowing five and twenty to the Quire, if the Quires of the Ream hold out five and twenty; or else but into four and twenty. And the good Paper thus *Cull'd*, he tells into an *Heap* or *Heaps*, as far as it will go.

But yet the careful *Warehouse-keeper* will not give the *Press-man* this *Culd* Paper to Print at the beginning or end of a *Book*, but disposes that *Heap* or *Heaps* so as they may be used about the middle of the *Book*: For though we call'd it good Paper, yet it very rarely

ly happens to be so beautiful as the *Infide Quires*.

The Bad Paper he also *Tells out* into Quires, but allows no more than four and twenty Sheets to the Quire, because it is commonly set by in the *Warehouse* to be sold.

It is also the Office of the *Warehouse-keeper* to keep a Day Book, and in it to set down what Books he Sells, and for how much, and to whom, and whom by order of the *Master-Printer* he Trusts with Books, and for how long Time; that so the *Master-Printer* may as oft as he pleases have an account how the *Impression*, or part of it, is disposed of.

(*As an Appendix.*) *Ancient Customs used in a Printing-house.*

Every *Printing-house* is by the Custom of Time *out of mind*, called a *Chappel*; and all the Workmen that belong to it are *Members of the Chappel*: and the Oldest Freeman is *Father of the Chappel*. I suppose the stile was originally conferred upon it by the courtesie of some great Churchman, or men, (doubtless when Chappels were in more veneration than of late years they have been here in *England*) who for the Books of Divinity that proceeded from a *Printing-house*, gave it the Reverend Title of *Chappel*.

There have been formerly Customs and By-Laws made and intended for the well and good Government of the *Chappel*, and for the more Civil and orderly deportment of all its Members while in the *Chappel*; and the Penalty for the breach of any of these

these Laws and Customs is in Printers Language called a *Solace*.

And the Judges of these *Solaces*, and other Controversies relating to the *Chappel*, or any of its Members, was plurality of Votes in the *Chappel*. It being asserted as a Maxim, *That the Chappel cannot Err*. But when any Controversie is thus decided, it always ends in the Good of the *Chappel*.

1. Swearing in the *Chappel*, a *Solace*.
2. Fighting in the *Chappel*, a *Solace*.
3. Abusive Language, or giving the Ly in the *Chappel*, a *Solace*.
4. To be Drunk in the *Chappel*, a *Solace*.
5. For any of the Workmen to leave his Candle burning at Night, a *Solace*.
6. If the *Compositor* let fall his *Composing-stick*, and another take it up, a *Solace*.
7. Three *Letters* and a *Space* to lye under the *Compositors Case*, a *Solace*.
8. If a *Press-man* let fall his *Ball* or *Balls*, and another take it up, a *Solace*.
9. If a *Press-man* leave his *Blankets* in the *Tympan* at Noon or Night, a *Solace*.

These *Solaces* were to be bought off, for the good of the *Chappel*: Nor were the price of these *Solaces* alike: For some were 12 d. 6 d. 4 d. 2 d. 1 d. ob. according to the nature and quality of the *Solace*.

But if the Delinquent prov'd Obstinate or Refractory, and would not pay his *Solace* at the Price of the *Chappel*; they *Solac'd* him.

The manner of *Solacing*, thus.

The Workmen take him by force, and lay him on his

his Belly athwart the *Correcting-stone*, and held him there while another of the Work-men, with a Paper-board, gave him 10*l. and a Purse*, viz. Eleven blows on his Buttocks; which he laid on according to his own mercy. For Tradition tells us, that about 50 years ago one was *Solaced* with so much violence, that he presently Pissed Blood, and shortly after dyed of it.

These nine *Solaces* were all the *Solaces* usually and generally accepted: yet in some particular *Chappels* the *Work-men* did by consent make other *Solaces*, viz.

That it should be a *Solace* for any of the Work-men to mention Joyning their Penny or more apiece to send for Drink.

To mention spending *Chappel-money* till *Saturday Night*, or any other before agreed time.

To Play at *Quadrats*, or excite any of the *Chappel* to Play at *Quadrats*; either for Money or Drink.

This *Solace* is generally Purchas'd by the Master-Printer; as well because it hinders the Workmens work, as because it Batters and spoils the *Quadrats*: For the manner how they Play with them is Thus: They take five or seven more in *Quadrats* (generally of the *English Body*) and holding their Hand below the Surface of the *Correcting Stone*, shake them in their Hand, and toss them up upon the *Stone*, and then count how many *Nicks* upwards each man throws in three times, or any other number of times agreed on: And he that throws most Wins the Bett of all the rest, and stands out free, till the rest have try'd who throws fewest *Nicks* upwards in so many throws; for all the rest are free: and he pays the Bett.

For

For any to *Take up a Sheet*, if he receiv'd *Copy-money*; Or if he receiv'd no *Copy-money*, and did *Take up a Sheet*, and carryed that Sheet or Sheets off the Printing-House till the whole Book was Printed off and Publisht.

Any of the Workmen may purchase a *Solace* for any trivial matter, if the rest of the *Chappel* consent to it. As if any of the Workmen Sing in the *Chappel*; he that is offended at it may, with the *Chappels* Consent purchase a penny or two penny *Solace* for any Workmans singing after the *Solace* is made; Or if a Workman or a Stranger salute a Woman in the *Chappel*, after the making of the *Solace*, it is a *Solace* of such a Value as is agreed on.

The price of all *Solaces* to be purchased is wholly Arbitrary in the *Chappel*. And a Penny *Solace* may perhaps cost the Purchafer Six Pence, Twelve Pence, or more for the *Good of the Chappel*.

Yet sometimes *Solaces* may cost double the Purchase or more. As if some *Compositor* have (to affront a *Press-man*) put a Wisp of Hay in the *Pressmans Ball-Racks*; If the *Press-man* cannot well brook this affront, he will lay six Pence down on the *Correcting Stone* to purchase a *Solace* of twelve Pence upon him that did it; and the *Chappel* cannot in Justice refuse to grant it: because it tends to the *Good of the Chappel*: And being granted, it becomes every Members duty to make what discovery he can: because it tends to the farther *Good of the Chappel*: And by this means it seldom happens but the Aggressor is found out.

Nor did *Solaces* reach only the *Members of the Chappel*:

Chappel, but also Strangers that came into the *Chappel*, and offered affronts or indignities to the *Chappel*, or any of its Members; the *Chappel* would determine it a *Solace*. Example,

It was a *Solace* for any to come to the *Kings Printing-house* and ask for a Ballad.

For any to come and enquire of a *Compositor*, whether he had News of such a Galley at Sea.

For any to bring a Wisp of Hay, directed to any of the *Press-men*.

And such Strangers were commonly sent by some who knew the *Customs of the Chappel*, and had a mind to put a Trick upon the Stranger.

Other Customs were used in the *Chappel*, which were not *Solaces*, viz. Every new Workman to pay half a Crown; which is called his *Benvue*: This *Benvue* being so constant a Custome is still lookt upon by all Workmen as the undoubted Right of the *Chappel*, and therefore never disputed; yet he who has not paid his *Benvue* is no Member of the *Chappel*, nor enjoys any benefit of *Chappel-Money*.

If a Journey-man Wrought formerly upon the same Printing House, and comes again to Work on it, pays but half a *Benvue*.

If a Journey-man *Smout* more or less on another Printing House, and any of the *Chappel* can prove it, he pays half a *Benvue*.

I told you before that abusive Language or giving the Lye was a *Solace*: But if in discourse, when any of the Workmen affirm any thing that is not believed, the *Compositor* knocks with the back corner of his *Composing-stick* against the lower Ledge of his *Lower Case*,

Cafe, and the *Press-man* knocks the Handles of his *Ball-stocks* together: Thereby signifying the discredit they give to his Story.

It is now customary that Journey-men are paid for all Church Holy days that fall not on a *Sunday*, Whether they Work or no: And they are by Contract with the Master Printer paid proportionably for what they undertake to Earn every Working day, be it half a Crown, two Shillings, three Shillings, four Shillings, &c.

It is also customary for all the Journey-men to make every Year new Paper Windows, whether the old will serve again or no; Because that day they make them, the Master Printer gives them a *Way-goose*; that is, he makes them a good Feast, and not only entertains them at his own House, but besides, gives them Money to spend at the Ale-house or Tavern at Night; And to this Feast, they invite the *Correcter*, *Founder*, *Smith*, *Joyner*, and *Inck-maker*, who all of them severally (except the *Correcter* in his own Civility) open their Purse-strings and add their Benevolence (which Workmen account their duty, because they generally chuse these Workmen) to the Master Printers: But from the *Correcter* they expect nothing, because the Master Printer chusing him, the Workmen can do him no kindness.

These *Way-gooses*, are always kept about *Bartholomew-tide*. And till the Master-Printer have given this *Way-goose*, the Journey-men do not use to Work by Candle Light.

If a Journey-man marry, he pays half a Crown to the *Chappel*.

When

When his Wife comes to the *Chappel*, she pays six Pence: and then all the Journey-men joyn their two Pence apiece to Welcome her.

If a Journey-man have a Son born, he pays one Shilling.

If a Daughter born, six Pence.

The Father of the *Chappel* drinks first of *Chappel Drink*, except some other Journey-man have a *Token*; viz. Some agreed piece of Coin or Mettle markt by consent of the *Chappel*: for then producung that *Token*, he Drinks first. This *Token* is always given to him who in the Round should have Drank, had the last *Chappel-drink* held out. Therefore when *Chappel-drink comes in*, they generally say, *Who has the Token?*

Though these Customs are no *Solaces*; yet the *Chappel* Excommunicates the delinquent; and he shall have no benefit of *Chappel-money* till he have paid.

It is also Customary in some Printing-houses that if the *Compositor* or *Press-man* make either the other stand still through the neglect of their contracted Task, that then he who neglected, shall pay him that stands still as much as if he had Wrought.

The *Compositors* are Jocosely call'd *Galley Slaves*: Because allusively they are as it were bound to their *Gallies*.

And the *Press-men* are Jocosely call'd *Horses*: Because of the hard Labour they go through all day long.

An Apprentice when he is Bound pays half a Crown to the *Chappel*, and when he is made Free, another half Crown to the *Chappel*; but is yet no Member of the *Chappel*; And if he continue to Work

Work Journey-work in the same House, he pays another half Crown, and is then a Member of the *Chappel*.

A *Founding-House* is also call'd a *Chappel*: But I suppose the Title was originally assum'd by *Founders*, to make a Competition with *Printers*.

The Customes used in a *Founding-House* are made as near as may be to those of a *Printing-house*: but because the Matter they Work on, and the manner of their Working is different, therefore such different Customes are in Use, as are suitable to their Trade, As

First, To call *Mettle Lead*, a Forfeiture.

Secondly, A Workman to let fall his *Mold*, a Forfeiture.

Thirdly, A Workman to leave his Ladle in the *Mettle* Noon or Night, a Forfeiture.

The Printers of *London*, Masters and Journey-men have every Year a general Feast, which since the re-building of *Stationers Hall* is commonly kept there. This Feast is made by four Stewards, *viz.* two Masters and two Journey-men; which Stewards, with the Collection of half a Crown apiece of every Guest, defray the Charges of the whole Feast; And as they Collect the Half-Crowns, they deliver every Guest a Ticket, wherein is specified the Time and Place they are to meet at, and the Church they are to go to: To which Ticket is affixed the Names and Seals of each Steward.

It is commonly kept on or about *May-day*: When, about ten a Clock in the Morning they meet at *Stationers Hall*, and from thence go to some Church thereabouts; Four Whifflers (as Servitudes) by two and

and two walking before with White Staves in their Hands, and Red and Blew Ribbons hung Belt-wise upon their left Shoulders. These go before to make way for the Company. Then walks the Beadle of the Company of *Stationers*, with the Companys Staff in his Hand, and Ribbons as the Whifflers, and after him the Divine (whom the Stewards before ingag'd to Preach them a Sermon) and his Reader. Then the Stewards walk by two and two, with long White Wands in their Hands, and all the rest of the Company follows, till they enter the Church.

Then Divine Service begins, Anthems are Sung, and a Sermon Preached to suit the Solemnity: Which ended, they in the same order walk back again to *Stationers Hall*; where they are immediately entertain'd with the City Weights and other Musick: And as every Guest enters, he delivers his Ticket (which gives him Admittance) to a Person appointed by the Stewards to receive it.

The Master, Wardens and other Grandees of the Company (although perhaps no Printers) are yet commonly invited, and take their Seats at the upper Table, and the rest of the Company where it pleases them best. The Tables being furnsh'd with variety of Dishes of the best Cheer: And to make the entertainment more splendid is Usher'd in with Loud Musick. And after Grace is said (commonly by the Minister that Preach'd the Sermon) every one Feasts himself with what he likes Best; whiles the Whifflers and other Officers Wait with Napkins, Plates, Beer, Ale, and Wine, of all sorts, to accommodate each Guest according to his desire. And to make

make their Cheer go cheerfuller down, are entertain'd with Musick and Songs all Dinner time.

Dinner being near ended, the Kings and the Dukes Healths is begun, by the several Stewards at the several Tables, and goes orderly round to all the Guests.

And whiles these Healths are Drinking, each Steward sets a Plate on each Table, beginning at the upper end, and conveying it downwards, to Collect the Benevolence of Charitable minds towards the relief of *Prinners* Poor Widows. And at the same time each Steward destributes a Catalogue of such Printers as have held Stewards ever since the Feast was first kept, *viz.* from the Year of Christ 1621.

After Dinner, and Grace said, the Ceremony of Electing new Stewards for the next Year begins: Therefore the present Stewards withdraw into another Room: And put Garlands of Green Lawrel, or of Box on their Heads, and White-wands in their Hands, and are again Usher'd out of the withdrawing Room by the Beadle of the Company, with the Companys Staff in his Hand, and with Musick sounding before them: Then follows one of the Whifflers with a great Bowl of White-wine and Sugar in his Right Hand, and his Whifflers Staff in his Left: Then follows the Eldest Steward, and then another Whiffler, as the first, with a Bowl of White-wine and Sugar before the second Steward, and in like manner another Whiffler before the Third, and another before the Fourth. And thus they walk with Musick sounding before them three times round the Hall: And in a fourth round the first Steward takes the

the Bowl of his Whiffler and Drinks to one (whom before he resolved on) by the Title of Mr. Steward Elect: And taking the Garland off his own Head puts it upon the Steward Elects Head. At which Ceremony the Spectators clap their Hands, and such as stand on the Tables or Benches, so Drum with their Feet that the whole Hall is filled with Noise, as applauding the Choice. Then the present Steward takes out the Steward Elect, giving him the Right Hand, and walks with him Hand in Hand, behind the three present Stewards another Round about the Hall: And in the next Round, as aforesaid, the second Steward Drinks to another with the same Ceremony as the first did; and so the Third Steward, and so the Fourth, and then all walk one Round more Hand in Hand about the Hall, that the Company may take notice of the Stewards Elect. And so ends the Ceremony of the Day.

This Ceremony being over, such as will go their ways; but others that stay, are Diverted with Musick, Songs, Dancing, Farcing, &c. till at last they all find it time to depart.

A

A

DICTIONARY,

Alphabetically explaining the abstruse
VVords and Phrases that are used in
Typography. VVhich also may serve as
an Index to direct to the most material
Concerns contained in this Volumn.

THough I give you a Dictionary of so many Words and Phrases as are mentioned in these *Exercises*, yet I do not exhibit this as a *Dictionary* so perfect, that all the obstruse Words and Phrases used among *Printers*, *Letter-cutters* and *Founders* are here exposed; for Words and Phrases many times offer themselves either as Discourse or Contemplation occurs: Therefore such Words and Phrases as have escaped my Consideration, will, I hope, be discovered by some Printer, or others, that may have a kindness for Posterity; not only in this Trade, but in all Trades and Faculties whatsoever: That so a *Dictionary* may in time be compleated, that may render so great a number of Words used in *England* by *English-men* intelligible; which now for want of a proper Repository to store them in, seem not only Aliens to our Nation, but barbarous to our Understandings.

A *Abre-*

A

Abreviations are Characters, or else marks on *Letters*, to signifie either a Word or Syllable. & is the Character for And, e is The abreviated, t is That abreviated; and several other such. Straight stroaks over any of the Vowels abreviates m or n. They have been much used by Printers in Old Times, to *Shorten* or *Get in Matter*; but now are wholly left off as obsolete.

Accented Letters are much used in *Latin Authors*, and more in *Greek*. The Vowels are only accented, and are called *Grave*, thus accented à; *Acute*, thus accented á; *Circumflex*, thus accented â; and *Deerecis*, thus accented ã.

Accents are Dashes or Marks over the Vowels.

Air-hole. See § 18. ¶ 1.

Ascending Gage. See § 12. ¶ 5.

Ashes. *Letter-Founders* call the *Skimmings* of their *Mettle*, and the *Sweepings* of their House *Ashes*; and save both, to send to the Refiners; who with their fierce Fire draw all the *Mettle* out of the *Ashes*. See *Fat Ashes*. See *Lean Ashes*.

Ash-hole. See § 18. ¶ 1.

Affidue is Thin Brass Plate, such as adorns *Bartholomew-Fair Hobby Horses*: *Founders* use it to *Underlay* the *Body*, or the *Mouth-piece*, &c. of their *Mold*, if it be too Thin. See § 16.

B

Back of a Composing-stick. See § 9. ¶ 4.

Backside of the Form is the underside that touches upon the *Correcting-stone* or *Press-stone*.

Bad Copy. See § 24. ¶ 4.

Bad

Bad work. Any Fault at the *Cafe*, or *Press*, or at the *Furnace*, or at the *Dressing-block*, &c. is in Workmen's Language called *Bad Work*.

Bake. See § 22. ¶ 10.

Balls. See § 24. ¶ 10.

Ball-knife. An old blunt-edg'd Knife, that *Press-men* lay by, to scrape their *Balls* with.

Ball-leathers. See § 24. ¶ 10.

Ball-Nails. The *Nails* that *Ball-leathers* are Tackt to the *Ball-stocks* with.

Ball-stocks. See § 11. ¶ 21.

Balls Take. See § 11. ¶ 21.

Beak. See § 12. ¶ 2.

Beam. See § 12. ¶ 4.

Beard of a Letter, is the outer angle of the Square Shoulder of the *Shank*, which reaches almost up to the *Face* of the *Letter*; and is commonly scraped off by the *Founder*: As in § 2. ¶ 2.

Beard-Gage. See § 13. ¶ 4.

Bearer. See § 4. & § 24. ¶ 7.

Beat. See § 24. ¶ 13.

Beat Fat. If a *Press-man* *Takes* too much *Inck* with his *Balls*, he *Beats Fat*. The *Black English Faced Letter* is generally *Beaten Fat*.

Beat Lean, is to *Take* but little *Inck*, and often: All *Small Letter* must be *Beaten Lean*.

Bed. See § 24. ¶ 2.

Benvenuue. See *Ancient Customs*.

Bite. See § 24. ¶ 7.

Blankets. Woollen Cloath, or White Bays, to lay between the *Tympans*.

Blocks. See § 20. ¶ 3.

Block-Groove. *ibid.*

Body.

Body. See § 1. ¶ 2. & § 15. ¶ 1.

Botching Matrices. See § 17. ¶ 3.

Bottom line. See § 14. ¶ 2.

Bottom of the Matrice. See §. 17. ¶ 1.

Bottom Plate. See §. 15. ¶ 1.

Bow. See § 15. ¶ 1.

Brace, is a Character *Cast* in *Mettle* thus marked ~~~~ The *Compositor* is to have these *Cast* of several Breadths, viz. to several numbers of *Lines* of a designed *Body* (most commonly of *Pica Body*) that they may hook in or Brace so many *Lines* as his *Copy* may shew him; as at *Charge* is a Brace of four *Lines*. See also § 24. ¶ 1.

Brass-Rules. See § 2. ¶ 2.

Brayer is a round *Wooden Rubber*, almost of the fashion of a *Ball-stock*, but flat at the bottom, and not above three Inches Diameter: It is used in the *Inck-Block* to *Bray* or *Rub Inck*.

Break, a piece of a *Line*. Also the *Mettle* that is contiguous to the *Shank* of a *New Cast Letter*: This *Break* is formed in the *Mouth-piece* of the *Letter-mould*, and is called a *Break*, because it is always broke from the *Shank* of a *Letter*.

Breaking off is breaking the *Break* from the *Shank* of the *Letter*. See § 19. ¶ 3.

Brevier. See § 2. ¶ 2.

Broad-side, a *Form* of one full *Page*, Printed on one side of a whole Sheet of Paper.

Broken Letter. By broken *Letter* is not meant the breaking of the *Shanks* of any of the *Letters*, but the breaking the orderly Succession the *Letters* stood in in a *Line*, *Page*, or *Form*, &c. and mingling the *Letters*

ters together, which mingled *Letters* is called *Py.*
Bur. See *Rag.*

C

Cannon. See § 2. ¶ 2.

Card. When several *Bodies* of *Letter* are *Set* in a *Page*, *Compositors* to *Justifie* that *Page* to an exact Length, put a *Card* to some *White-line*, or other *Break* and *Lengthen* out the *Page* the thicknes of a *Card*. And *Press-men* also use a *Card* for an underlay. See § 22. ¶ 4. &c. § 24. ¶ 7.

Cards. About a Quire of Paper, which *Press-men* use to *Pull* down the Spring or rising of a *Form*, which it is many times subject to by hard *Locking-up*. See § 24. ¶ 4.

Carriage, is a part of the *Press*. For which See § 10. ¶ 9. It is also a part of the *Letter-Mold*: For which See § 15. ¶ 3.

Cafe. See § 3.

Cafe lies. See § 22. ¶ 1.

Cafe is full, viz. a *Cafe* full of *Letter*, wanting no Sorts.

Cafe is Low. When a *Cafe* grows empty, *Compositors* say the *Cafe* is Low.

Cafe Stands still. When the *Compositor* is not at Work at his *Cafe*, it is said, *The Cafe stands still.*

Caffie Paper. See § 25. ¶ 5.

Cast, is to *Cast Letter*. See § 19. ¶ 1.

Cast off Copy. See § 22. ¶ 9.

Catch of the Bar. See § 11. ¶ 11.

Chappel. See Customs.

Charge,

Charge, is to fill { *Paper with great Pages.*
a Page with long and many Lines.
a Line with many Letters.
a Pot with Stubs and Antimony.

Chase. See § 9. ¶ 6.

Cheeks. is a part of the *Press*; for which See § 10.
 ¶ 2. and part of the *Dressing-block-groove*. For
 which See § 20. ¶ 3.

Choak. If a *Form* be not Washt in due time, the *Inck* will get into the Hollows of the *Face* of the *Letter*: And that getting in of the *Inck* is called *Choaking of the Letter*, or *Choaking of the Form*.

Claw of the Sheep's-foot. See § 11. ¶ 20.

Clean Proof. When a *Proof* has but few Faults in it, it is called a clean *Proof*.

Close Matter. *Matter with few Breaks or Whites.*

Close Work. *ibid.*

Colation Books. See § 25. ¶ 4.

Come. When the *Face* and *Shank* of a *Letter* is *Cast* perfect, *Founders* say, *It Comes well*; if unperfect they say, *It does not come*, or *It comes not well*.

Come Down. the *Toe* of the *Spindle* is said to *Come down* by *Pulling the Bar*: So is the *Bar* when it is *Pull'd* near the hither *Cheek*: Also, the *Press-man* is said to *Come down the Form* with his *Balls*: For which See § 24. ¶ 13.

Companion. See § 24. ¶ 15.

Comes off. A *Form* that receives a good *Impression*, *Comes off well*, if a bad *Impression*, it *Comes off ill*, or it *Comes not well off*. Also a phrase used in *Gathering* of *Books*; for a *Heap* that is *Gathered off* is said to *Come off*. See § 25. ¶ 3.

Com-

Composing Rule. See § 24. ¶ 4.

Compositor. He that *Composes* or *Sets the Letters*.

Composing-stick. See § 9. ¶ 4.

Copy-money. See Customs.

Cording-quire. See § 25. ¶ 5.

Correct. When the *Corrector* reads the *Proof*, or the *Compositor* mends the *Faults* he markt in the *Proof*, they are both said to *Correct*; the *Correcter* the *Proof*, the *Compositor* the *Form*.

Correcting-stone. See § 6.

Corrections. the *Letters* markt in a *Proof* are call'd *Corrections.* See § 22. ¶ 8.

Counter Punch. See § 13. ¶ 2.

Counting off Copy. See § 22. ¶ 9.

Coyns. See § 8.

Cramp Irons. See § 11. ¶ 15.

Cross Long, Short. See *Chase*.

Cull Paper. See § 25. ¶ 5.

Cut the Frisket. See § 24. ¶ 7.

D

Dance. See § 22. ¶ 7.

Dele. See § 23.

Distribute. See § 22. ¶ 3.

Distributing-stick. See *ibid*.

Devil. The *Press-man* sometimes has a *Week-Boy* to *Take Sheets*, as they are Printed off the *Tympa*: These Boys do in a Printing-House, commonly black and Dawb themselves; whence the Workmen do Jocosely call them *Devils*; and sometimes *Spirits*, and sometimes *Flies*.

Direction, the word that stands alone on the Right Hand in the bottom *Line* of a *Page*.

Dire-

Direction-line. The *Line* the *Direction* stands in.

Double Letter. æ œ š þ, and several others *Cast* on one *Shank* are called *Double Letters*: ſ and f have several *Ascending Letters* joyned to them, because their *Beaks* hanging over their *Stems* would (were they not *Cast* on one *Shank*) ride upon the tops of the *Stems* of the adjoyning ascending *Letter*.

Double. A Sheet that is twice *Pulled* and lifted never so little off the *Form* after it was first *Pulled*, does most commonly (through the Play of the *Joynts* of the *Tympan*) take a double *Impression*: This Sheet is said to *Double*. Or if the *Press-man Run in* so, as the Fore-side of the *Plattin Print* with the *First Pull* into part of the *Second Pull*, or the hind edge of the *Plattin Print* with his *Second Pull* into part of his *First Pull*; either of these twice Printing is called *Doubling*. *Doubling* also happens through the loose *Hanging* of the *Plattin*, and through too much play the *Tennants* of the *Head* may have in the *Mortesſes* of the *Cheeks*, and indeed through many *Wearings* and *craſienesses* that often happens in several parts of the *Press*. See § 24. ¶ 18.

Drefs a Chase, or *Drefs a Form*, is all one. It is to fit the *Pages* and the *Chase* with *Furniture* and *Quoins*. See § 22. ¶ 7.

Drefs Letter. See § 21. ¶ 1.

Dressing Block. See § 20. ¶ 3.

Dressing Block-groove. ibid.

Dressing Hook. See § 20. ¶ 1.

Dressing Knife. See § 20. ¶ 4.

Dressing Sticks. See § 19. ¶ 6.

Drive out. When a *Compoſiter Sets Wide*, he is said to

to *Drive out* or *Run out*. In *Founding*, If *Letter* be *Cast* too Thick in the *Shank* it *Drives out*, or if it be *Cast* too Thick in any part of the *Shank*, as the *Head*, the *Foot*, the sides at *Head* or *Foot*, or *Body* at *Head* or *Foot*: They say, *It Drives out at Head, It Drives out at Foot, &c.*

E

Empty Case. See § 22. ¶ 3. & See *Case is Low*.

Easie Pull. See § 24. ¶ 5.

Easie Work. See § 22. ¶ 4. And *Great Letter* and a *Small Form* the *Press-man* calls *Easie Work*.

Empty Press. A *Press* that Stands by, which no Workman Works at: Most commonly every *Printing-House* has one of them for a *Proof-Press*: viz. to make *Proves* on.

English Body. See § 1. ¶ 2.

English Face. Plate 26. 27. are *English Face Letters*.

Even Page. The *First Page* of a *Sheet* or *Form* is called an *Odd Page*, but the *Second, Fourth, Sixth*, or any other even numbered *Page* is called an *Even Page*. See § 22. ¶ 7.

F

Face of a Letter, See § 13. ¶ 13.

Face of a Page, or Form. The Superficies of a *Page* or *Form*, where the *Faces* of every *Letter* lies in the same Plain.

Face-Gage. See § 12. ¶ 5.

Face of a Matrice. See § 17. ¶ 1.

Fat Ashes. *Founders* call their *Ashes Fat*, if they are considerably Heavy, because then they have much *Mettle* in them.

Fat. See *Beat Fat*.

Fat

Fat Face, or Fat Letter, is a broad Stemmed Letter.

Female Gage, Screws, &c. The *Hollow Gage, or Hollow Screw* that receives its *Match Gage* or *Screw, &c.*

First. See § 24. ¶ 15.

First Form. The *Form* the *White Paper* is Printed on, which generally by Rule ought to have the *First Page* of the Sheet in it.

First Page. See § 22. ¶ 7.

First Pull. See § 11. ¶ 16. & § 24. ¶ 7. Considerations 8. & § 24. ¶ 15.

Flat-Gage. See § 12. ¶ 3.

Flat Table. See § 12. § 8.

Fly. See *Devil.*

Follow. viz. See *if it follows*, is a Term used as well by the *Corrector* as by the *Compositor* and *Press-man*. It is used by the *Corrector* and *Compositor* when they examine how the beginning *Matter* of a succeeding *Page* agrees with the ending *Matter* of the precedent *Page*: And how the *Folio's* of those *Pages* properly and numerically follow and succeed one another, Lest the *Pages* should be *Transposed*. But the *Press-man* only examines that the *Folio* and beginning word of the *Second Page*, and *Signature* of the *First* and *Third Page* (when the *Reteration* is on the *Press*) follows the *Folio* and *Direction* of the *First Page*, and the *Signature* of the *Third Page* follows the *Signature* of the *First Page*, orderly according to the *Volumne*, lest the *Form* should be laid wrong on the *Press*.

Foot of the Letter. The *Break-end* of the *Shanck* of a *Letter*.

Foot-

Foot-line. See § 14. ¶ 12.

Foot of a Page. The bottom or end of a *Page*. See § 22. ¶ 7.

Foot-Step. See § 11. ¶ 21. & § 24. ¶ 7. & Considerations 11.

Foot-stick. See § 8.

Form. The *Pages* when they are fitted into a *Chase*.

Foul Proof. When a *Proof* has many *Faults* markt in it.

Fount. Is the whole number of *Letters* that are *Cast* of the same *Body* and *Face* at one time. See § 2. ¶ 2.

Frisket. See § 10.

Froze out. In Winter when the Paper is Froze, and the *Letter* Froze, so as the Workmen cannot Work. They say, *They are Froze out*.

Fryer. When the *Balls* do not *Take*, the *Un-taking* part of the *Balls* that touches the *Form* will be left White, or if the *Press-men* Skip over any part of the *Form*, and touch it not with the *Balls*, though they do *Take*, yet in both these cases the White places is cal'd a *Fryer*.

Full Form or Page. A *Form* or *Page* with few or no *Breaks* or *White-lines*.

Full Press. When two Men Work at the *Press*. It is called a *Full Press*.

Furnace. See § 18.

Furnace open, or Wind Furnace. See § 18. ¶ 2.

Funnel. See § 18.

Furniture. See § 8:

G

Gage. Gages mentioned in this Volumne have an adjunct Name, as *Flat Gage*, *Joynt Gage*, *Italick Gage*, *Long Gage*, *Male Gage*, *Short Gage*, *Standing Gage*, *Steel Gage*, which See respectively.

Galley. See § 5.

Galley-Slave. See the Customs.

Gallows. See § 10.

Garter. See § 11. ¶ 14.

Gather Books. See § 25. ¶ 3.

Geat, is the little Spout or Gutter made in the Brim of *Casting Ladles*.

Get in. *Matter* is Got in in a *Line*, *Page*, *Sheet* or *Book*, if *Letter* be Thinner *Cast* than the *Printed Copy* the *Compositor Sets* by. Or *Matter* is Got in if the *Compositor Sets Closer*: Or if he *Widens his Measure*; or puts more *Lines* in a *Page*. See a *Line*.

Girts. See § 11. ¶ 21.

Good Colour. Sheets Printed neither too Black or too White.

Good of the Chappel. Forfeitures and other *Chappel Dues* are Collected for the *Good of the Chappel*, viz. to be spent as the *Chappel* approves.

Good Work, is called so in a twofold sense: The Master-Printer calls it *Good Work* when the *Compositors* and *Press-men* have done their duty; and the *Work-men* call it *Good Work*, if it be *Light Ease Work*, and they have a good price for it.

Go up the Form. See § 24. ¶ 13.

Great Cannon. See § 2. ¶ 2.

Great Numbers. See *Lay on*. Above 2000 Printed on one Sheet are accounted *Great Numbers*.

Great

Great Primer. See § 2. ¶ 2.

Gutter-stick. See § 8.

H

Hag. See § 15. ¶ 1.

Half a Line. When *Letter Drives out or Gets in* in the *Body*, in a number of *Lines*, *Founders* say, *It Drives out or Gets in Half a Line*, a whole *Line*, a quarter of a *Line*, &c. viz. *Half a Body*, a *whole Body*, a quarter, &c. of a *Body*.

Half a Press. When but one *Man Works at the Press*, It is called *Half a Press*.

Half Work. He that *Works but three days in the Week*, does but *Half Work*.

Hammer end of a Punch. See § 13. ¶ 13.

Hangs. See *Letter Hangs.* & § 22. ¶ 4.

Hang the Platin. See § 24. ¶ 4.

Hang up Paper. See § 25. ¶ 1.

Hard Inck. *Inck very well Boyled.* See § 11. ¶ 23.

Hard Justifying. See § 22. ¶ 4.

Hard Pull. See § 24. ¶ 5.

Hard Work. See § 22. ¶ 4. And small *Letter* and a *Large Form*, *Press-men call Hard Work*.

Head. See § 10. ¶ 5.

Head Line. See § 14. ¶ 2.

Head of a Page. The top or beginning of a *Page*. See § 22. ¶ 7.

Head-stick. See § 8.

Heap. So many *Reams* or *Quires* as is *Set out* by the *Warehouse-keeper* for the *Press-man* to *Wet*, is call'd a *Heap*: But then it is call'd a *Dry Heap*, till the *Press-man* have *Wet* it, and then it is indeed called a *Heap*. See also § 25.

Heap.

Heap holds out. When it hath its full intended Number of Sheets.

Heavy Work. See *Hard Work.*

Height. See *High against Paper.*

High against Paper. If a *Punch* be not Sunk deep enough into the *Matrice*, the *Letter Cast* will not stand high enough against Paper. And if it be Sunk too deep into the *Matrice*, the *Letter Cast* will be too *High* against Paper. See § 17. ¶ 2.

Holds out, or *Holds not out*. These Terms are applicable to the Quires of *White-paper*, to *Wrought-off Heaps*, to *Gathered Books*, and to sorts of *Letter* &c. If Quires of White Paper have twenty five Sheets a piece in them, they say, *The Paper holds out five and twenties*. Of *Wrought off Heaps*, the *Heap* that *Comes off* first in *Gathering* is said, *Not to Hold out*. Of *Gathered Books*, if the intended number of perfect *Books* are *Gathered*, they say the *Impression Holds out*: But if the intended number of *Perfect Books* cannot be *Gathered off* the *Heaps*, they say the *Impression Holds not out*. And so for Sorts of *Letter*, either when it is in the *Founding House*, or in the *Printing House*.

Hole. By a *Hole*, in Printers dialect, is meant and understood a place where private Printing is used, viz. the Printing of Unlicensed *Books*, or Printing of other mens *Copies*. Many Printers for Lucre of Gain have gone into *Holes*, and then their chief care is to get a *Hole Private*, and Workmen Trusty and Cunning to conceal the *Hole*, and themselves.

Holy-days. See *Customs*.

Hollows of a Letter. The *Sinking in* of the *Counter-*

ter-Punch into the *Punch* makes these *Hollows*, so does Sculping into the *Face* of the *Punch*. See § 9. ¶ 4.

Hooks. See *Hags*.

Horse. The Form or Bench *Press-men* set the *Heaps* of Paper on. See also *Customs*.

Horse-flesh. If any Journeyman set down in his Bill on *Saturday Night* more Work than he has done, that Surplusage is called *Horse-flesh*: And he abates it in his next Bill.

Hose. See § 11. ¶ 14.

Hours. *Press-men* reckon their Work by Hours, accounting every *Token* to an Hours Work: And though it be the same effectually with *Tokens*, yet they make their prizes of different Work by the Hour; and it passes current for a *Token*. If two Men Work at the *Press* ten Quires is an Hour; if one Man, five Quires is an Hour.

I

Jaws. See § 15. ¶ 6.

Imperfections of Books. See § 25. ¶ 3.

Imperfections of Letters. When the *Founder* has not *Cast* a proportionable number of each sort of *Letter*, the wanting *Letters* are called *Imperfections*, as making the rest of the *Fount* unperfect. See *Sorts*.

Impose. See § 22. ¶ 7.

Impression holds out. See *Holds out*.

In-Page. See *Out-Page*.

Insertion. If the *Compositor* have left out Words or Lines, the *Corrector* inserts it, and makes this mark ^ where it is *Left out*, which is called the mark for *Insertion*. See § 23.

Joynt

Joynt flat Gage. See § 14. ¶ 4.

Joynts. See § 10. ¶ 9.

Inner Tympan. See § 11. ¶ 10.

Italick Gage. See § 12. ¶ 6.

Justifie a Matrice. See § 17. ¶ 2.

Justifie a Mold. See § 16.

Justifie a Stick. viz. a *Composing-stick*. See § 22. ¶ 4.

K

Keep in, is a caution either given to, or resolved on, by the *Compositor*, when there may be doubt of *Driving out* his *Matter* beyond his *Counting off*, wherefore he *Sets close*, to *Keep in*.

Keep out, is a caution either given to or resolved on, by the *Compositor*, when there may be doubt of *Getting in* his *Matter* too fast for his *Counting off*: Wherefore he *Sets Wide*, to *Drive* or *Keep out*.

Kern. See § 19. ¶ 5.

Kerning-Knife. See § 19. ¶ 5.

Kerning-stick. See § 19. ¶ 5.

Knife backt Sculptor, is a Sculptor with a thin edge on its back.

Knife-file. A file with a thin edge.

Knock up Balls. See § 24. ¶ 10.

Knock up Books. See § 25. ¶ 3.

Knock up a Letter. It sometimes happens with old *Letter*, that a *Letter* may be worn so low that it will not Print well in a *Page*: The Workman then takes that *Letter* out of the *Form*, and holds the *Shank* of it upon the side of the *Chase*, and with the *Head* of the *Shooting-stick* beats lightly upon the *Foot* of the *Shank*, till he have battered *Mettle* enough

enough out of the *Shank*, to raise it higher against Paper: If it prove too high against Paper, he Rubs the bottom of the *Shank* upon the side of the *Chase* to rub it down: This Operation seldom happens, unless another of the same sort of *Letter* is wanting, and hard to come by: For else the *Compositor* will bow the *Letter*, and pop it into a *Waste Box* in his *Cafe*, where he puts all naughty *Letters*, that he may not be troubled with them another time.

Knot. See § 20. ¶ 3.

L

Ladles. See § 18. ¶ 3.

Lay in Sheets. When the *Press-man* lays *Sheets* on the *Tympa*n, it is styled *Laying in Sheets*.

Lay out Sheets. When the *Press-man* takes *Sheets* off the *Tympa*n, and lays them on the *Heap*, it is styled *Laying out Sheets*.

Lay on. A phrase used for the Number of Books to be Printed. Thus they say, There is 1000, 2000, 3000, &c. *Laid on.* See *Great Numbers*. See *Small Numbers*.

Lean Ashes. Founders call their Ashes *Lean*, if they are *Light*; because then they have little *Mettle* in them. See *Fat Ashes*.

Lean. See *Beat Lean*.

Lean Face. A Letter whose Stems and other Stroaks have not their full width.

Lean Stroaks. The fine Stroaks in a Letter.

Leather Groove. See § 17. ¶ 2.

Letter-Board. See § 7.

Letter Hangs. If the *Compositor* has been careless in Emptying his *Composing-stick*, so as to set the *Letter* loosely

loosely down in the *Galley*, and they stand not perfectly Square and Upright, the *Letter Hangs*: Or if after *Overrunning* on the *Correcting-stone* he has not Set his *Letter* in a Square position again, before he *Locks up*, (for we may suppose when the *Pages* are Open'd the *Letter* stands Loose, and more or less out of Square) So then, the *Matter* standing thus out of Square, is said to *Hang*. See § 22. ¶ 4, 7.

Light Work. See *Easie Work*.

Liner. See § 12. ¶ 7.

Lining-Stick. See § 16. ¶ 2.

Lock up. See § 22. ¶ 7. and § 21. ¶ 1.

Long Cross. See *Chase*.

Long Gage. See § 12. ¶ 5.

Long Primmer. See § 2. ¶ 2.

Long Pull. See § 24 ¶ 5.

Loose Justifying. See § 22. ¶ 4.

Low against Paper. See *Heighth against Paper*.

Low Case. When the *Compositor* has *Compos'd* almost all his *Letters* out of his *Case*, he says his *Case* is *Low*.

Lower Case. See § 3.

M

m Thick. See § 13. ¶ 1.

Make a Measure. See § 22. ¶ 4.

Make ready the Form. See § 24. ¶ 7.

Male Gage. The outer *Gage*, or outer *Screw*, that enters or fits into its *Match Gage* or *Screw*, &c.

Mallet. See § 9.

Matrice. See § 17. ¶ 1.

Matter. The series of the discourse of the *Compositors Copy*.

Mea-

Measure. The width of a *Page*. See *Composing-Stick*.

Mettle. See § 18. ¶ 2.

Mold. See § 15. ¶ 1.

Monk. When the *Press-man* has not *Distributred* his *Balls*, some splotches of *Inck* may lye on one or more of them, which in *Beating* he delivers upon the *Form*; so that the Sheet Printed on has a black blotch on it: Which Blotch is called a *Monk*.

Mouth-piece. See § 15. ¶ 1.

N

n Thick. See § 13. ¶ 1.

Naked Form, or *Page*, is when the *Furniture* is taken from about all sides of the *Form* or *Page*. See § 22. ¶ 7.

Neck of a Letter. So much of the *Punch* as is Sunk into the *Matrice* is called the *Neck*; and when that *Letter* is *Cast* of *Mettle*, it is so much as comes above the Square of the *Shank*, viz. above the *Beard*.

Nick. See § 15. ¶ 1.

Nomparel. See § 2. ¶ 2.

Notch of the Matrice. See § 17. ¶ 2.

Notes. Quotations down the side of a *Page* are called *Notes*.

Number Laid on. See *Lay on*.

Nut of the Spindle. The Female Screw that receives the *Worms of the Spindle*.

O

Odd Page. The First, Third, Fifth, Seventh, and all un-even numbered *Pages* are *Odd Pages*.

Off. A *Press-man* usually says, *I am off*, meaning he has

has *Wrought off his Token, his Heap, his Form.*

Open Matter. Full of *Breaks* and *Whites.*

Open Furnance. See § 18. ¶ 2.

Open the Form. See § 22. ¶ 2.

Open Work. See *Open Matter.*

Over-run. See § 22. ¶ 8.

Out. A *Compoſiter* usually says, *I am Out*, meaning he has *Set out* his *Page, Form, or Copy.* See also § 23.

Out-Page. In *Octavo's, Twelves, Sixteens,* every *Out-side Page* in the Sheet is called an *Out-Page*, the rest are called *In-pages.*

Out of Register. *Bad Register.* See § 24. ¶ 7.

P

Pale Colour. If there be not *Blacking* enough in the *Inck*, or the *Form* be *Beaten* with too *Lean Balls*, the Work will be said to have a *Pale Colour.*

Pallat. See § 15. ¶ 1.

Pan. The great *Ladle* that *Founders* melt their *Mettle* in, when they are *Casting Letters*, is called the *Pan.* See also § 9. ¶ 18.

Paper-bench. See *Horse.*

Paper-board. See § 7.

Paper the Case. See § 22. ¶ 1.

Paper Windows. See *Customs.*

Paper up Letter. *Pages.* See § 22. ¶ 10.

Pearl. See § 2. ¶ 2.

Peel. See § 11. ¶ 22.

Pelts. Sheep Skins untan'd, used for *Ball Leathers.*

Pica. See § 2. ¶ 2.

Picks. When either pieces of the Skin or Film that grows on *Inck* with standing by, or any dirt get into the

the *Hollows* of the *Face* of the *Letter*, that Film or Dirt will fill or choak up the *Face* of the *Letter*, and Print Black; and is called a *Pick*; because the *Press-man* with the point of a Needle, picks it out.

Pidgeon-holes. See § 22. ¶ 24.

Plattin.

Plattin-hooks. } See § 9. ¶ 18.
Plattin-pan.
Plattin-plate.

Play with Quadrats. See Customs.

Plow. See § 20. ¶ 5.

Points. See § 11. ¶ 19. Also , ; : . - ? ! (')
[* § †, and other marks, are all by *Printers* and *Founders* called *Points*.]

Point-holes. The two Holes the *Points* prick in a Sheet of Paper. See § 22. ¶ 7.

Point-Screws. See § 11. ¶ 9.

Press. See § 10.

Press-man. See § 24. ¶ 1.

Press goes. When the *Press-men* are at Work, the *Press* is said to *Go*.

Press goes Hard, Heavy. See § 24. ¶ 5. and *Press goes Ease, Light.*

Press stands still. When the *Press-men* are not at Work, the *Press* is said to *stand still*.

Press-stone. See § 11. ¶ 17.

Proof. See § 24. ¶ 18.

Proof Letters. See § 16. ¶ 2.

Proof Press. See *Empty Press*.

Print Hand. See Plate 11, 12, 13, 14, 15, 16, 17.

Pull—Ease, Long, Short, Soft. See § 24. ¶ 5.

Punch.

Punch. See § 13. ¶ 1.

Py. when a *Page* is broken, those broken *Letters* are called *Py.* See *Broken Letter.*

Q

Quadrats. See § 19. ¶ 1.

Quarters. *Quarto's, Octavo's and Twelves Forms* are *Imposed in Quarters.* They are called *Quarters*, not from their equal divisions; but because they are *Imposed* and *Lockt up* apart. Thus half the *Short-Cross* in a *Twelves Form* is called a *Quarter*, though it be indeed but one Sixth part of the *Form.*

Quoins. See § 8.

Quotation Quadrats, Are *Cast* the heighth of the *Quotation.* They are *Cast* of different *Bodies*, that the *Compositer* may have choice of them to *Justifie* his *Notes* or *Quotations* exactly against the designed *Line* of the *Page.*

R

Racks. See § 11. ¶ 22. & § 12. ¶ 19.

Rag. When *Letter Cast* has a *Bur* on any of its edges, that *Bur* is called a *Rag.*

Register. See § 15. ¶ 1. & § 24. ¶ 7.

Register-sheet. The Sheet or Sheets Printed to make *Register* with.

Reteration. The *Second Form*, or the *Form* Printed on the backside of the *White Paper.*

Revise. See § 23.

Ribs. See § 10. ¶ 8. & § 11. ¶ 15.

Riglet. Is a sort of *Furniture* of an equal *Thickness* all its *Length.* It is *Quadrat* high, of several *Thicknesses*, viz. a *Nomparel, Brevier, Long-primmer, Pica, &c. Thick.*

Rince

Rince the Form. See § 22. ¶ 2.

Rincing-Trough. The Trough *Forms* are *Rinced* in.

Rise. A *Form* is said to *Rise*, when in Rearing it off the *Correcting-stone* no Letter or *Furniture*, &c. stay behind. See § 22. ¶ 7.

Rounce. See § 11. ¶ 16.

Rowl up the Ball Leathers. See § 24. ¶ 18.

Rub Letter. See § 19. ¶ 4.

Rubs not. When the *Shank* is *Cast* too *Thin*, that in Rubbing part of the *Face* or the *Topping* or *Footing* *Rubs* away: *Founders* say, *It does not Rub*.

Rubs well. When the *Shank* of a *Letter* has a proper Thickness, *Founders* say, *It Rubs well*.

Rub out Inck. See § 24. ¶ 11.

Rules. viz. *Brass Rules.* See § 2. ¶ 2.

Run in the Carriage. See § 24. ¶ 15.

Runs on Sorts, when *Matter* runs much on some few Sorts of *Letters*, they say, *it Runs on Sorts*, See *Sorts*.

Run out from Copy. See *Drive out*.

S

Scaboard. See § 8.

Second at the Pres. See § 24. ¶ 15.

Second Pull. See § 11. ¶ 16. Considerations 8. &

§ 24. ¶ 15.

Sets Foul. See *foul Proof*.

Sets Clean. See *Clean Proof*.

Sets Close. See *Get in*.

Sets Wide. See *Drive out*.

Set out Paper. See § 25. ¶ 5.

Set the Rounce. See § 24. ¶ 3.

Sets off. Work that is newly *Wrought off* at the *Press* often

often *Sets off*, especially if it be *Fat Beaten* with *Soft Inck*: For when it comes to be *Beaten*, or sometimes only hard prest by the *Book-binder*, the moist *Inck* spreads and delates it self round about the *Face* of every *Letter*, and fullies and stains the whole *White Paper*.

Shake. See § 19. ¶ 1.

Shank, the square *Mettle* the *Face* of a *Letter* stands on, is called the *Shank* of a *Letter*.

Sheeps-foot. See § 11. ¶ 20.

Shooting-stick. See § 9. ¶ 2.

Short-cross. See *Chase*.

Short-Page. See § 12. ¶ 5.

Side-stick. See § 8.

Signature. See § 22. ¶ 4.

Sinck Matrices. See *Sinck Punches*.

Sinck Punches. See § 17. ¶ 1.

Slice. See § 11. ¶ 11.

Sliding-Gage. See § 12. ¶ 4.

Sliding-Socket. See § 12. ¶ 4.

Small Numbers. Under 1500 *Laid on* is accounted a *Small Number*. See *Great Numbers*; and See *Lay on*.

Smoak Vent. See § 18. ¶ 1.

Smout. Workmen when they are out of constant Work, do sometimes accept of a Day or twos Work, or a Weeks Work at another Printing-house: this By-work they call *Smouting*.

Soaking Pull. See § 24. ¶ 5.

Soft Pull. *ibid.*

Soft Inck. *Inck* or *Varnish* moderately boiled. See § 11. ¶ 23.

Solace. See *Customs*.

Sop

Sop the Balls. When a *Press-man* has taken too much *Inck*, he is said to *Sop the Balls*.

Sorts. The *Letters* that lye in every *Box* of the *Cafe* are separately called *Sorts* in *Printers* and *Founders* Language; Thus a is a *Sort*, b is a *Sort*, c is a *Sort, &c.*

Space Thick, Space Thin. See § 12. ¶ 1.

Spindle. See § 11. ¶ 12. 16.

Spirit. See *Devil*.

Spring. See § 15. ¶ 1.

Squabble. A *Page* or *Form* is *Squabbled* when the *Letter* of one or more *Lines* are got into any of the adjacent *Lines*; or that the *Letter* or *Letters* are twisted about out of their square Position.

Stem. The strait *Flat stroaks* of a straight *Letter* is called *Stem*. See § 14. ¶ 1.

Stick. The *Composing-stick* commonly so called.

Stickfull. See § 22. ¶ 4.

Stiff Justifying. See § 22. ¶ 4.

Stirring-Pote. See § 18. ¶ 2.

Stoak-hole. See § 18. ¶ 1.

Stoaking-Rod. A Rod of thick Wyer put into such an Handle as is the Handle of a *Letter-Ladle*. Founders use it to stir up the Fire in the *Furnace*.

Stone. See § 19. ¶ 1.

Stool. See § 15. ¶ 1.

Stop. See § 19. ¶ 1.

Strip a Form. See § 22. ¶ 2.

Stroaks, are fat, lean, fine, hair. See § 14. ¶ 2.

Superior Letters, are often set to *Marginal Notes*: They are *Letters* of a *Small Face*, high *Justified* by

the

the Founder in the *Mold* near the *Top-Line*.

Swash-Letters. See Plate 15.

T

Tache. A small Board with *Notches* in its Fore-edge; either nailed upon the Fore-edge of the *Work-Bench*, or screwed into the *Vice*; so as the *Notches* may stand forwards to rest the *Shank* of a *Punch* in. See § 12 ¶ 9.

Tail of Letters. See § 14. ¶ 2.

Take off. See Customs.

Taking off. See § 22. ¶ 3.

Take up. See § 22. ¶ 3.

Take up a Sheet. See Customs.

Take Inck. See § 24. ¶ 10.

Teze Wooll, or Hair. See § 24. ¶ 18.

Thick Letter. A *Fount* of *Letter* that *Rubs* not high enough into the *Neck* is called *Thick Letter*; and consequently will *Drive out Matter*. See § 17. ¶ 2.

Thick Space. See § 13. ¶ 1.

Thin Space, ought by a strict orderly and methodical measure to be made of the Thickness of the seventh part of the *Body*; though *Founders* make them indifferently Thicker or Thinner.

Throat. See § 15. ¶ 1. & 6.

Till. See § 10. ¶ 6.

Toe of the Spindle. See § 11. ¶ 12.

Token. See § 25. ¶ 5.

Token Sheet. See § 24. ¶ 9. 15.

Tongue. See § 20. ¶ 3.

Tooth of the Plow. The pointed edge that Cuts the Groove in the bottom of the Shanks in the Blocks. See § 21. ¶ 5.

Transpose.

Transpose. See § 22. ¶ 7. & § 23.

Turn for a Letter. It often happens when *Matter* Runs upon *Sorts*, especially in *Capitals*, or some other Sorts seldom used, that the *Compositor* wants that Sort the *Matter Runs on*; wherefore he is loath to *Distribute Letter* for that Sort; or perhaps his *Case* is otherwise Full. Wherefore instead of that *Letter* or Sort, he *TURNS* a *Letter* of the same Thickness, with the *Foot* of the *Shank* upwards, and the *Face* downwards; which *Turned Letter* being easie to be seen, he afterwards when he can accommodate himself with the right Sort, takes out, and puts the right *Letter* in its room. It is also a word used jocosely in the *Chappel*, when any of the Workmen complain of want of Money, or any thing else, he shall by another Workman be answered, *Turn for it*, viz. Make shift for it.

Tympa[n]. See § 10. ¶ 10.

Tympa[n]-Cloath. See § 24. ¶ 18.

Tympa[n]-sheet. See § 24. ¶ 7.

V

Vantage. When a *White-page* or more happens in a Sheet, the *Compositor* calls that *Vantage*: So does the *Press-man*, when a *Form* of one *Pull* comes to the *Press*.

Varnish. See § 11. ¶ 23.

Visorum. See § 22. ¶ 4.

Un-lock the Form. See § 22. ¶ 2.

Underlaid. A Phrase used by *Press-men* for the *Light* and *Ease*, or *Heavy* and *Hard Running in* of the *Carriage*. Thus they say, *The Press goes light and ease*

easie under Hand, or it goes heavy or hard under Hand.

Upper Hand, when the *Spindle* goes soft and easie, the *Press-men* say, *It goes well under Hand, or Above Hand*. But the contrary if it goes *Hard and Heavy*.

W

Wash the Form. See § 24. ¶ 18.

Way-goose. See Customs.

Weak-Inck. See *Soft-Inck*.

Wedge. See § 20. ¶ 3.

White-line. A Line of *Quadrats*.

White-Page. A *Page* that no *Matter* comes in.

White-Paper. Although the first *Form* be Printed off, yet *Press-men* erroneically call that *Heap White-Paper*, till the *Reteration* be Printed.

Whole-pres. See *Full-Pres*.

Wind-furnace. See *Open-furnace*.

Wind-hole. See § 18. ¶ 1.

Wood. See § 15. ¶ 11.

Wyer. See § 15. ¶ 9.

F I N I S.

TYPOGRAPHICAL CORRECTIONS

Page	Line	In Original	In Reprint	Page	Line	In Original	In Reprint
17	9	<i>wieght</i>	<i>weight.</i>	200	26	<i>in</i>	<i>is.</i>
17	23	<i>fo</i>	<i>to.</i>	211	17	<i>nor</i>	<i>not.</i>
19	15	<i>witout</i>	<i>without.</i>	213	24	<i>Lettets</i>	<i>Letters.</i>
20	23	<i>thanthe</i>	<i>than the.</i>	221	26	<i>n</i>	<i>in.</i>
22	15	<i>battens</i>	<i>battent.</i>	222	11	<i>Rnn</i>	<i>Run.</i>
36	21	<i>containing</i>	<i>containing.</i>	237	16	<i>a bout</i>	<i>about.</i>
42	31	<i>hyphen</i> inserted after <i>Ten.</i>		239	16	<i>thrust</i>	<i>thrusts.</i>
47	25	<i>clapse</i>	<i>claspe.</i>	247	3	<i>Chapher</i>	<i>Chapter.</i>
51	15	<i>an</i>	<i>and.</i>	247	11	<i>Over-rnn</i>	<i>Over-run.</i>
56	3	<i>betwen</i>	<i>between.</i>	248	30	<i>Furniture</i>	<i>Furniture.</i>
63	7	<i>Whether</i>	<i>Whither.</i>	253	7	<i>proceed</i>	<i>proceed.</i>
64	4	doublet of <i>it</i> corrected.		267	16	<i>performance</i>	<i>performance.</i>
65	5	doublet of <i>it</i> corrected.		276	2	<i>haddens</i>	<i>hardens.</i>
65	18	<i>to</i>	<i>too.</i>	294	24	<i>Rnns</i>	<i>Runs.</i>
70	19	<i>Screws.</i>	<i>Screws.</i>	297	6	<i>will</i>	<i>will.</i>
77	15	doublet of <i>muck</i> corrected.		303	15	<i>Wot</i>	<i>Wat.</i>
87	17	doublet of <i>the</i> corrected.		304	26	<i>Srrong</i>	<i>Strong.</i>
89	1	<i>parenthesis</i> inserted.		307	11	<i>is</i>	<i>it.</i>
90	3	<i>in</i>	<i>into.</i>	307	27	<i>Bull</i>	<i>Ball.</i>
92	9	<i>parenthesis</i> inserted.		308	6	<i>Seeps</i>	<i>Sheeps.</i>
103	12	<i>Pnuch</i>	<i>Punch.</i>	322	22	<i>parenthesis</i> inserted.	
120	5	doublet of <i>the</i> corrected.		332	22	<i>the</i>	<i>the.</i>
120	10	<i>a</i>	<i>at.</i>	378	19	<i>to</i>	<i>too.</i>
136	30	<i>peice</i>	<i>piece.</i>	391	8	<i>e</i>	<i>‡</i>
141	16	<i>Bottome</i>	<i>Bottom.</i>	392	9	<i>a</i>	<i>‡</i>
145	9	<i>he</i>	<i>the.</i>	393	6	<i>or</i>	<i>or.</i>
150	24	<i>punch</i>	<i>punch.</i>				

NOTES

TITLE. At the Sign of Atlas. In Moxon's time the houses in London and elsewhere were not numbered. A house of business was specified and identified by a sign painted with some peculiar device that could be recognized by people who could not read.

THE PORTRAITS. Satisfactory authority cannot be given for the accuracy of the portrait of Gutenberg. Moxon copied it from an earlier German book. The portrait of Coster is a copy of the print first shown by Scriverius in 1635. Van der Linde doubts its genuineness. The portrait of Moxon may be accepted as truthful. It first appeared in the fourth edition (1686) of Moxon's "Tutor to Astronomie and to Geographie."

THE DEDICATION. "The Right Reverend Father in God, John, Lord Bishop of Oxford and Dean of Christ Church," was Doctor Fell, one of the three persons to whom this work was dedicated. Doctor Fell had commended himself to men of letters by a recent gift to the University of Oxford of printing materials of great value. In a report written by him in 1679, he mentions "the low estate of the manufacture of printing" in England, and in the University, as the motive that induced him and associate members of the University, in 1672, to take "upon themselves the charges of the press in the said University, and at the expence of above four thousand pounds furnished from Germany, France and Holland, an Imprimery, with

all the necessaries thereof, and pursued the undertaking so vigourously, as in the short compass of time which hath since intervened to have printed many considerable books in Hebrew, Greek and Latin, as well as in English; both for their matter and elegance of paper and letter, very satisfactory to the learned abroad and at home." Bagford said that the printing material so presented by the Bishop could not be equaled by any of the great printing-houses on the Continent. A specimen sheet of the types of the Oxford University Press dated 1695 fully warrants this assertion. The types, punches, and materials then given by Bishop Fell are insufficiently described by Rowe Mores in his "English Typographical Founders and Foundries," on pages 44 and 45. A brief description of the Oxford Press as it now is, with suitable illustrations, was published by the Oxford University in 1894.

Bishop Fell was equally interested in paper-making. He encouraged George Edwards, "a cutter in wood of the great letters," and an engraver of maps and other things made use of in the printing of books, to set up a paper-mill at Wolvercote. Bishop Fell died in 1686. Tom Brown made him the subject of his famous epigram:

I do not love thee, Doctor Fell,
The reason why I cannot tell;
But this alone I know full well,
I do not love thee, Doctor Fell.

2, 3. THE ORIGIN OF THE INVENTION. Moxon's notice of the invention of typography records a general belief of the writers of that time. The Coster legend had been published, but it was not accepted as unimpeachable history. The weight of authority favored the claims made for Gutenberg. The "Tullies Offices" (Cicero, *De Officiis*) of 1465, printed by "Johanes Hust" (Fust) and "Petri de Geurshem" (Peter Schoeffer of Gernsheim), is one of the later books of these printers. The book generally received as the one first printed is the Bible of Forty-two Lines, which is at least ten years earlier. It is accepted as the production of John Gutenberg, John Fust, and Peter Schoeffer. Its claim to priority has been disputed in favor of the Bible of Thirty-six Lines, accredited to John Gutenberg only.

Discredit is now given to the legend of the introduction of printing in Oxford in 1468 by Frederick Corseles. "The Dictes and Sayinges of the Philosophers," printed by William Caxton at Westminster in 1477, is considered as the first book printed in England. The claims of Coster have been thoroughly sifted by Dr. A. W. Van der Linde, and his earlier writings on this subject have been translated into English by J. H. Hessels and published under the title of "The Haarlem Legend." The claims of Caxton are fairly reviewed by William Blades in his "Life and Typography of William Caxton."

6, 7. THE BRANCHES OF TYPOGRAPHY. The specification of Letter Cutters, Casters, and Dressers, of Compositors and Correctors, Pressmen and Ink-makers, and some other trades, indicates the complexity of the complete art of printing in 1683. The workmen in each one of these trades tried to keep it distinct, and to prevent its practice by any but those who had been qualified by regular apprenticeship. There were few master-printers who had even superficial acquaintance with the methods and usages of the different departments of typography, and their general ignorance tended to the degradation of the art. The ordinary book of the seventeenth century was distinctly inferior to a book of the same class of the sixteenth century that had been made from the beginning under the direction of a master "who could perform or direct others to perform" all the work upon it. It was for the purpose of diffusing a proper knowledge of the different processes among master-printers that this book was written.

ADVERTISEMENT on page 8. The plot here mentioned was the one revealed by Titus Oates, who gave false details of an alleged conspiracy to kill Charles II, King of England, and to reestablish the rule of the Roman hierarchy.

This advertisement is a side-light of value on the methods of the book-selling trade. Moxon foresaw that the cost of the complete book would be too much for the ordinary buyer. He tempted subscriptions by offering it in monthly parts: "2d. for each Printed Sheet. And 2d. for every Print taken off of Copper Cuts." At these rates the complete book on printing, unbound,

then cost 14*s.* 4*d.* The publishing of a book in parts was an old expedient to increase sales. I first note it in an edition of the Bible in Hebrew, published by Robert Stephens of Paris between the years 1539 and 1544.

Copper-plates were preferred for the illustrations because they could be engraved and printed more neatly and at a smaller expense. The arts of engraving on wood and of woodcut press-work were then in their lowest condition, and Moxon foresaw that his illustrations engraved on wood would not be properly printed.

9. PRINTING-HOUSE. Although "printing-house" is still used in England as a proper designation for the workshop of the master-printer, the term "printing-office," which is more common in the United States, has equally good authority. Many of the early printers called their workshops by the Latin name of "Officina." A book before me by Jodocus Badius, dated 1513, has the imprint "In Officina Ascensiana."

10. THE CASES AND PRESS. The allowance of "four foot and a half by five foot and a half" for every pair of double frames or stands is the same as that established by modern usage. The allowance of seven feet square of space for each press, which necessarily includes the bank, and working-room for the two pressmen, seems small. It indicates a press for the printing of a sheet not larger than fifteen by twenty inches. The caution to put the presses upon a solid foundation, and to brace them with beams against the ceiling and side walls, shows that provision had to be made for the shrinking of the wood and for its imperfect construction.

11. WINDOWS of glass were unusual. Paper (probably oiled) to admit the light was the only defense against cold, which was sometimes so severe that work had to be suspended. Then, as now, printers preferred the upper floors of the building for composition, and these upper floors were usually lighted by small windows near the ceiling. The English printing-house of the seventeenth century was rude, bare, and small. It was a large printing-house that had four hand-presses and a dozen frames.

13. FONT. Moxon's etymology is not approved by recent dictionary-makers, who tell us that font is derived from the French *fonte*, a casting, through *fondre*, to melt or to found. Font is now used to describe a complete collection of founded types. The English face here mentioned as opposed to the roman and italic must be understood as old English black-letter.

14. SIZES AND PROPORTIONS OF TYPE. Ten bodies of type are specified as a full assortment of sizes from pearl to "great-cannon." Within this limit American and English type-founders now make twenty-one sizes, as well as some smaller and many larger sizes beyond the limit. The dimensions of the bodies here specified are irregular fractions of the English linear foot. An accurate or standard foot measure was not easily procured, and the irregular subdivisions of the foot were calculated with difficulty and often with error. Types so made were unavoidably inexact; when made in different foundries they did not accord in size, and there was often serious disagreement in the bodies of the same foundry when the types were cast at different times. For a specification of these variations, see Savage's "Dictionary of Printing," page 802, and any recent English work on practical typography.

Pick is the name given to any bit of dirt that falls in the counter of a type, and fouls the print.

The geometric rules for the proportions of letters as laid down by Moxon and other theorists are impracticable. They make no provision for the meeting of irregularly shaped letters and no allowance for optical illusions. To make letters seem harmonious and symmetrical in combination, some characters must purposely be out of drawing.

The commendation of Christophel Van Dijck (Christopher Van Dijk) is approved by modern bibliographers and printers. Willems, in his "Les Elzeviers," rates him as the leading punch-cutter of his time, and as really superior to the famous French founders Sanlecque and Le Bé. The beauty of his designs, and the merit of the type made by his Dutch successors in type-founding, secured to them the practical control of the English market for more than a century. During Moxon's time, and for many years after, British type-founders bought most of their

punches and matrices in Holland. William Caslon, who began as a type-founder in 1720, was the first English punch-cutter who broke the domination of the Dutch type-founders in England.

It was the first purpose of the writer of these notes to have this book reprinted in the Dutch types that served Moxon for models. Unfortunately, they were not to be had. They were in the Enschedé foundry before 1735, but at that time they had been put aside as old-fashioned and unsalable. M. Fleischman, a German punch-cutter intrusted with the management of this foundry, had destroyed as useless old metal most of the Van Dijk punches and matrices. This wanton destruction should not prejudice the reader against Fleischman, for he was an expert punch-cutter, although the originator of a bad school of typography. It was from him that Bodoni of Italy, Didot of France, and Baskerville of England, drew their erroneous notions of the superior beauty of over-sharp hair-lines. This peculiarity is clearly shown in the new types of the specimen-book of the Enschedé foundry for the year 1786, which contains a portrait of Fleischman, and signed and dated specimens of his work at that time.

15. THE FACE OR STYLE OF VAN DIJK TYPES. ". . . the commodious Fatness they [the Van Dijk letters] have beyond other Letters, which easing the Eyes in Reading renders them more Legible." The word "fatness" cannot be understood as printers now accept the word, for the Van Dijk letter would now be rated as thin and much below the present standard of width. It was supposed to ease the eyes in reading because the interior counters of the small or round letters like e, o, and m had been enlarged, but this enlargement was most in height.

". . . the true placing their Fats and their Leans" means the extension of thick-stroke to the corresponding shortening of hair-lines, as may be seen in a comparison of the old-style m with a modern m. This improvement was modified by Fleischman and his successors. He protracted the hair-line and shortened the thick-stroke, showing his own skill as a cutter, but seriously damaging the legibility of the letter. This unwise fashion is still in force in nearly all types of modern cut. The bold and sturdy types of William Morris, and the Jenson types

of the Dickinson foundry, are practical protests (possibly too emphatic) against the effeminacies of the modern school of weak and delicate letter.

"... the sweet driving them into one another" I understand as the close fitting of the different letters. This close fitting or narrow set for each type, with a corresponding thinness of face, made a composition unusually compact. The novelty of this new style was most admired by French type-founders, who have never allowed it to go out of fashion. Fournier, in his "Manuel Typographique," shows compressed types of many sizes, which he says are "in the Dutch style." The type used by Moxon in his book is of the same English body as the type in which this reprint is set, but the Moxon face is a trifle taller and much more compressed.

The uniformity or geometrical accuracy of proportion that is here commended in all sizes of Van Dijk types could not have been made by careful drawing. Yet it does not appear that Moxon had instruments of precision that could measure with exactness any fraction smaller than the thirtieth part of an inch.

16. THE COUNTERS OF TYPES. The deep cut or counter recommended for punches is correct instruction, but deep counters were uncommon. The punches that I have examined in the Plantin-Moretus Museum have relatively shallow counters. Fertel of St. Omer, writing in 1723, denounces the shallow counters then made by all founders as a cause of the bad presswork of French printers. Even Fournier ("Manuel Typographique," vol. i, p. 12) says that a counter "about one fourth of a line" (.0222 of the English inch) is deep enough for types between nonpareil and long-primer or pica. No modern printer would be satisfied with a counter of this depth.

17. TYPES MADE FOR BOOKS. The few bodies of type then made were for books only, and were provided in small fonts. The types most largely cast now are those intended for newspapers: brevier, minion, nonpareil, and agate, and they are provided in fonts of many thousand pounds. Italic, which then made at least one third, is now but one tenth of the entire weight of the font. In many morning newspapers italic is excluded.

THE BEARD of a type was the long sloping shoulder that connected the face with the body. The square and high shoulder of modern types, which is of recent invention, is indispensable for the proper moulding of types composed for stereotype work.

18. DECAY OF ENGRAVING ON WOOD. "Few or good Cutters in Wood appear." The decadence of engraving on wood is plainly indicated by Moxon's choice of copper-plate for all his illustrations. The imperfect methods then in use for making brass rules are also illustrated on many pages of his book, where they show rules of unequal height and uneven face.

THE "PLANISHING" OF BRASS RULE was the rolling of the metal in sheets before it was cut in strips type-high.

19. THE LAY OF THE TYPE-CASES. The illustration of the type-cases in plate 1 is apparently of a case in one piece, but the text distinctly says that two cases were used, an upper and a lower, as is customary now. The dimensions of the case, "two foot nine inches long, one foot four inches and an half broad," are almost like those of the modern cases. These two cases were unwisely placed on the stand at the same inclination, so that they seem as one case in the illustration. The capital letters are unhandily put in the extreme left-hand corner of the upper-case. Arabic figures are at the foot of these capitals. There are no small capitals, but the boxes of the right side of the upper-case, of easiest reach, are filled with accents and astronomical signs. The copy of the compositor was laid over these boxes that were seldom used. To keep the copy near to the compositor's eye, the hand in search of frequently used capitals had to make a needless length of reach.

The lay of the lower-case, as shown in plate 1 (b, c, d, e, f, g, in the upper row of large boxes; l, m, n, o, p, q, in the second row; r, t, u, in the lowest row), is an indication that the first printer laid the letters of the lower-case as we now lay the capitals of the upper-case, in alphabetical order. When it had been demonstrated that the letters were unequally used, and that the characters in most request should be near the compositor's hand, the letters a, h, and the thick spaces took the places occupied by

sorts not so often needed. The lay of the case and the size of the boxes in Moxon's plan, and indeed in all modern plans, are not in proper position or proportion to give the greatest convenience to the compositor. Many attempts have been made to correct these faults, but none have succeeded. In this plan, as in other plans maintained by compositors of our time, tradition is stronger than reason. To this day the larger boxes of modern cases contain the same sorts and are in the same position as those of Moxon's plan.

25. THE GALLEY described in plate 2 is the modern slice-galley. The long tray-galley of wood and the long proof-galley of brass are not mentioned. It must have been customary for each compositor to make up his matter on a slice-galley as soon as he had completed his page. When composition was so managed the difficulty of keeping two or more men at work on the same book must have been great.

28. A CORRECTING-STONE "four foot and an half long, and two foot broad" . . . as "a convenient size for the generality of Work" is another indication of the small size of the forms.

28. SCABBORD is an old spelling of scabbard or scale-board, which was once a thin strip or scale of sawed wood. The difficulty of sawing wood to uniform thickness led to the use of strips of thin iron, which were cheaper and more even as to thickness. The name that had been given to the wood was continued for the iron. Scabbards were also used as aids in justifying forms and in making register. The scabbards mentioned in printers' grammars of the last century were of cardboard or millboard.

GUTTER-STICKS are so called because of the groove cut in the center, constructed after the fashion of a gutter for the drainage of water. The groove was needed to prevent the bagging of the tympan and the blacking of the white paper in the operation of presswork. The grooving of gutter-sticks is still maintained, although there is now no need for the groove.

QUOINS "about three inches square" are not to be found in any modern printing-office.

31. THE "DRESSING-BLOCK" is now known as the planer, but the form of planer now in greatest use is usually two and one half inches high and eight and one half inches long.

"SHEERS, such as Taylors use," were common tools in all printing-houses fifty years ago, but they have been supplanted by simple machines that cut brass rule with more accuracy.

32. THE EARLIEST COMPOSING-STICKS were veritable sticks of wood. The Plantin-Moretus Museum, at Antwerp, has preserved several of these venerable implements. The stick illustrated by Moxon with a bottom plate, which he calls the back, is one inch narrower than the stick now used in English and American printing-houses. In other features no serious difference can be noted. The sliding measure, now known as the knee, was then made in two parts for the composition of type in two distinct measures—one for the text and one for the marginal notes. The iron would now be adjudged too thin, and the soldering on of a head-plate of long-primer thickness would not be tolerated. The suggestion that the sliding measures, or the knees, could be filed when they proved untrue leads us to the inference that these frail composing-sticks soon became inexact.

34. A CHASE "two and twenty inches long and eighteen inches broad" is the proper size for a form of crown paper fifteen by nineteen inches. This, we must suppose, was the size of paper in greatest use. The construction of the Moxon chase is substantially like that of the modern chase, but the iron used was thinner, and the method of hand-filing recommended for the making of squares and dovetails could not have been entirely satisfactory. The old chase must have been weak and easily bent or twisted out of square.

37. THE PRESS in greatest use in England during the first half of the seventeenth century is the one shown in plate 3 and properly stigmatized by Moxon as a "make-shift slovenly contrivance." The press that he approves and illustrates in plate 4 is the "excellently improved invention" of Willem Jansen Blaew, but it received no noteworthy improvement during the eighteenth century. In all its more important features it

was the press on which Benjamin Franklin worked in Philadelphia and in London. It is now entirely out of use, and the technical names of its different parts are imperfectly understood and are often misapplied. Before study is made of the function of each part, the novice should understand the combined action of the different parts.

The form of type to be printed was placed on the bed, or, as it was then called, the stone (marked *l* in plate 4). The surface of the type was inked by dabbing it over with the inking-balls, which are shown on the left side of the wooden cheek of the press. The ink was evenly spread over the surface of the balls by rocking their opposing faces against each other in many directions. When the type was fairly covered with a film of ink, the damp sheet to be printed was laid upon the tympan (marked 5 in plate 4, where it is shown in very bad perspective), which Moxon calls the tinpan. The pressman then folded down the frisket (marked 6 in the plate and incorrectly drawn), so that it would lie flat upon the tympan. This frisket had been previously covered with a sheet of stout paper in which openings had been cut to allow the face of the types to meet the sheet to be printed. This mask of paper protected every other part of the sheet against a possible blackening of ink. The pressman then folded down the tympan so that it rested flat upon the form of type. This done, with his left hand on the rounce handle projecting from the wooden bridge (marked *y* in plate), he drew the form of type half way under the platen (marked *c* in plate), which, it should be noticed, is one half the size of the stone and of the form of type upon it (not shown in plate 4). With his right hand on the bar (marked *q* in plate) he pulled this bar toward him. This pull moved downward the screw and its attached spindle (marked *i l m* in the plate). The pressure so made, resisted above by the head *e*, and below by the winter *d*, was received by the platen and transferred to the paper and the types that were directly under the platen. This pressure printed one half of the sheet. Then the pressman put back the bar, and with the rounce handle moved forward the stone with the type upon it until the unprinted half of the sheet was covered by the platen. This done, he again pulled down the bar and completed the printing of the unprinted half of the sheet. Reversing the motion of the rounce handle, he

drew backward the stone and type, unfolded the frisket and tympan, and removed the sheet that was printed on one side. This seems, and it really was, slow work; but all books printed before the year 1800 were made by this slow method. In all presses made in England before 1800, two pulls of the bar were needed to print a full sheet on one side. The press was not sufficiently strong to print properly a full sheet of demy by one impression. The power produced barely sufficed for the printing of the half-sheet. The minuteness of the directions here given concerning the construction and the fitting up of the different parts shows that rigidity of fitting was regarded as of importance. Yet it was foreseen that the press would leak pressure.

38. WILLEM JANSEN BLAEW, a map-maker and printer of eminence, was born in Amsterdam in 1571, and died there in 1638. His improvements to the press were made in 1620. As the Blaeu press is now obsolete, I do not think it necessary to follow Moxon in a more minute explanation of the minor parts of his press.

PRESS-BUILDING was not a distinct trade in 1683. Every printer had his presses made to order from his own plans by a local joiner or carpenter, aided by a blacksmith or machinist. The bed-plate was of stone, and the platen of wood. Iron was sparingly used, and only for spindles, hooks, nuts, screws, bolts, etc., that could not be made of wood. Iron was of high price, and was cast or forged with so much difficulty that no one dared think of it as a proper material for the framework or for any of the larger pieces of the press. The pasting down of the vellum on the inner side of the tympan (now known as the drawer) was done to prevent the bagging or bellying outward of the outer tympan. The brayer of flat face was practically a wooden pestle. Its office was to distribute the ink on the block before it was taken up by the balls. This work is now done much better by a cylinder of wood, which still keeps the name of brayer.

59, 60. Moxon estimated that one quarter turn of a home pull of the bar lowered the spindle five eighths of an inch. In the pressure so given, only one fiftieth of an inch ("the Form

to the Stone half a Scabbord") was taken by the type, and about one twelfth of an inch by the paper, tympan, and blankets. This shows waste of power, even when impression was aided by an elastic spongy blanket. The greater part of the force exerted leaked away and was lost in the yielding wood and the compressible joints. A mechanician will see at a glance that a press so constructed could not exert more power than the printing of two octavo pages of type at one impression, and that it would fail entirely to face the black background of a large woodcut.

68. It does not appear that the stone was tested by a straight-edge or by a spirit-level. Many of the stone beds in use during the seventeenth century were uneven as to face and badly leveled, and compelled the pressman to make use of an elastic impression. The frequent breaking of the stones complained of by Moxon was due as much to bad leveling as to the carelessness of the pressman. His preference for the wood lignum-vite was reasonable.

69. A PLATEN OF BEECH-WOOD was liable to warp and split, but a more suitable material was rarely used. The only attempt at improvement known to the writer was made by Christopher Plantin of Antwerp, who had his platens covered with sheet copper to cover the cracks in the wood, and to hide the faults they made in impression.

70. THE POINTS AND POINT-SCREWS are old devices that were used in the fifteenth century. One can find the marks of point-holes in leaves of books printed by Ratdolt and other careful printers of that period.

72. One of the most useful improvements made by Blaeu in his new press was the provision of leather girths, one end attached to the carriage, and the other to the barrel around the spindle. With a rounce handle on the end of this spindle, the pressman could easily run in and out the carriage with the type upon it. The first presses did not have this improvement. It is not to be seen in the woodcuts of the presses of Aldus, Badius, and other early printers. (Compare the cuts, plates 3

and 4.) It seems that the carriage of the older form of hand-press must have been shoved in and pulled out by lugging at the framework of the carriage.

73. THE LY-E-TROUGH, shown in plate 9, was in use fifty years ago as a wash-trough. The form of type, laid flat in the bottom of the trough, was drenched with water by rocking the trough to and fro.

74. THE PAPER-BENCH is now made with an inclined bank at the end nearest the pressman. This inclination aids him in seizing the sheet to be printed. On the flat end of the bench he lays the paper after it has been printed.

THE RACK to hang paper on, and the PEEL, illustrated in plate 32, are now unknown in many American printing-houses, which is much to be regretted. The development of printing that has put the wetting and dry-pressing of paper out of fashion, and has brought into general use the method of printing on dry paper against an inelastic impression, is not an unmixed benefit. The new method has quickened and cheapened common press-work, and has been of great advantage in the printing of fine woodcuts, but it has not bettered the presswork of books. The strong and readable print that was common at the beginning of this century is now produced with greater difficulty and at more expense upon dry paper.

75. CONCERNING INK. The very minute description here given of the preparations for making the varnish of ink, which was badly done then in England and better done in Holland, should be enough to correct the common belief that the printing-ink of our predecessors was of better quality than the ink of our time. It is not necessary for the reader to be an expert to note that the materials were crude and the processes unscientific. No test of the quality of the linseed-oil is suggested, which must have been as uneven then as it is now. Nor is anything here said concerning the black, which was probably the crude smoke-black of commerce, with its usual taint of sulphur and other impurities. The cheap printing-ink of our time, even when made by a manufacturer of low repute, is more scientifically

compounded, and is blacker and better, than the ink used by the ordinary book-printer of the seventeenth century. In Moxon's book the ink is variable—on many pages pale, on others over-black; and there are variations of color not entirely due to uneven inking by the pressman. A weak ink applied to a bold type, and printed on wet paper against a spongy impression, seems blacker in print than a better ink printed on dry paper against an inelastic impression.

Resin was the only ingredient added to the black and varnish. No mention is made of other substances that are now rated as of great value.

85. LETTER-CUTTING was always enveloped in mystery. Every new practitioner had to devise many of his own tools and work out his own methods, and independent action led some cutters into serious error. Others, unhampered by traditional rules, introduced new methods. Moxon has frankly told us all about his tools. Some of them may have been invented by himself, but more of them were those of contemporary English and Dutch punch-cutters and of the makers of mathematical instruments. His descriptions of well-known tools like files, rules, or liners need no comment, but our surprise is aroused at their simplicity, and more than all, at his ignorance of tools of precision. Here and there he does mention the magnifying-glass, but nowhere does he speak of a micrometer. He had no unit as a base for measurement. He frequently describes a measure as a half inch, or as a quarter inch, rarely as an eighth inch. A sixteenth or thirty-second of an inch is never mentioned in these words. It is a proper inference that his measuring-rule was not so minutely subdivided. These nicer subdivisions had to be determined and marked by himself on measuring-rules of his own construction, and he must have done this work very well. To divide the body of English in forty-two equal parts is to make each part equal to about $\frac{1}{400}$ of an inch. One forty-second part of long-primer body would make each part about $\frac{1}{750}$ of an inch. His method of determining the width of these parts was to make, by rubbing on a stone, seven thin spaces equal to the em quadrat, or square of the body. The full point or period was one and one sixth of this thin space; the colon, one and two sixths; the

comma, one and three sixths; the hyphen, one and four sixths; the semicolon, one and five sixths. These were practically his testing measures, which were transferred to the plate he called his face-gauge. The modern punch-cutter will be amazed at the crudity of Moxon's tools and methods; but crude as they were, they served him for making types that did good service. Nor does Fournier, in his "Manuel Typographique" of 1766, mention any tool of precision. A testing of distrusted types must have been done largely by sight and touch.

118. THE SWASH-LETTERS here mentioned are capitals that show the writing-master's flourished extension of line. In many letters these lines hang over the body, as in the old form of roman capital Q. They are most common in old italic, and are fairly illustrated in plate 15.

119. EMERICK, emery.

120. MR. WALBERGER OF OXFORD is the Peter Walperger or Walberger of Holland who was installed by Bishop Fell as a punch-cutter for the University Press, and who there earned the reputation of a good workman. He died in 1714.

124. STEM is the thick-stroke of a letter, sometimes called by type-founders the body-mark.

125. ENGLISH LETTER, as mentioned on this page, means Old English, or black-letter.

Moxon's notions of proportion for the variable thickness of the stems or fat strokes of letters were tabulated by allowing forty-two equal parts as the height of the body. The thickness or the width of the stem in a roman capital should be five of these parts; in an italic capital, four; in lower-case roman, three and a half; in lower-case italic, three. These distinctions are nicer than those laid down by Albert Dürer in his diagrams on the proper proportions of letters, where it is stated that the width of the stem should be one tenth the height of the body, which is in the proportion of four and one fifth to forty-two. These proportions are no longer maintained. The stem is

now made of variable thickness to suit different styles of letter; sometimes it is in the proportion of two to forty-two, and sometimes ten to forty-two. The rule that the stem of the roman capital should be wider than that of the lower-case, and that the stem of the italic capital should be still thinner, has been generally observed in all type-foundries.

No defined width is made for the thin-stroke, which is now called the hair-line; but a glance at the diagrams in plates 11 to 15 is enough to show that this hair-line had a positive and appreciable width for its height. It was well understood also by all punch-cutters that this thin-stroke would appear in print much wider than it did in the punch. The elastic blanket that forced the wet paper not only upon the type, but lapped it around its edges, made the thin-stroke appear in print at least one half wider than it was in the punch or in the type.

129-147, and plates 18 and 19. The type-founder's mould is peculiar to his art. It consists of two large pieces of steel, forming when combined an upper and an under side, so fitted to each other that types of different widths, from the thinnest space to the broadest quadrat, can be cast in its central hollow space without any change in the depth of the body. Each piece has firmly fixed attachments of many smaller bits of steel to insure this exact adjustment. Types may have been cast at a very early date in fixed moulds of sand, but types so made must have been expensive, of irregular body, and exceedingly variable in line, and could not have been combined with the accuracy that is indispensable to the easy practice of type-setting. The usefulness of typography really depends upon the squareness and geometrical accuracy of each type. A variation of one thousandth part of an inch in body is fatal. Early writers on typography did not clearly describe the mould, but they have put on record their admiration of the mechanism devised for the "wonderful art of letter-making," and the "admirable proportion and harmony between the letters." The mechanism that produced this accuracy was without doubt the mould.

The early type-mould was probably made adjustable in two directions, so that it could cast two or more bodies of type. The Bruce foundry of New York has a mould of this descrip-

tion of unknown age. Its peculiar construction explains slight variations of body in types of the same face, made by the same printer during the infancy of the art. This adjustable mould went out of fashion in the sixteenth century, but it was retained in many foundries as a mould of value for emergencies. The mould of fixed body, adjustable as to width only, has always been preferred.

Fournier says that the early moulds of Germany and Holland were of brass. Moxon's mould was of iron. They are now made of steel, with a precision of fitting unimagined by any early founder. The most valuable improvement made in this mould was devised by Archibald Binny of Philadelphia, who, in 1811, affixed a spring to the matrix that gave to it a quick return movement after the type had been cast out of the mould. Many attempts have been made to alter the mould so that it could cast two or more types at the same time. Didot's polymatype mould, made to cast fifty types at one operation, is the most notable; but it can be used only on very small type, and it is not approved by English or American foundries. The mould attached to type-casting machines in most use is, in its more important features, the mould used by Moxon. The new Barth type-casting machine has a mould of different construction, but without great change in principle.

135. GEAT is the old spelling of the word jet, or the waste metal that, in cooling, clings to the type at the orifice in which the hot metal is poured. The separation of this ragged bit of metal from the cast type is known as "breaking off the jet."

142. Properly made, the two halves of the mould should fit so close as to be air-tight; but a too close fitting will not allow the escape of the air from the mould when the fluid metal is injected. An imperceptible slackness in fitting is necessary to allow the escape of the air at the joints. With this escaping air goes out also, at these joints, a thin feather-edge of cooling metal, then known as the rag.

THE JUSTIFYING OF THE MOULD was done without gauges. The types cast were tested by setting them up in parallel rows, one row head up, and one row feet up. If one row overlapped

the other, the fault could be felt by a nice touch. The test of squareness was made by holding two types, nick to nick, between the eye and light. If a glimmer of light appeared, the mould was in fault. To the modern founder these seem tests of great crudity, but they were adjudged good enough.

145. THE DAWK was a slight concavity or depression in the body of the cast type, made by a corresponding convexity in the mould. For the correction of faults Moxon allows the use of the file upon the mould with a freedom that must provoke the surprise of every modern mould-maker. For a modern type-caster to file a mould after it has been adjusted is now regarded as a blunder worse than a crime; yet Moxon says that accuracy need not be expected on the first, or even the seventh, time of testing. The workman must mend "on, on, on, by a little at a time, till at last it is so finisht." The underlaying of different parts of the mould with an "assidue," or thin plate of brass, as is here recommended, is evidence that the mould was often filed recklessly and to its injury. In no reputable modern foundry or machine-shop would this tampering with a mould be allowed. The straight-edge, the square, the eye, the fingers—these seem to have been the only available tools of precision.

149. MATRICES. Soft copper is recommended because it is not liable to break the punches; but soft copper is not durable. Continued spurts of hot metal against a soft copper matrix soon blunt its edges and finer lines. Modern founders find it a wiser economy to use hard rolled copper, and risk the breaking of punches. Very large types are sometimes struck in copper softened by heat, but this is not regarded as good workmanship. A matrix made by the electrotype process, or by the use of a perforated copper plate riveted upon another solid copper plate, is preferred.

COUNTERS. A thick space, or one third of the square of the body, is made the proper depth for the sinking of a matrix, but this depth was not always secured. The fear of breaking the punch made early founders cautious, and their matrices were sunk to a depth of one fourth or one fifth the square of

the body. When the counter-punch had been made correspondingly shallow, the counter of the cast type and the beard outside the letter were often blackened by the inking-balls, and dots or spots of ink were transferred with the print to the wet paper. Fertel, a French printer of 1723, says ("La Science pratique de l'Imprimerie," page 4) that the counters of some new types were of no greater depth than the thickness of a sheet of strong paper.

153. THE JUSTIFYING OF THE MATRICES is one of the nice operations of type-founding. Each matrix must have a free movement to and from the mould, but it must fit snugly to the nicest fraction. All the matrices for the same font must occupy a prescribed position upon the mould, exact as to top, foot, and sides. A slight deviation puts the types cast therefrom perceptibly out of line, or makes them crooked, with more space on one side of the character than on the other. Nor is this all. The face of the letter in the matrix must be in exact parallel with the face of the outer plate and the face of the mould. If higher at one side than at the other, the type cast therefrom will have a corresponding unevenness of height. If the distance between the outer surfaces and the faces of the letter is not the same in all the matrices, the types will be of uneven height.

It is a marvel that early type-founders did so well with their imperfect methods. The commonest fault was making the matrix too low, so that the types cast therefrom would be low to paper. As the remedying of this defect calls for an entire section on the botching of matrices, it may be inferred that a certain amount of botching was considered unavoidable. The press of the early printers seems to have been constructed to hide irregularities of height in type that were then thought unavoidable.

164. MAKING METAL. The melting-point of lead is about 617° and that of iron is about 2100° . At the greater heat lead is destroyed as a metal. It is possible to incorporate lead with iron, but it cannot be done by the process here described. The only useful office performed by the stub-nails was to deprive the antimony of its excess of sulphur, which was incorporated,

undetected, with the dross and the slag. The proportions are not clearly stated: "For every three pounds of iron, about five and twenty pounds of lead." The exact quantity of antimony is not stated. In the second paragraph it is said that the iron and antimony are equal as to weight. Were the ingredients twenty-five pounds of lead, three of iron, and three of antimony; or twenty-five pounds of lead, and three pounds of mixed iron and antimony? No mention is here made of tin or copper. The lead gave to the alloy softness and easy-working qualities; the antimony hardness and stiffness; the iron was intended to give hardness.

169. THE CASTING OF LETTERS by the hand-mould was slow work. Four thousand types a day was the average performance. It was also hard work. To "face the type"—to make the liquid metal forcibly splash against the face of the matrix—the caster, as Bernard truly says, must make the contortions of a maniac. If it were not forcibly splashed, the type would have a defective face. The jerk or twist given to the arm was one of skill as well as of strength. It often happened that strong men were never able to acquire this knack. They might work hard all day, apparently going through all the motions, and yet be unable to make perfect types. The smaller the body of the type, the harder must be the jerk of the arm.

175. TIN. When types did not come with a good face, the caster put tin in the metal-pot, to make the metal fluid. This is the only mention of the use of tin as an ingredient, and it seems to have been used only to lighten the work of the caster.

THE RAG, or feather-edge of thin metal made by the windage or escape of air at the joints, was rubbed off on a grindstone. This method of rubbing could not be employed for types like f or j or f, which overhang the body: the rag on these letters was more slowly taken off with a scraping-knife.

192. THE PLOWING OF A GROOVE at the bottom of the type was the next process. No mention is made of an inspection of the type for the detection of faults of casting, as is customary in modern type-foundries.

197, 198. COPY. This introduction is obviously the out-growth of some painful experiences with authors. "By the Laws of Printing, a Compositor is strictly to follow his Copy." This law presupposes that the copy is always correct — a supposition as untenable now as it was then. Moxon admits that the compositor should amend bad spelling and pointing, and use capitals and italics with sense and reason, even if he has to deviate from copy. The standard of typographic style is much higher now. The compositor of to-day who undertook to reset this book in modern style would be required to cut out all the italics and more than half the capitals, readjust the punctuation, correct the spacing, make uniform the spelling, and remodel the headings and the make-up.

199. CASES. These directions for the papering of the cases indicate that many were of unseasoned wood or insecurely jointed. It is not probable that the different parts were dove-tailed or fastened with screws.

201. WASHING OF FORMS. The proper method of washing a form, as described on this and following pages, warrants the supposition that very thin ink must have been used, and that this ink must have flowed or spread downward on the spaces and quadrats and between the letters in loosely justified lines.

207. DISTRIBUTION. In these prolix directions concerning distribution, it seems that a composing-rule was not used to uphold the type. The compositor made use of a reglet for the purpose.

212. THE GALLEY here described was a quarto slice-galley, placed upon the ledge of the upper-case at the right hand, covering the boxes for signs and double letters, which were the characters supposed to be in least use. If the galley had been put in a sliding drawer, upon an inclined shelf under the stand, it would have been as accessible and not so liable to damage.

212. THE VISORUM, or projecting copy-holder, is now out of use. This is to be regretted, for it brought the copy nearer to

the compositor's eye, enabled him to keep closer attention on each line of the copy, and afforded readier access to all the boxes of the upper-case.

214. REGLETS. The rude way in which composition was then done is shown in the second paragraph, in which it is said that compositors many times used reglets instead of brass composing-rules.

218. SIGNATURES. The compositor was required to make up his page as soon as it was composed, and to add the direction, or catch-line, and the signature. The directions for signatures are minute. It was not enough to put the signature letter A at the foot of the first page of the first form. It must be repeated A2 on the third page, as an additional safeguard against the possible carelessness of the folder. If the section to be bound consisted of three or more double leaves, the fifth or seventh page of the section must be appropriately marked with A3 or A4. When these letters followed in numerical order, the folder knew that the folding was correct.

As only twenty-three letters in the alphabet were accepted for signatures (J, U, and W were rejected), the letters could serve only for twenty-three signatures, usually of eight, and never more than sixteen pages. If the book exceeded three hundred and sixty-eight pages, and sometimes a lower number, the alphabet was doubled as Aa. If the book had two or more volumes, the number of the volume had to be added to the signatures. This old method of the trade is still observed in Great Britain. In the United States Arabic figures are preferred for signatures.

The signature was put unhandily in the center of the line, making it difficult to be seen by gatherer or collator. Modern usage now requires that the signature be more conveniently placed for inspection, near the beginning of the white line. A recent fashion is to put the signature near the edge of the tail, so that it can be cut off by the binder. Another fad is to suppress all signatures. This is recommended because signatures are not now found in early manuscripts, but Blades has shown in his essay on this subject that they were always used by all

writers of manuscript books, and that they do not show because they were put at the foot of the page and were afterward trimmed off in binding.

220. **EMPHASIS.** The remarks in the fifth paragraph place Moxon before us as a man who had his heart in his trade. The duty of a compositor, "to make the meaning of his Author intelligent to the Reader," and "his Work shew graceful to the Eye, and pleasant in Reading," is pointedly stated. His methods were well adapted for the time and for prevailing typographic fashions. He confesses that the "mode of ordering Titles varies; as may be seen by comparing the Title Pages of every twenty years: Therefore a Lasting Rule cannot be given for the ordering them: only what has been said in general concerning Emphasis." To suit the taste of that time, print must have emphasis, and plenty of it. Every page was peppered with italic; important nouns and verbs and some that are not important must begin with a capital. For the title-page and the running title roman capitals were not bold or black enough. Recourse was had to black-letter. That there was some system, or attempt at system, in this conglomerate of styles is probable, but Moxon has not explained his rules. We know only that the style of this book is not uniform. A proof-reader of our time who attempted to make it uniform would score every page.

The fashion of displaying print with italic and capital letters died hard. More than a hundred years passed before readers discovered that too much emphasis in the text defeated its purpose, and made the text really harder to be read. Not even yet are all publishers and printers able to see that there should be a difference in the treatment of a poster to be read across the street and of a title-page to be held in the hand; and that there is but little more reason for classifying some words of a title in bold display-lines, and others in petty catch-lines of obscure small capitals, than there would be in treating the words of a sentence in the text in a similar manner.

The uncouthness of many of the titles of the seventeenth century is wrongly supposed by some critics to show the vanity of the printer, who wished to display, as well as he could, the extent of his collection. This supposition has no good foundation. The

printer of that time did not have types enough for the needs of title-pages. Between pica and canon were only six distinct bodies and faces of roman letter, and they were rarely of uniform face. There should have been at least a dozen. These types were inelastic, and could not be neatly compressed or expanded to fit the words of every line. The prominent word or words selected by the author for a leading line might be too few or too many to fill that line. All the printer could do was to space out the letters of a short line, or divide words in the over-long line and put them in two lines. The words had to be accommodated to the type. It was for this reason that large roman lower-case, black-letter, and italic were so freely used. Moxon showed good sense in his preference for capital letters, for "Capitals express Dignity where-ever they are Set, and Space and Distance also implies stateliness." Capitals were then made to one square standard form, and were really unfit for more than half the title-pages for which they had to be used. The variety of large roman capitals provided by modern type-founders is better now than it was two centuries ago, yet it is still imperfect. We have a greater variety of roman faces and more sizes, but not one of them is properly graduated in the larger bodies, as they should be, by a difference of three points only.

The mechanical directions concerning petty details of composition seem needlessly minute, but most of them are good, and are obeyed to this day.

232. OF IMPOSING. As the sheet to be printed in 1683 was always of small size, imposing was a comparatively simple process. But four foldings were made,—folio, quarto, octavo, and twelves,—all of them clearly illustrated by the plates. Some of the simple rules that our author lays down have been unwisely omitted in some modern printers' grammars, viz: An even and an odd page always stand together; the folios of the two pages that stand together make, in their addition, one more than the number of pages in that form.

238. PLANING DOWN. The instruction about this duty is needed more now than it was then. Our author recommends that projecting type be planed down with knocks on the planer

from the closed fist, or with the head of the shooting-stick. Our larger forms require more force, but too much force is often given. The pounding of a form after it has been locked-up with furious blows from a heavy mallet is not warranted.

239. LOCKING-UP. His process of locking-up is not so good. He advises the tightening of each page by the side-stick before that page is tightened at the foot. This indicates the commonness of slack spacing and line justification, for which he suggests the remedy of chewed paper forced into the slack line at the point of a bodkin! He confesses, however, that this is a botchy expedient. The frequent hanging or inward bowing of a page at its foot is usually produced by over-tight locking-up of the page at the side before locking-up the foot.

242. CORRECTING. As proofs could not be taken on galleys, all correction had to be done on the stone, and this was done as it is now, with the destructive bodkin. Unusual tolerance seems to have been given to the practice of overrunning matter in the form—a practice sure to make bad justification.

260. OF THE CORRECTOR AND HIS OFFICE. Moxon requires the corrector to be well skilled in "Latin, Greek, Hebrew, Syriack, Caldae, French, Spanish, Italian, High Dutch, Saxon, Low Dutch, Welch, &c." Nor is this all. "He ought to be very knowing in Derivations and Etymologies of Words, very sagacious in Pointing, skilful in the Compositers whole Task and Obligation, and endowed with a quick Eye to espy the smallest Fault." One may rightfully doubt that any reader permanently employed by any master-printer of the old time had one half of these accomplishments. Moxon's ideal of a corrector seems to have been based on the tradition that learned men had been employed by Christopher Plantin of Antwerp, and the Stephens of Paris. His error was that he mistook their principal duty, which was not so much to correct errors in proof as to prepare copy after its diligent collation with earlier editions or little-known manuscripts of merit. Scholarly work was cheap. Plantin paid his principal correctors lower wages than his compositors. That these correctors did a deal of schol-

arly work is not to be questioned, yet they overlooked many typographical errors. The scholarly preparer of copy and the editorial and critical proof-reader of the sixteenth and seventeenth centuries are now extinct. No living master-printer can afford to pay for the services of even a presuming successor to any one of these worthies. He has to be content with the proof-reader who is "very knowing in Derivations and Etymologies, and sagacious in Pointing."

The signs or marks then used for the correction of proof are fewer in number, but are substantially the same as those in use now.

266. **ALTERATIONS.** The admonition to the author to deliver his copy perfect, and not to hope that he can mend it in proof without additional expense, is an intimation that badly prepared copy is quite as old as printing.

270. **THE FITTING OF THE OLD HAND-PRESS.** This section gives us a curious insight into the defects of the early hand-press. The smearing of tenons with soap or grease; the bracing up of the cheeks, head, and cap, with beams; "the crazy make of the Winter," or the resist to downward impression; "the Under-laying of the Feet"—all these make one doubt whether this press was really "invented upon mature consideration of Mechanick Powers, deducted from Geometrick Principles."

275. **THE BEDDING OF THE STONE** as here described was in bran, but plaster of Paris was sometimes used.

The pouring of water from a sponge on the face of the stone, to see whether it had a "propensitude" for one side more than the other, was the substitute for a spirit-level.

278. **OF HANGING THE PLATEN.** The platen was suspended by whip-cords from hooks. The spindle was steadied in its action by the guide-rods attached to the hose. The adjustment of the whip-cords to the hose, so that they would not be unevenly strained when the spindle descended, was a nice operation that was not always done with accuracy. When unevenly hung the platen gave untrue impression.

281. JUSTIFYING THE HEAD, as here described, was the repacking of the mortises with felt, pasteboard, and scabbard, so that the resist to the impression should be uniform. The mechanic who carefully reads these descriptions of the construction and operation of the press must wonder at the ingenuity of these cross-purposes. The press was made to give impression upon the paper overlying the types, and it must have been intended that the pressure exerted should be confined almost exclusively to the form of types. It should have been rigid and inflexible in every part where pressure might be lost. But we here see that provision was made in the beginning for the escape of the force exerted. Not one tenth of it was felt upon the type. Nine tenths of that force leaked out in the fittings, and really contributed to the needless wearing of elastic or shakily-fitted parts of the press. In important joints one finds elasticity where there should have been rigidity, as well as compressibility in the bed of bran under the stone, in the loosely tenoned head and winter, and in the swinging platen.

287. Additional elasticity was given by the use of a blanket in two folds, or a doubled blanket.

288. MAKING REGISTER. The rude manner in which forms were sent to press is here shown by the directions to the pressman to correct them when out of register from half a nonpareil to a long-primer! He is ordered first to unlock the form and try to get the pages in register by changing the quoins, or by varying the pressure on them, which frequently produced a twisting of the cross-bars. If this expedient did not serve, then the pressman must put in or take out furniture until the pages were in parallel. This was bad practice. The proper usage now is for the pressman to return a crooked form to the compositor, and require him to make the change. Alterations of margins in crooked type-forms should be made on the imposing-stone, and not on the bed of the press.

291. THE UNDERLAYING of wood letters or engravings of any kind that are too low to receive impression is here made another duty of the compositor; but the underlaying or overlay-

ing of types in masses or in patches to correct inequalities of impression is nowhere advised. The spongy blankets were the first and last resort for the correction of this fault.

319. WORKING AT PRESS. Two pressmen were needed for its efficient service: one to ink the type, one to put on the sheet, print it, and take it from the tympan. It was intended that they should be of equal ability, so that they could do either kind of work. The proper product of the press so manned was put at the high standard of a token an hour, or two hundred and forty sheets printed on one side. The work-day was never less than twelve hours, sometimes more. The press was of small size, yet it required much activity to pull a token in one hour, for two pulls of the bar had to be made on each side of the sheet. In the middle of every ream the paper-maker put a cross slip of white paper as a mark or token that at this point one half-ream ended and the other half-ream began. Printers of our time continue the use of the word token as a measure of their work. The full ream printed on both sides is rated as four tokens.

COMPOSITION INKING-ROLLERS came in with cylinder printing-machines. The success of the new machines depended on the rollers. According to Hansard, they were first made by Forster of Weybridge, England, who derived his knowledge of the value of a mixture of glue and molasses as a receiver and transerrer of ink from the Staffordshire potteries, where it was used as an aid in the decoration of crockery.

The first printer in the United States to use composition rollers was Jonas Booth of New York, who made them in 1827.

328. PRINTING IN RED. This paragraph 16 requires careful reading for a clear understanding of the crudity of the old method of printing in red and black. The pressman unlocked the form and picked out all words to be printed in red, filling up the vacant spaces with quadrats. He then printed the black form in the usual way. This done, he again unlocked the form and withdrew the quadrats that had been used to fill the spaces to be occupied by the words in red. At the bottom of each vacated space he put in bits of scabbard as underlays for the types in red. The thickness of the scabbards is not specified, but it

must be understood that they projected a nonpareil or more above other types. The form was then locked up, the red words being in their proper places. A new frisket was cut for this red form, and the red ink was beaten only on the types for red ink that projected above their mates. If the inking-balls slipped and inked any other part of the form, the sheet was protected from smear by the new frisket that admitted through it only the types intended for red. This treatment secured exact register (provided the paper had not shrunk in drying), but the rudely cut scabbards were an uncertain and variable support for the types, and usually made uneven printing. The caution to pull lightly and not print too hard was needed, for the difficulty of fairly inking and smoothly printing types so treated cannot be overrated.

331. PRINTING IN GOLD. Equally unworkmanlike, to our notion, are the directions about printing names in gold and silver. For this neither chase nor press was provided. The type as set in the stick was coated with hard varnish, and then pressed with the hands on wet paper against a blanket on the correcting-stone. This done, the gold or silver leaf was gently pressed on the print!

356. THE CHAPEL. The common belief that the word "chapel" as the trade name of an association of printers in a printing-house is as old as Caxton, and that it was so given from a chapel attached to "the almonesrye at the reed pale" in Westminster Abbey, in or near which Caxton did his work, finds no warrant from Moxon. His explanation is more reasonable: ". . . some great Churchman, or men, . . . for the Books of Divinity that proceeded from a Printing-house, gave it the Reverend Title of Chappel." I find no mention in any book of earlier date of the word chapel as a synonym for a fraternity of printers. Although England is regarded as the birthplace of guilds and fraternities, there is no old record of any association of printers as printers only. The Company of Stationers was an association dominated by booksellers who were more intent on getting and holding patents and privileges for the sale of books than on improving or developing typography. Roger

L'Estrange, the "surveyor of the Imprimerys," writing in 1663, said: "The stationers have subjected the Printers to be absolutely their slaves by so increasing their number that one half must either play the knave or starve." The customs of the chapel among journeymen probably came from Germany. Blades, in his "*Deposito Cornuti Typographici*" (London, 1885), shows that some of the customs of English printers closely resemble the older German customs that are fully described in this curious book.

Thomas Gent, printer, in his "Autobiography" (page 16, edition of 1832), thus describes his initiation in a London printing-house about the year 1714: "On my entrance amongst a number of men, besides paying what is called Ben-money [benvenue], I found, soon after, I was, as it were, to be dubbed as great a cuz as the famous Don Quixote . . . though the insipid folly thereof, agreeably to their strange harangues in praise of the protecting charms of cuzship . . . was not very agreeable to my hearing; yet, when the master himself insisted it must be done, I was obliged to submit to that immemorial custom, the origin of which they could not then explain to me. It commenced by walking round the chapel, (Printing rooms being called such, because first begun to be practised in one at Westminster Abbey;) singing an alphabetical anthem, tuned literally to the vowels; striking me, kneeling, with a broadsword; and pouring ale upon my head; my titles were exhibited much to this effect, 'Thomas Gent, baron of College Green, earl of Fingall, with power to the limits of Dublin bar, captain general of the Teagues near the Lake of Allen, and lord high admiral over all the bogs in Ireland.' To confirm which, and that I might not pay over again for the same ceremony, through forgetfulness, they allowed me godfathers, the first I ever had before, because the Presbyterian minister, at my christening, allowed none at his office; and these, my new pious fathers, . . . were the un-reverend Mr. Holt and Mr. Palmer. Nay, there were witnesses also, such as Mr. Fleming, Mr. Gibbins, and Mr. Cocket, stanch journeymen printers."

In some printing-houses the jocularity and horse-play of the chapel meetings led to drunken revelries and a neglect of business that became intolerable. The chapel undertook to decide

who was a fair workman and who was not. The fairness or unfairness of the workman was determined by his compliance or non-compliance with the rule of an irresponsible chapel. In 1820 the master-printers of London were almost unanimous in opposing the chapel. Hansard says ("Typographia," pages 309, 310) that in most houses it was abolished.

Few of the old customs survive in America. The benvenue and the solaces are unknown even by name to the majority of journeymen compositors. The word chapel is still used: it defines an assembly of workmen in a composing-room who are members of a Typographical Union.

361. WAY-GOOSE. Hansard ("Typographia," foot-note, page 305) quotes Bailey's dictionary for the definition of the word: "Wayz-Goose, a stubble-goose, an entertainment given to journeymen at the beginning of winter." Wayz is the old English word for stubble. A wayz-goose was a known dainty, and the head dish at the annual feasts of the forefathers of our fraternity.

363. THE COMPANY OF STATIONERS is an old fraternity. Long before printing had been invented, the copyists, text-writers, and makers of devotional books of low price, like the Creed, Pater Noster, Ave Maria, etc., were associated, and sold their books in or near those streets of London that still retain the names of Pater Noster Lane, Ave Maria Lane, and Amen Corner. In the year 1403 they were formed into a guild and governed by a master and two wardens. In 1553 they owned and occupied a large hall near St. Paul's Church, which was burned in the great fire of 1666. A new hall was built, and finished in 1670. Hansard shows in his "Typographia" (facing page 237) a print of the building as it then appeared, in which the festivities described by Moxon were celebrated.
