Pagination or rather foliation was first used by Am. Ther Hoernen, at Cologne in 1471, in Adrianus’s *Liber de Remediis Fortuitorum Casuum,* having each leaf (not page) numbered by figures placed in the end of the line on the middle of each right-hand page.

The practice among early printers of imitating and reproducing MSS. was not abandoned till many years after the first printed book (1454) made its appearance ; and, looking at the books printed, say from 1454 to 1477, from our present standpoint of daily im­provement and alteration, the printing of that period may be said to have been almost wholly stagnant, without any improvement or modification. If some printers (for instance, Sweynheym and Pannarts at Subiaco and Rome, and Nicolas Jenson at Venice) pro­duced handsomer books than others, this is to be attributed to the beauty of the MSS. imitated and the paper used rather than to any superior skill. Generally speaking, therefore, we shall not be very far wrong in saying that the workmanship of Ketelaer and De Leempt’s first book, published at Utrecht c. 1473, and that of Caxton’s first book issued at Westminster in 1477, exhibit the very same stage of the art of printing as the 1454 indulgences. If therefore any evidence were found that Ketelaer and De Leempt and Caxton had really printed their first books in 1454, there would be nothing in the workmanship of these books to prevent us from placing them in that year. And conversely, if the indulgences of 1454 had been issued without a date or without any names to in­dicate their approximate date, their workmanship would invariably induce bibliographers to ascribe them to *circa* 1470, if not somewhat later. Even after 1477 the alterations in the mode of printing books proceeded very slowly and almost imperceptibly. It came to be no longer a universal system for printers to begin business by cast­ing a type for themselves, but some received their types from one of their colleagues. And, though there were still many varieties of types, one sort began to make its appearance in two or three different places. The combinations of letters were the first to dis­appear ; but the contractions remain in a good many books even of the 17th century.

Some theories have been based on, and others have been con­sidered to be upset by, the supposition that the early printers always required as much type as printers of the present day, or at any rate so much as would enable them to set up, not only a whole quire of 4 or 5 sheets ( = 8 or 10 leaves = 16 or 20 pages), but even two quires ( = 40 pages). Consequently calculations have been made that, for instance, the printer of the 42-line Bible required a fount of at least 120,000 characters.@@1 But, though the *Speculum Humanae Salvationis* seems to have been printed by whole sheets (2 pages), there are numberless proofs that many early books were printed page by page, even when in small 4to. For instance, in some books it has been observed that portions of the types with which the text of the first, second, or third pages of a quire had been printed were used to “lock up” the types employed for the later pages of the same quire, as is evident from the blank impres­sions of such portions being found on these later pages. Again, in some books two, three, or four blank leaves are found at the end, showing a miscalculation of the printer. Moreover, the numerous itinerant printers of the 15th century, who established a press for a short time wherever they went, prove that the furniture of the earliest printing offices must have been of no great extent.

*The Invention Controversy.*

Now that we have traced the art of printing from the moment (1454) that it made its appearance in a perfect state at Mainz, and have followed its spread to all the chief places of Europe till 1500, we must take notice of the controversy which has been carried on for nearly four hundred years as to when, where, and by whom the art was invented. For this purpose we will gather up into a chronological sequence (*a*) a few of the most important expressions used by the earliest printers in their colophons, (6) whatever documentary evidence there may be on the subject, and (c) some accounts of the earliest authors on the subject. (The letters A, B, &c., are for the sake of convenient reference.)

The earliest testimony (A) to which we may refer is the notarial instrument, dated 6th November 1455, of the lawsuit between Fust and Gutenberg, whereby the former sought to recover 2026 guilders from the latter in repayment of 1600 guilders (800 advanced in 1450 or 1449 and another 800 in 1452), with the interest thereon. Fust speaks here@@2 of “ the work ” (line 24), and of “ our common work ” (line 60) ; Gutenberg speaks of “ tools ” in preparation, “workmen’s wages, house-rent, vellum, paper, ink, &c.” (lines 37- 40), of “such work” (41), and of “the work of the books” (42) ;

whereas the judges speak of “the work to the profit of both ” (49), and “their common use” (60). (B) In the earliest@@3 book pub­

lished with a date (the Mainz psalter, issued 14th August 1457 by Fust and Peter Schoeffer) it is said that it was perfected at Mainz by an “adinventio artificiosa imprimendi ac caracterizandi absque calami ulla exaratione ” (repeated and varied later ; see p. 681 above). &c.; (C) In 1460 the *Catholicon* was published at Mainz, without the name of the printer ; but the colophon, after stating that the book was printed at Mainz, which town God’s mercy had deigned to prefer above other nations of the earth, adds (D) that the book was printed and completed “ non calami, stili, aut pennæ suffragio, sed mira patronarum formarumque concordia, proporcione, et modulo.” This work is considered to have been printed by Gutenberg, and the mention of God’s mercy is regarded as an allusion to the in­vention of printing. The phrase is, however, also found in the *Liber Sextus Decretalium,* in the *Summa* of Thomas Aquinas, and in the *Clementinas,* published respectively on 17th December 1465, 6th March, and 8th October 1467, by Fust and Schoeffer. (E) On 17th January 1465 Adolph II., archbishop of Mainz, by a public decree, appointed Gutenberg as his servant in reward for “ his services,” but he does not speak of him as the inventor of printing, nor even as a printer. (F) In the *Grammatica Rhythmica,* published in 1466 by Fust and Schoeffer, the third line of the colophon runs : “Hinc Nazareni sonet oda per ora Johannis,” which was formerly regarded as an allusion to Johann Fust or Johann Gutenberg, but which more probably refers to Johann Brannen or Fons, the author of the grammar. (G) On 26th February 1468 Dr Homery wrote to the archbishop of Mainz the letter quoted above, from which it may be inferred that Gutenberg had been a printer, though not a word is said as to his being the inventor of printing. (H) In 1468 Schoeffer reprinted Fons’s *Grammatica,* and in the colophon it is said : “ At Moguntina sum fusus in urbe libellus meque (the book) domus genuit unde caragma venit.” (I) Schoeffer published on 24th May 1468 the first edition of *Justiniani Imper. Institutionum Juris Libri VI., cum Glossa.* To this were added by way of colophon some verses commencing : “Scema tabernaculi, &c.,” in which it is said that (the ornament of the church) Jesus “hos dedit eximios sculpendi in arte magistros . . . Quos genuit ambos urbs Moguntina Johannes, librorum insignes prothocaragmaticos,” which is regarded as an allusion to Johann Gutenberg and Johann Fust as first printers. (K) In the same year (1468) Johannes Andreas, bishop of Aleria, says, in the dedication of his edition of St Jerome’s *Epistles,* published in that year (13th December) at Rome, to Pope Paul II., that “Germany is to be honoured for ever as having been the inventress of the greatest utilities. Cardinal Cusa wished that the sacred art of printing, which then (under Cardinal Cusa, who died 11th August 1464) seemed to have arisen in Germany, were brought to Rome.” (L) In 1470 Guil. Fichet, in an octastichon inserted in the Paris edition of 1470 of the *Letters* of Gasparinus of Bergamo, exhorts Paris to take up the almost divine art of writing (printing) which Germany is acquainted with. In the same year Erhard Windsberg writes to the same effect in an epigram inserted in the *Epistolæ Phalaridis* published at Paris about 1470. (M)

In 1471 Ludov. Carbo speaks, in the dedication of the *Letters* of Pliny to Borso, duke of Modena, of the Germans having invented printing. Nicolaus Gupalatinus speaks (Venice, 1471) of a German being the inventor of printing, and Nicolaus Perottus of the art which had lately come from Germany. (N) On 21st May 1471 Nicolas Jenson published an edition of Quintilian, edited and revised by Ognibene de Lonigo (Omnibonus Leonicenus), who in the preface speaks of its printer as “librariæ artis mirabilis inventor, non ut scribantur calamo libri, sed veluti gemma imprimantur, ac prope sigillo, primus omnium ingeniose demonstravit.” (O) About 1472 the first three printers of Paris published Gasparinus Perga- mensis’s *Orthographiae Liber,* to which is prefixed (in the copy of the university of Basel) a letter, dated 1st January, from Guil­laume Fichet, prior of the Sorbonne, to Robert Gaguin, in which he says that “it is rumoured in Germany that not far from the city of Mainz a certain Johann Gutenberg (Johannes, cui cognomen Bone- montano) first of all invented the art of printing (impressoriam artem), by means of which books are made with letters of metal, not with a reed (as the ancients did), nor with the pen (as is done at present).” (P) On 14th July 1474 Joh. Philippus de Lignamine pub­lished at Rome *Chronica Summorum Pontificum Imperatorumque,* in which we find, between two entries, relating one to 14th July 1459 and the other to 1st October 1459, an undated paragraph in which it is said that Jacobus with the surname of Gutenberg of Strasburg and a certain other one named Fustus, “ imprimendarum litterarum in membranis cum metallicis formis periti, trecentas cartas quisque eoram per diem facere innotescunt apud Moguntiam Germanie civitatem.” The same is said of Mentelin, and (under 1464) of Conrad Sweynheym, Arnold Pannarts, and Udalricus Gallus. (Q) On 23d May 1476 Peter Schoeffer issued the third edition of the *Institutiones* of Justinian, with the same imprint as in the edition

@@@1 See Bernard, *origine de l'Impr.,* i. 164, who was a printer himself and speaks very strongly on this point.

@@@2 We quote from the text of the instrument as published by J. D. Koehler, *Ehren-Rettung Johann Guttenberg's,* Leipsic, 1741.

@@@3 The earliest is perhaps the *Donatus* issued by Peter Schoeffer, possibly before 1456, the colophon of which says that it was finished : “ Arte nova imprimendi seu caracterizandi . . . absque calami exaratione.”