*The rising of the floor,* is a curve drawn in the ſheer plan, at the height of the ends of the floor timbers. It is limited at the main frame or dead flat by the dead riſing, and in flat ſhips is nearly parallel to the keel for some timbers afore and abaft the midſhip frame ; for which reaſon these timbers are called *flats :* but in sharp ſhips it riſes gradually from the main frame, and ends on the ſtem and poſt.

*Cutting down line,* is a curve drawn on the plane of elevation. It limits the depth of every floor timber at the middle line, and alſo the height of the upper part of the dead wood afore and abaft.

*Timber and room,* or *room and ſpace,* is the diſtance between the moulding edges of two timbers, which muſt always contain the breadth of two timbers and an inter­val of about two or three inches between them. In forming the timbers, one mould serves for two, the fore- ſide of the one being ſuppoſed to unite with the aſtſide of the other, and ſo make only one line, which is called the joint of *the timbers.*

In order to illuſtrate the above, and to explain more particularly the principal pieces that compoſe a ſhip, it will be neceſſary to give a deſcription of them. Theſe pieces are for the moſt part represented according to the order of their diſpoſition in ſig. I. Plate CCCCLIV.

A, Repreſents the pieces of the keel to be ſecurely bolted together and clinched.

B, The ſternpoſt, which is tenanted into the keel, and connected to it by the knee G.

E, The back of the poſt, which is alſo tenanted into the keel, and ſecurely bolted to the poſt ; the intention of it is to give ſuſſicient breadth to the port, which ſeldom can be got broad enough in one piece. C is the falſe poſt, which is ſayed @@(b) to the fore part of the fternpoſt.

C, The ſtem, in two pieces, to be ſcarfed together. The ſtem is joined to the fore foot, which makes a part of both.

H, The apron, in two pieces, to be ſcarfed together, and fayed on the inside of the ſtem, to ſupport the ſcarf thereof ; and therefore the ſcarf of the apron muſt be at some diſtance from that of the ſtem.

I, The ſtemſon, in two pieces, to ſupport the ſcarf of the apron.

D, The beams which ſupport the decks ; and F the knees by which the beams are fattened to the ſides of the ſhip.

K, The wing tranſom : it is fayed acroſs the ſtern- poſt, and bolted to the head of it, and its extremities are faſtened to the faſhion pieces. L, Is the deck tran­ſom, parallel to the wing tranſom. M, N, Two of the lower tranſoms : theſe are faſtened to the ſternpoſt and fashion pieces in the ſame manner as the wing tranſom. Q, The knee which faſtens the tranſom to the ſhip’s ſide. And, O, The faſhion piece, of which there is one on each ſide. The keel of the ſaſhion piece is con­nected with the dead-wood, and the head is faſtened to the wing tranſom.

R, S, Breaſt-hooks : theſe are ſayed in the inside to the ſtem, and to the bow on each ſide of it, to which they are faſtened with proper bolts. There are gene­

rally four or five in the hold, in the form of that mark­ed R, and one in the form of that marked S, into which the lower deck planks are rabbeted : There is alſo one immediately under the hauſe holes, and another under the ſecond deck.

T, The rudder, which is joined to the ſternpoſt by the rudder irons, upon which it turns round in the googings, faſtened to the ſternpoſt for that purpose. There is a mortiſe cut in the head of the rudder, into which a long bar is fitted called the *tiller,* and by which the rudder is turned.

U, A floor timber : it is laid acroſs the keel, to which it is faſtened by a bolt through the middle. V, V, V, V, the lower, the ſecond, third, and fourth futtocks. W, W, The top timbers. Theſe repreſent the length and ſcarf of the ſeveral timbers in the mid­ſhip frame.

X, The pieces which compoſe the kelſon. They are ſcarfed together in the ſame manner as the keel, and placed over the middle of the floor timbers, being ſcored about an inch and a half down upon each ſide of them, as repreſented in the figure.

Y, The ſeveral pieces of the knee of the head ; the lower part of which is fayed to the ſtem, and its keel is ſcarfed to the head of the forefoot. It is faſtened to the bow by two knees, called *cheeks,* in the form of that repreſented by Z ; and to the ſtem, by a knee called a st*andard,* in the form of that marked ⊕.

*a,* The cathead, of which there is one on each ſide of the bow, projecting ſo far as to keep the anchor clear of the ſhip when it is hove up.

*b,* The bits, to which the cable is faſtened when the ſhip is at anchor.

*d,* The ſide counter-timbers, which terminate the ſhip abaft within the quarter gallery.

*e, e,* Two pieces of dead wood, one afore and the other abaft, fayed on the keel.

Fig. 2. is a perſpective repreſentation of a ſhip fra­med and ready for the planking ; in which A, A is the keel ; B, the ſternpoſt ; C, the item ; K, L, M, the tran­ſoms ; F, F, F, F, F, F, the ribbands.

Chap. III. *Containing Preliminary Problems,* &c.

The general dimenſions of a ſhip are the *length, breadth,* and *depth.*

To aſcertain thoſe dimenſions that will beſt anſwer the intended purpoſe is, no doubt, a problem of conſiderable difficulty ; and, from theory, it may be ſhown that there are no determinate proportions ſubsisting be­tween the length, breadth, and depth, by which theſe dimenſions may be ſettled ; yet, by combining theory and practice, the proportional dimenſions may be ap­proximated to pretty nearly.

As ſhips are conſtructed for a variety of different purpoſes, their principal dimenſions muſt therefore be altered accordingly, in order to adapt them as nearly as poſſible to the propoſed intention ; but ſince there is no fixed ſtandard whereby to regulate theſe dimenſions, the methods therefore introduced are numerous, and in a great meaſure depend upon cuſtom and fancy.

With regard, however, to the proportional dimen-

@@@(b) To fay*,* is to join two pieces of timber cloſe together.