breadth plan muſt be firſt drawn. Then produce the lower edge of the keel both ways, and let it alſo repreſent the middle line of the half-breadth plan. Pro­duce all the frames downwards, and alſo the fore and af­ter perpendiculars. Then from the place in the sheer- plan, where the height of breadth-lines interſect the stem, ſquare down to the middle line the fore and aft part of the rabbet and the fore part of the ſtem. Take from the dimenſions what the ſtem is ſided at that place, and ſet off half of it from the middle line in the half-breadth plan, through which draw a line parallel to the middle line through the three lines ſquared down, and the half-breadth of the ſtem will be repreſented in the half-breadth plan. Take the thickneſs of the plank of the bottom, which is 4 1/2 inches, and deſcribe tbe rab­bet of the ſtem in the half-breadth plan.

From the points of interſection of the height of breadth lines with the counter timber at the ſide, and with the counter timber at the middle line, draw lines perpendicular to the middle line of the half-breadth plan, from which ſet off the half breadth of the coun­ter on the line firſt drawn; and from this point to the interſection of the line laſt drawn, with the middle line draw a curve, and the half breadth of the counter will be repreſented at the height of breadth, which will be the broadeſt part of the ſtern.

Take the main half breadth of timber dead flat from the dimenſions, and lay it off from the middle line on dead flat in the half-breadth plan. Take alſo from the dimenſions the main half breadth of every timber, and ſet off each from the middle line on the correſponding timbers in the half-breadth plan. Then a curve drawn from the end of the line repreſenting the half breadth of the counter through all the points, ſet off on the tim­bers, and terminating at the aft part of the ſtern, will be the main half breadth line. Take from the dimen­ſions the top-timber half breadth, and deſcribe the top- timber half-breadth line in the half-breadth plan, in the same manner as the main half-breadth line.

Take from the dimenſions the half breadth of the ri­ſing, and ſet it off from the middle line on the corre­ſponding timbers in the half-breadth plan, obſerving, where the word *outside* is expreſſed in the tables, the half breadth for that timber muſt be ſet off above or on the outſide of the middle line. Then a curve drawn through theſe points will be the half breadth of riſing in the half-breadth plan.

It will now be neceſſary to proceed to the body plan. Draw a horizontal line (fig. 35.), which is called the *baſe line,* from the right hand extremity of which erect a perpendicular. Then ſet off on the baſe line the main half breadth at dead flat, and erect another per­pendicular, and from that ſet off the main half breadth again, and erect a third perpendicular. The firſt per­pendicular, as already obſerved, is called the ſide line of the fore body ; the ſecond the middle line ; and the third the ſide line of the after body.

Take from the dimenſions the heights of the diago­nals up the middle line, and ſet them from the baſe up the middle line in the body plan. Take alſo their diſtances from the middle line on the baſe, and ſet them off. Set off alſo their heights up the ſide lines, and draw the diagonals. Then take from the ſheer plan the heights of the lower height of breadth line, and ſet them off upon the middle line in the body plan ; through theſe

points lines are to be drawn parallel to the baſe, andterminating at the ſide lines. In like manner proceedwith the upper height of breadth line.

The riſing is next to be ſet off on the body plan ; it muſt, however, be firſt deſcribed in the ſheer plan :

Take, therefore, the heights from the dimenſions, and ſet them off on the correſponding timbers in the ſheer plan, and a curve deſcribed through theſe points will be the riling line in the ſheer plan. Then take from the dimenſions the riſing heights of dead flat. Set it off in the body plan, and draw a horizontal line. Now take all the riſing heights from the ſheer plan, and ſet them off in the body plan from the lint drawn for the riſing height of dead flat, and draw horizontal linea through theſe points. Take from the half-breadth plan the half breadths of the riſing, and ſet them off from the middle line in the body plan, and the centres of the floor sweeps of the correſponding timbers will be obtained.

From the half-breadth plan take the main half- breadth lines, and ſet them off from the middle line in the body plan on the correſponding lines before drawn for the lower height of breadth ; and from the extre­mities of theſe lines ſet off towards the middle line the lengths of the lower breadth ſweeps reſpectively.

Take from the dimenſions the diſtance of each frame from the middle line on the diagonals, and ſet them off from the middle line on their reſpective diagonal lines. Now theſe diſtances being ſet off, and the lower breadth and floor ſweeps deſcribed, the ſhape of the frames below the breadth line may eaſily be drawn as follows : Place one point of a compaſs in the diſtance ſet off for the length of the lower breadth ſweep, and extend the other to the point which terminates the breadth, and deſcribe an arch of a circle downwards, which will interſect the points ſet off on the upper diagonal lines, letting it paſs as low as convenient. Then fix one point of the compasses in the centre of the floor ſweep, and extend the other to the point ſet off on the fourth dia­gonal, which is the floor head ; and deſcribe a circle to interſect as many of the points ſet off on the diagonals as it will. Then draw a curve from the back of the lower breadth ſweep, through the points on the diago­nals, to the back of the floor ſweep. Deſcribe alſo another curve from the back of the floor ſweep through the points on the lower diagonals, and terminating at the upper part of the rabbet of the keel, and that part of the frame below the breadth will be formed. In like manner deſcribe the other frames.

Through the extremities of the frames at the lower height of breadth draw lines parallel to the middle line, and terminating at the upper height of breadth line, and from thence ſet off the upper breadth ſweeps; now fix one point of the compaſs in the centres of the upper breadth ſweeps ſucceſſively, and the other point to the extremities of the frames, and deſcribe circles upwards. Then from the ſheer plan take off the heights of the top-timber lints, and ſet them off in the body plan, drawing horizontal lines ; upon which ſet off the top-timber half breadths taken from the correſponding timbers in thé half-breadth plan ; and by deſcribing curves from the back of the upper breadth ſweeps through the points ſet off on the ſeventh or up­per diagonal ; and interſecting the top-timber half breadths, the timbers will then be formed from the