at the outſide will be represented. On the horizontal line drawn for the upper part of the taff-rail ſet off forward the thickneſs of the taff-rail, which is one foot; then draw a curve down to the head of the quarter­piece parallel to the first, and that part of the taff-rail will be deſcribed. Inſtead of a fair curve, it is cuſtomary to form the upper part of the taff-rail with one or two breaks, and their curves inverted. Either way may, however, be uſed according to fancy.

Set off the depth of the tail rail, which may be about 3 1/2 feet, on the line drawn for the projection ; from the upper part, and from this point, deſcribe a curve as low as the heel of the quarter-piece, and about five inches abaft it at that place ; obſerving to make it run nearly parallel to the after edge of the quarter-piece ; and the after part of the quarter-piece, which comes neareſt to the side, will be repreſented.

Set up on the line drawn for the projection of the balcony the height of the upper part of the balcony or breaſt rail, which is 3 1/2 feet from the deck ; ſet off the thickneſs of the rail below that, and deſcribe the balcony, keeping it parallel to the foot ſpace rail, and terminating it at the line drawn for the after part of the quarter-piece neareſt the side ; and the whole balcony will then be repreſented.

The upper gallery is then to be deſcribed; In order to this, its length muſt be determined, which may be 11 feet. Set off this diſtance from the side timber forward with the ſheer ; and at this point draw a line parallel to the side timber, which line will repreſent the fore part of the gallery. Then take the diſtance be­tween the upper part of the foot ſpace rail and the up­per part of the breaſt rail on a perpendicular, and ſet it off on a perpendicular from the upper part of the middle ſtool rail on the line drawn for the fore part of the gallery, from which to the fore part of the quartet- piece draw a ſtraight line parallel to the rail below, which line will be the upper edge of the upper rim rail; and its thickneſs being ſet off, the lower edge may alſo be drawn. From the upper edge of that rail ſet up an extent equal to the diſtance between the lower rim rail and middle ſtool rail, and deſcribe the upper ſtool rail, the after end of which will be determined by the quar­ter piece, and the lore end by the line for the length of the gallery. There may be three ſaſhes drawn be­tween theſe two rails as before ; and hence the upper gallery will be formed.

The upper finiſhing ſhould be next drawn, the length of which may be 11/2 foot leſs than the upper gallery. Draw a line parallel to the rake of the ſtern for the fore end of it, and let the upper part of the top side be the upper part of the upper rail, from which ſet down three inches for the thickneſs of the rail, and de­ſcribe it. Deſcribe alſo another rail of the ſame length and thickneſs as the former, and eight inches below ; from the end of which a ſerpentine line may be drawn down to the upper ſtool rail, and the upper finiſhing will be completed.

The ſtern being now finiſhed, the rudder only remains to be drawn. The breadth of the rudder at the lower part is to be determined from the proportions, and ſet off from the line repreſenting the aft part of the ſtern- poſt ; which line alſo repreſents the fore part of the red­der. Then determine on the lower hance, letting it be no higher than is juft ſufficient, which may be about

one foot above the load water-line, and ſet off its breadth at that place taken from the proportions. Then a line drawn from thence to the breadth ſet off at the lower part will be the aft side of the rudder below the lower hance. There may alſo be another hance about the height of the lower deck. The uſe of theſe breaks or hances is to reduce the breadth as it riſes toward the head. The aft part may be drawn above the lower hance, the break at the lower hance being about ten inches, and the break at the upper hance six inches.— The back may be then drawn. It is of elm, about four inches thick on the aft part. That thickneſs be­ing ſet off, and a line drawn from the lower hance to the lower end, will repreſent the back. The head of the rudder ſhould be as high as to receive a tiller above the upper deck. Therefore ſet off the size of the head above the upper deck, and draw a line from thence to the break at the upper hance, and the aft part of the rudder will be repreſented all the way up. The beard­ing ſhould be drawm, by ſetting off the breadth of it at the keel from the fore side of the rudder, which may be nine inches. Set off alſo the breadth at the head of the wing tranſom, which may be a foot. Then a line being drawn through theſe two points, from the lower part of the rudder to about a foot above the wing tranſom, and the bearding will be repreſented. As the bearding is a very nice point, and the working of the rudder de­pending very much upon it, it ſhould always be very particularly considered. It has been cuſtomary to beard the rudder to a ſharp edge at the middle line, by which the main piece is reduced more than necessary. The rudder ſhould, however, be bearded from the side of the pintles, and the fore side made to the form of the pintles.

The pintles and braces may next be drawn. In order to which determine the place of the upper one, which muſt be ſo diſpoſed that the ſtraps ſhall come round the head of the ſtandard, which is againſt the head of the ſtern-poſt on the gun-deck, and meet at the middle line. By this means there is double ſecurity both to the brace and ſtandard. To obtain thoſe advantages, it muſt therefore be placed about four inches above the wing tranſom ; the ſecond muſt be placed just below the gun-deck so as to bolt in the middle of the deck tran­ſom, and the reſt may be ſpaced equally between the lower one, which may be about six inches above the upper edge of the keel. The number of them are ge­nerally ſeven pair upon this claſs of ſhips; but the num­ber may be regulated by the diſtance between the ſecond and upper one, making the diſtance between the reſt nearly the ſame. The length of all the braces will be found by ſetting off the length of the lower one, which may be eight feet aſore the back of the ſtern-poſt, and also the length of the third, which is four feet and a half afore the back of the ſtern-poſt ; and a line drawn from the one extremity to the other will limit the interme­diate ones, as will appear on the ſheer draught. The braces will ſeem to diminiſh in length very much as they go up ; but when measured or viewed on the ſhape of the body, they will all be nearly of an equal length. The length of the ſtraps of the pintles which come upon the rudder may all be within four inches of the aft side of the rudder ; and the rudder being a flat ſurface, they will all appear of the proper lengths.

II. *Of the half-breadth and body plans.———The* **half-**