

13th June, 1912.

THE USE OF THE SPILING STAFF.

By WALTER REEKS.

The term "Spiling" does not appear to be generally understood outside Shipyards, but inside them it is not only in every day use, but is in the minds of practical Shipwrights almost continually. When it is necessary to fit two curved edges together, one being already in existence, a Spiling of that curve has to be taken. A Straight Edge is applied to the curve, and if it be a small one the compass is run round the curve, one point scribing the mark to which the Shipwright cuts his mould or pattern.

If, on the contrary, the curve be a large one, which it frequently is, it would be quite impossible to use that simple method, and Spilings are taken by drawing a number of lines roughly at equal distances, measuring the distance from the straight edge to the curve, and making a record thereof on the board in use.

Suppose for example a simple case such as a false bottom, or even a grating, as in Diagram 1, having three straight and one curved side;— to the curved side is applied a piece of board—A—having one straight edge. On it a number of lines are drawn, ab, cd, ef, gh, from the straight edge, and along these lines distances to the curves are then measured and written on the board as shewn. These measurements are now set off on another piece of board, a batten sprung through the spots, a line drawn to cut through them, then the piece is cut out to the line, and the mould or pattern completed.

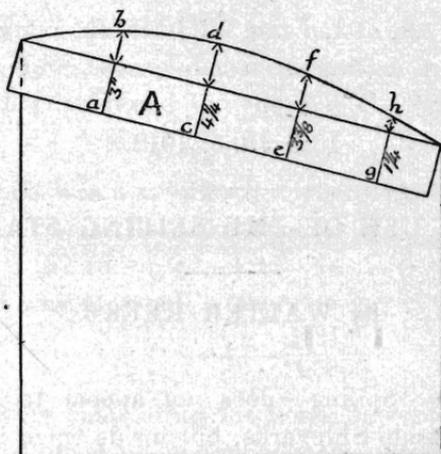


Diagram I.

Having now made clear what is meant by "Spiling," we will see how it can be used on a much more elaborate scale. In diagram II. is illustrated a mould taken from the

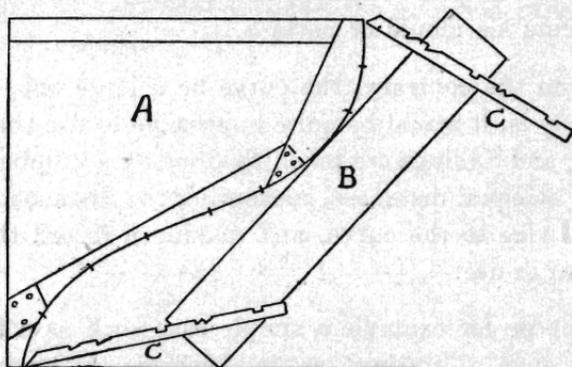


Diagram II

after body of a ship now building; we take this board and apply it, just touching the curve at one spot, where in practice it is held firmly in position by battens nailed to it, and secured as most convenient to the Dock bottom or Slip.

It is quite immaterial at what angle this board stands, but in practice it is usually placed so as to bring the part of the section to be taken within comfortable range of the

Spiling Staff. The Staff can be made large or small as required, its size being governed only by the means available to handle it.

We now take the Staff, which consists simply of a batten pointed at one end, and on one edge of which are cut a number of notches, no two being the same shape, nor the same distance apart, for the reason that the Spiling or measurement having been taken, and a pencil run round two or three of the notches, no others will fit it. Therefore on reproducing on the floor, no mistake can possibly be made in that direction. Taking now the top height, we mark it by its name for identification, the rest of the spots taken in the same manner need no identification beyond that of the number of the section to which they apply.

Having now taken this series of spots, we lay the Spiling Board on the floor, place the Staff till its notches fit the pencil lines on the Board, and mark the spots indicated by the point of the Staff.

So much for the Spiling Staff, and its use. It is a rapid, and when handled with ordinary care, an accurate method of securing the profile of any irregular shaped object.

It may be interesting to note that although the term "Spiling" is confined to Shipwrights, the same principle is applied by others. The Land Surveyor, for instance, starting with the datum line which corresponds to the edge of the Spiling Board, at suitable intervals runs offsets at right angles to his datum line to the edge of any irregular shaped object he wished to depict, such, for example, as a creek running through a field or paddock.

The Sculptor does the same thing, but the instrument he uses is called a Pointing Machine. The model is first made and mounted on a block—the mass of Marble from which the finished piece of Sculpture will eventually take form, is placed near to, and on a precisely similar block, and two frames exactly alike erected about each. Measurements

are then taken by the pointing machine from the model, the arms transferred to the frame surrounding the marble block, and holes drilled in it until the same measurement can be reproduced. Sufficient of these holes having been drilled, the marble is roughed off till the bottoms of such holes are nearly reached.

Then a more skilled workman cuts down to the bottom of the holes, and the Sculptor finally applies his art to the finishing of the article. By this it will be seen that, though he does not use the term "Spiling," an almost similar operation is gone through as that shewn a few minutes since on the mould of the ship's section.

The writer would like to take the opportunity of thanking Messrs. Morrison and Sinclair, Shipbuilders, of Balmain, for having supplied him with the necessary moulds, their Foreman Shipwright, Mr. R. Young, and also Mr. A. Young and Mr. Hosking, for their assistance.

DISCUSSION.

Mr. R. R. King proposed a vote of thanks to Mr. Reeks for his extremely interesting paper, and he said that whilst he was quite familiar with Spilings taken in the ordinary way, in shipyards of which he had experience, he had never before seen a Staff used in that particular manner. He regarded it as an extremely useful tool of the trade.

Mr. T. Drake, in seconding the vote of thanks to Mr. Reeks, remarked that he had been a member of the Engineering Association for some years, and he had frequently felt somewhat out in the cold when scientific engineering questions were put forward, but as a Shipbuilder, he had found this paper more than ordinarily interesting as a subject well within his province, as it also must have been to many of those he saw around him. Like Mr. King, he had not previously seen the Staff used in the particular way described, but he now felt quite sure that it would be in frequent use in his and other Shipyards before very long.