

# The Art of Shipbuilding

## III—Further Details of Construction

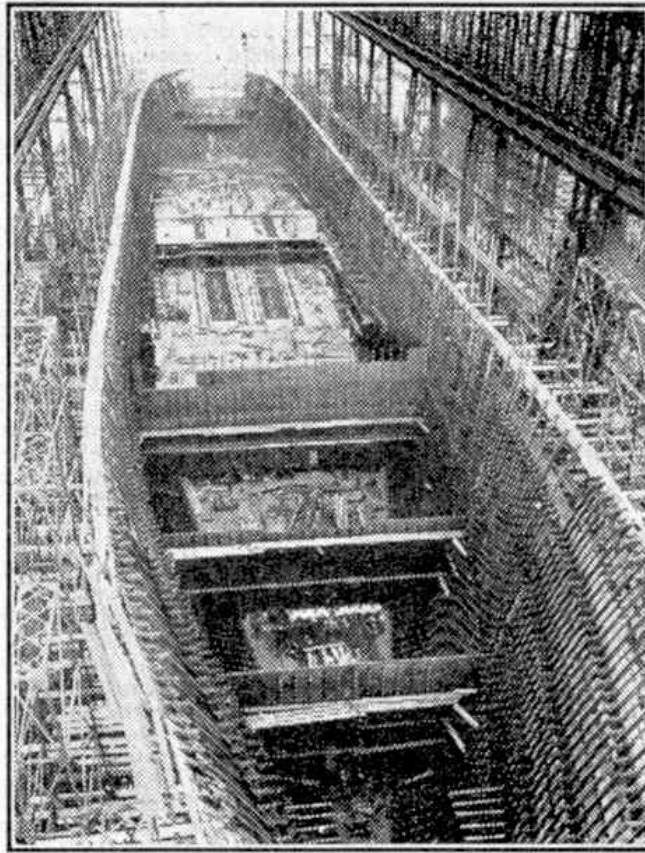
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IN the previous article we saw how the plating of the ship's hull is started, and the term "strake" was explained. A very important point about shell plating is that strakes are alternately raised and sunk; in other words, the edges of every second strake are visible, while intermediate strakes have their edges covered and are flush with the frames. The reason for this alternate raising and sinking of strakes is obvious. The plates must overlap whenever riveted construction is employed in shipbuilding, and it is worth mentioning that one of the many claims made for an all-welded ship is that a perfectly smooth exterior is provided for the hull—the plates in this case being joined by butt welding, that is they are joined end to end without overlap. Welded construction as it is being extensively carried out in the United States is described in some detail further on in this article.

As the riveting of the shell plates proceeds and each line of rivets is completed, a white line is painted along them to indicate that that particular part has been finished, and this also acts as a check for the ratefixers—the men who assess the amount of riveting carried out by each squad of riveters—and enables them to calculate the workmen's wages. This particular procedure, of course, applies to all riveting completed throughout the ship. The water-tightness of the ship's hull is finally ensured by caulking the edges of the plates, that is, the edges

are expanded by a mechanical hammer, with a blunt chisel-like tool, being gradually worked along the plates' edges, and the seams are thus tightly closed. The completion of this particular operation all over the shell plating is indicated by a wavy white band of chalk being drawn along the completed seams.

Meanwhile, the decks and watertight bulkheads are also being fabricated and built up, by riveting and welding plates and sections to vertical girders. The noise inside the hull as all this work proceeds apace is terrific, and must be experienced to be believed. Various openings are left in the decks for the several holds and for finally installing the machinery. In all but the smallest ships, the heavy propelling machinery is not put in the ship until after the



Erecting the main bulkheads.

launch has taken place, on account of the enormous weights involved.

Every ship, for strength and safety, is split up by several transverse watertight bulkheads and also a double bottom; tragic accidents like the sinking of the White Star liner "*Titanic*" before the last war made all shipbuilders and classification societies realise the absolute necessity for the subdivision of the hull into comparatively small spaces. The shell plating between watertight compartments is further strengthened by longitudinal bars called stringers.

The hull is now rapidly approaching the time when it will be ready for launching, and the construction of the superstructure,