

no novel features, beyond those due to long and careful study as to their fitness, the pumps, engines and valves being contained in the sides of the dock and the pipes being divided into four groups controlled by valves, and corresponding to the four corners of the dock so that the level can be adjusted with the greatest ease, by the admission or expulsion of water at the several points.

The capstans for mooring or manipulating the dock are of the best make of Harfield and Co.'s construction. The flow pipes

These piers are about five feet broad, and usually from ten to fifteen feet apart, and the pontoons carrying the vessel upon them are arranged at corresponding distances, so as to readily float in between the piers.

The general view of a docking and repairing establishment shown in the full page engraving will give a very good idea of the working of the invention; the side, for reference, being lettered A, the pontoons B and the outrigger C.

In the smaller cuts Fig. 1 shows the dock ready to raise the

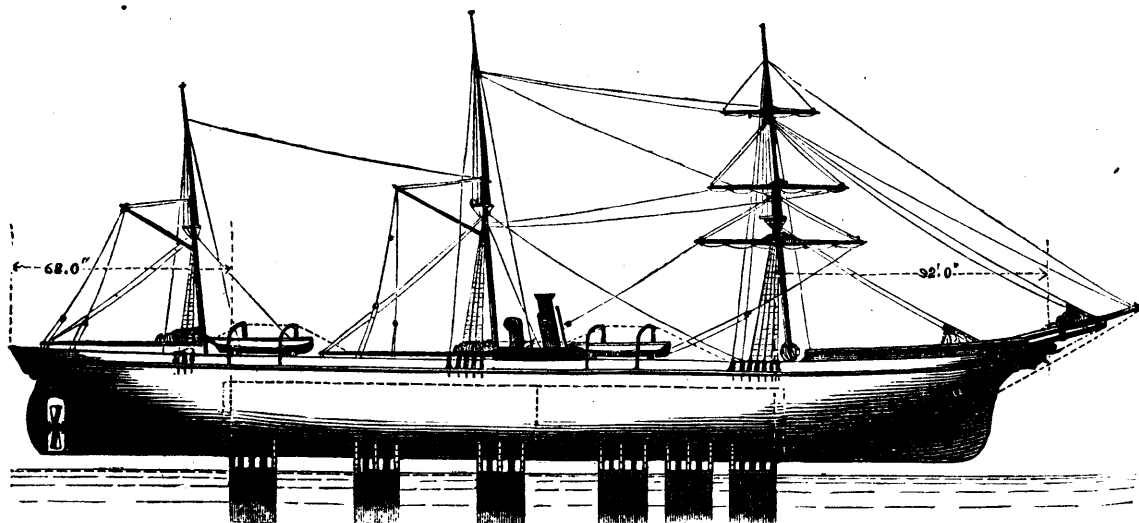


FIG. 6.—THE SS. "RUSSIA" AS ACTUALLY DOCKED ON TWO PORTIONS OF THE NICHOLAIEFF DOCK.

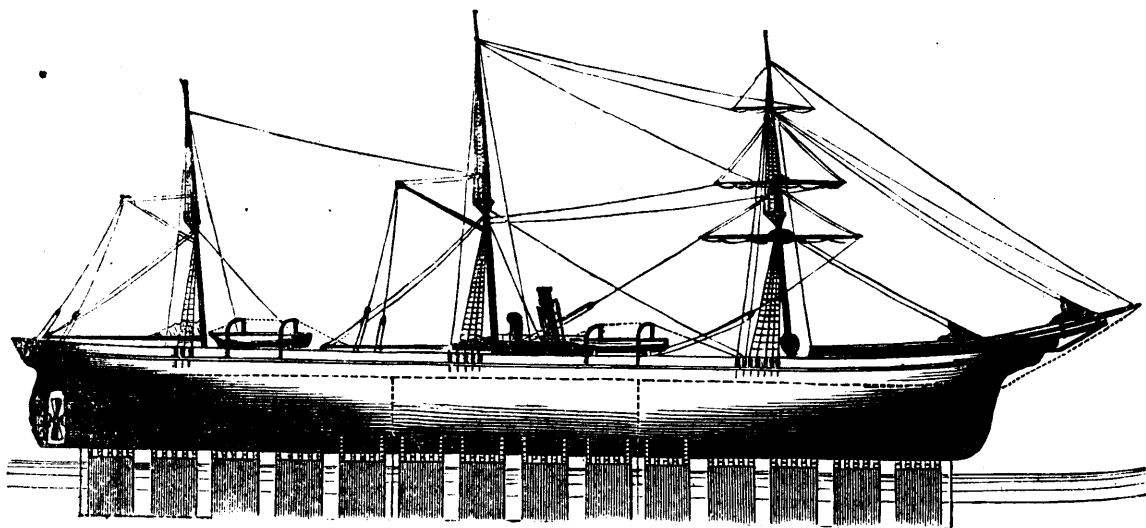


FIG. 7.—SS. "RUSSIA" AS IT OUGHT TO HAVE BEEN DOCKED.

throughout the dock are galvanized and all the minor accessories of the highest quality.

The horizontality of the dock is shown transversely by the outrigger and any deviation longitudinally determined by the gauges at the extreme ends of the dock.

The dock is made in two portions, each of which is complete in itself and provided with all appliances, so that each half may be used for docking smaller vessels, and is in fact a separate dock.

Although the dock may be considered complete in itself, its full merits are only brought into play when used in combination with the stages already mentioned for receiving the vessels.

These stages are quite independent of the dock, and are formed of timber or iron piles firmly secured in the ground and braced together, forming a number of narrow piers, on which the vessel rests.

ship, brought over it to the position shown in Fig. 2, the way in which this is done being very simple, as when the vessel has been brought over the dock and secured in place in the usual way by ropes and shores, water is pumped in till the dock rises sufficiently to allow the vessel to bear firmly on the keel blocks.

Very broad sliding bilge blocks are then hauled forward under the bilges of the vessel so as to form an unusually broad and stable cradle, and the pumping is proceeded with until the vessel is fully raised. These sliding bilge blocks are a great improvement on any that have been hitherto employed; instead of being the ordinary width of a balk of timber they are framed together, and provided with slides and wedges so as to give a bearing width to the vessel of from four to six feet, and they slide

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