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## IMPROVED DEPOSITING DRY DOCK.

The dock consists of an upright side carrying the machinery, and having attached to it a series of parallel pontoons forming the bottom on which the vessel is lifted; on the other side of the dock is an outrigger which always floats, and the function of which is to insure stability during the operations of raising and lowering vessels. The dock is lowered as required, and a vessel brought over the pontoons and properly secured; pumping is then proceeded with till the vessel is raised well above water, as shown in the view. The pontoons of the dock are now entered between the piers of the fixed staging, so that the vessel is brought over the latter; water is then admitted to the dock to lower it, and thus the vessel is quickly transferred from the floating dock to the fixed staging without any sliding or rolling motion. The reverse of this is done when a vessel is lifted off the staging into the water. The operation occupies only about twenty minutes, and the vessels can be left on the staging as long as may be desired. Our illustration, for which we are indebted to *Engineering*, shows the steamship *Pensher* on the dock, and the steamship *Ardeer* deposited on the staging.

This dock is the third of its kind constructed by its inventors, Messrs. Latimer Clark and John Standfield, of Westminster. The first was completed at Nicolaieff in the Black Sea for the Russian Government, where it proved of great service during the Russo-Turkish war; it was subsequently removed to the more important arsenal of Sebastopol and considerably enlarged; it is now in constant use at that port. The second was shipped to Vladivostok, the chief Russian port in the Corea, where it is now being put

together; it has been provided with a complete repairing workshop to be carried on the outrigger.

The dock has been in constant use during the short time since its completion, and it has been already decided to extend it so that it shall be able to dock and deposit vessels of 5,000 tons weight. Contracts have also been entered into for the construction of further lengths of staging.

The dock consists of two equal parts, each complete, and these are frequently used separately for docking and depositing vessels of 1,500 tons dead weight; the intended addition will be in the form of another independent section suitable for vessels of 2,000 tons. When the three parts are connected together, they will be able to lift vessels of 5,000 tons, as already stated. It is obvious that every additional length of staging gives the accommodation of another graving dock and at a trifling cost, as the staging is constructed of ordinary piles driven in parallel rows, which are capped by horizontal timbers. This is clearly seen in our perspective view. By this arrangement one dock serves for a large number of vessels, and can thus be very economically and profitably worked.

## Decorating Zinc Articles.

A beautiful and permanent dark or light green coating, resembling enamel, can be applied to all kinds of zinc articles, especially those made of sheet zinc, says Puscher, in the following manner:

Fifty parts of hyposulphite of soda are dissolved in 500 of boiling water, and the solution poured at once, in a fine stream, into 25 parts of strong sulphuric acid. The milk of sulphur that separates will soon ball together in lumps and

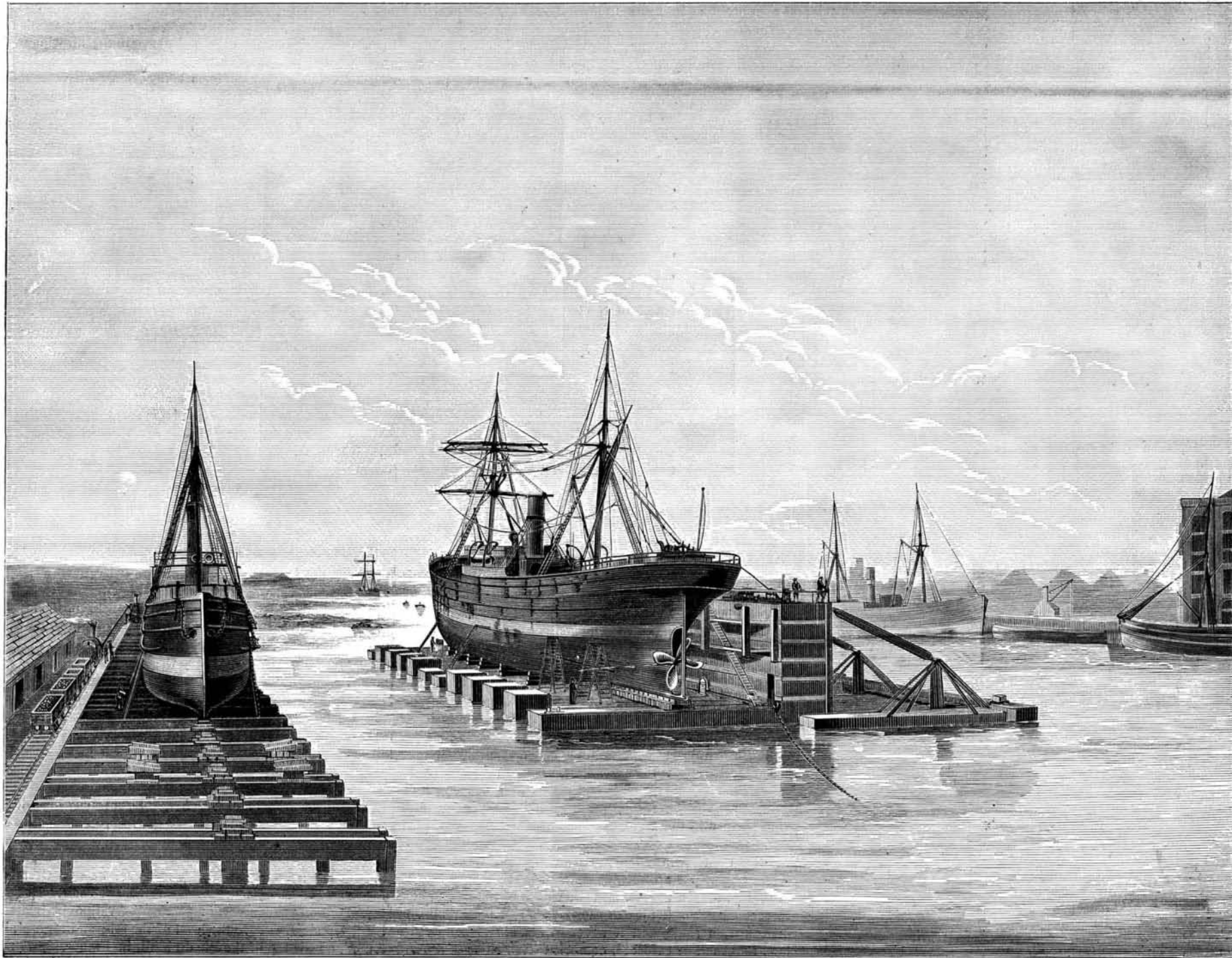
settle. The hot liquid containing sulphate of soda and sulphurous acid is decanted, and the cleansed zinc put in it. In a short time it will acquire a very brilliant, light green coating of sulphide, and only needs to be washed and dried. By exposing it repeatedly and for a longer time to this hot bath, the coating grows thicker and the color darker and more brilliant. The temperature must not fall below 145° Fahr.; when it does, it should be heated up to 190° Fahr., to obtain a fine and brilliant deposit.

By dipping these articles in dilute hydrochloric acid, one of acid to three of water, sulphureted hydrogen is evolved, and this enamel-like coating loses its luster and gets lighter in color. Aqueous solutions of aniline colors have little effect upon this dull surface and none on the gray brilliant coating.

The effect of marbling can be obtained by moistening the gray zinc and applying hydrochloric acid in spots with a sponge, then rinsing it off, and while still wet flowing over it an acidified solution of sulphate of copper, which produces the appearance of black marble. As the zinc has generally a dull surface it must receive a coat of copal varnish.

If 15 grammes of chrome alum and 15 more of hyposulphite of soda be added to the above solution, the article will have a brownish color. The above can all be applied to articles made of cast zinc.—*Neueste Erfind.*

M. VICTOR SAINT PAUL has placed \$5,000 at the disposal of the Paris Academy of Medicine as a prize to any person, whatever may be his vocation or nationality, who shall succeed in discovering an infallible means of curing diphtheria.



CLARK & STANDFIELD'S IMPROVED DEPOSITING DRY DOCK.