## FLOATING DOCKS.

Nothing, perhaps, can be considered of more vital consequence to the Dominion of Canada than the improvement of her natural water ways, and the cheapening, to the greatest possible extent, of the cost of transporting the products of the great West to their markets in Europe. It has, therefore, been the aim and end of every government, not only to increase the carrying capacity of our canals and attract traffic to the St. Lawrence route, but also, by all means in their power, to improve the great outlet by the Gulf. Failing this, all money expended for the former purpose would be simply thrown away.

Notwithstanding, however, all that has been done of late years to minimize the danger of the passage to Quebec and Montreal by the improvement of the channel, multiplication of lights and other means, the high rates of marine insurance necessitated by the frequent disasters to shipping will always tend strongly to counterbalance the advantages in point of distance, and militate strongly against Quebec and Montreal in their competition with New York, Boston, and other shipping ports in the United States. One great difficulty which has yet to be met is, that should a vessel sustain some slight injury, there, is no dock accommodation in which she can be repaired without discharging her cargo, and this, should such an occurrence take place near the end of our short season of navigation, becomes a matter of detention and very serious loss.

So much so has this been felt that, as we need hardly remind our readers, the Imperial Government is about to undertake the construction of a graving dock at Quebec.

We have been led to these considerations from the perusal of the pamphlets issued by Messrs. Clark, Standfield & Co., of London, Eng., descriptive of the "Depositing Dock," and "Double Power Floating Dock," invented by Mr. Latimer Clark, C.E., and Mr. Standfield, and, as the substance of these is of great interest, not only to those interested in navigation, but also to the public at large, we make no apology for laying it before our readers.

The first mentioned, or "depositing dock," has been devised to meet the requirements of busy ports where a number of vessels of varying size may require to be docked, and presents this peculiarity that with but a single dock, used in combination with fixed stages, upon which the vessel is deposited high and dry, for examination or repairs, an indefinite number of vessels can be docked, their number being only limited by the length of staging provided for their reception—its first cost, with that of the staging sufficient to accommodate several vessels, not exceeding that of a stone dock.

This depositing dock is formed of a series of fingers or pontoons, upon which the vessel is raised, all rigidly connected at one end, somewhat like the teeth of a comb, to the lower part of a strong vertical side, which is practically an enormous tubular girder, and of such a height as never to be quite submerged even when these pontoons are sunk sufficiently to allow a vessel to float over them.

Both the side and pontoons are divided up into many separate water-tight compartments, a certain number of which are permanently sealed up so as to render it impossible to sink the dock either by accident or design, and as the pressure of the water upon the submerged pontoons is sometimes equal to 15 lbs. the square inch, a perfect framework is arranged within them and the side to withstand this pressure. In addition to this, the middle of the pontoons, upon which the vessel rests, is strengthened by extra frames and bulkheads.

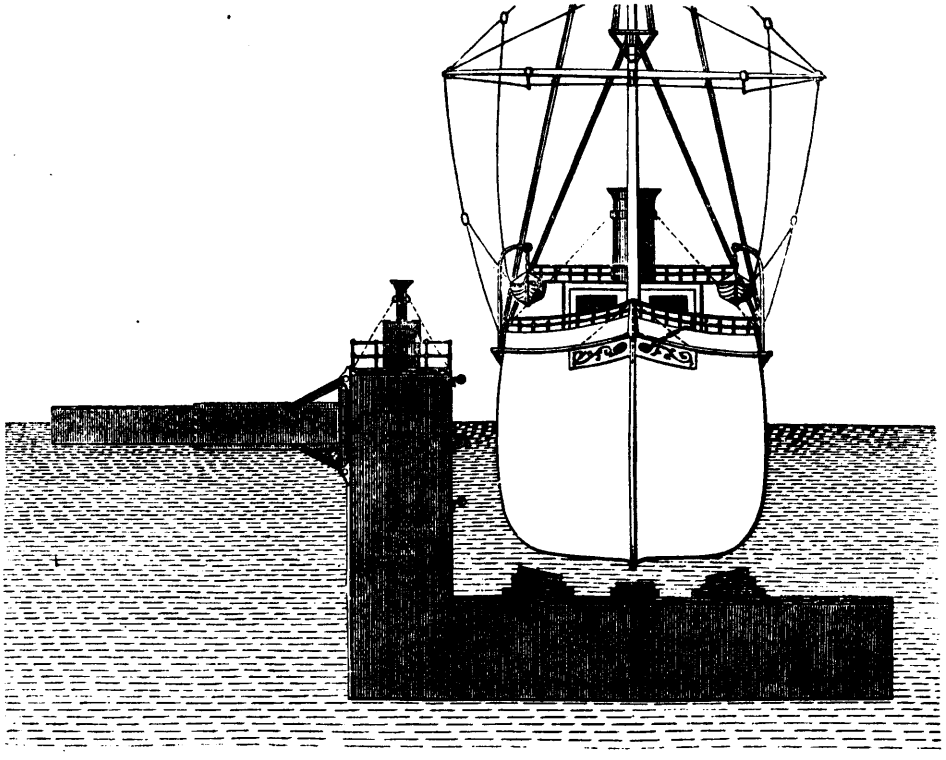

FIG. 1.—DOCK SUBMERGED WITH VESSEL OVER IT, READY TO BE RAISED.

As the dock has but one side to it, it is necessary that special means should be adopted for keeping it horizontal during the process of raising and lowering.

This is effected by the "outrigger" which is a broad shallow pontoon, divided into several portions and compartments, floating on the surface close alongside the dock, and loaded down by ballast to about half its depth at the time of flotation, each portion of this being attached to the dock by slides moving up and down in H-shaped irons running the whole height of the side. By this arrangement the outrigger and dock form practically but one structure, which can only roll by either the vessel or the side of the dock rising or sinking in the water.

The different apparatuses used for working the dock present