SUBMERGED CONCRETE WORK.

A method of constructing submerged concrete work which is required to sustain heavy loads, has been brought forward by Mr. J. H. Tromanhauser, of Toronto. In this article we present a method of constructing light-house foundations, etc., by this method, which is suitable for exposed situations.

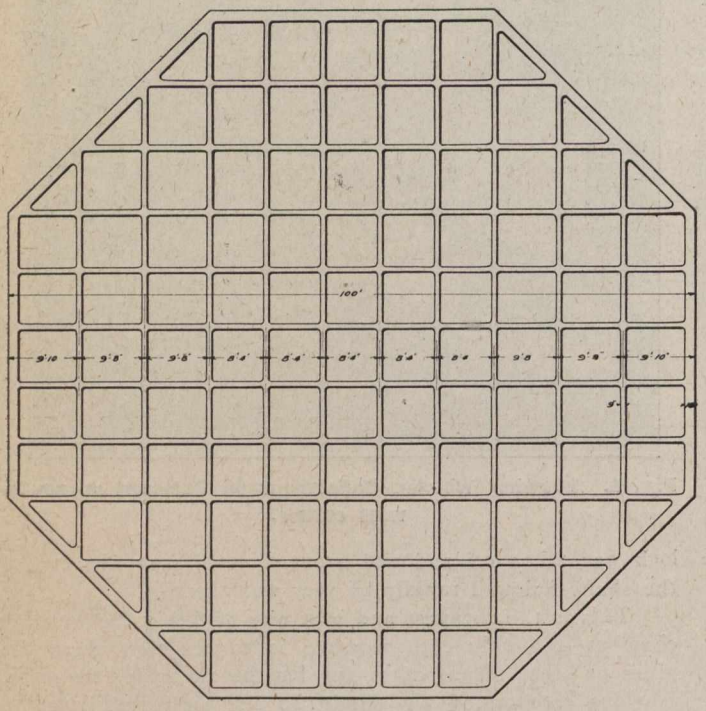

Fig. 1.

This method is an advance over the previous means of erecting acqueous concrete work in as much as varying depths do not greatly increase the difficulties of construction. The structure is erected on the nearest convenient shore, and, when sufficiently set, is skidded into the water and towed to the desired spot. When the wooden bottom is removed the honeycombed structure sinks.

This pontoon may be made to any depth to suit the depth of water. The displacement of this pontoon per foot submerged = 8,318 cubic feet = 260 tons at 62½ pound water pressure.

This foundation may be towed into position, and sunk securely upon the sea bottom so quickly that it is hardly possible to conceive conditions of tide, cave or wind, where this could not be successfully accomplished.

Usually, the sea bottom is so near a good general level, and also, so compact, that in most cases, this wide structure could be safely sunk directly upon the natural bottom without any artificial preparation whatever. This is frequently done with wooden cribs for lighthouse and other foundations, and with a heavy, thoroughly-bridged concrete structure the work of building, sinking and ballasting would be simple, safe and economical, compared with the same operations with any other materials or methods.

In case the natural sea bottom was such as to render it unsafe for supporting the structure, then, of course, an artificial support would have to be built, but just what methods should be followed in the construction of the foundation, is a question which could only be determined after a full and complete knowledge of all the local conditions has been ascertained.

The design of foundation here illustrated, will float with about 52 per cent. of the height of its concrete walls above the surface. Therefore, a structure with walls 50 ft. high may be built and floated into position in less than 25 ft. of water. This means that a concrete section designed for a 40 ft. depth of sea can be built in 25 ft. of water, and still have 10 ft. of its walls projecting above the surface to allow for settlement into the sand and mud after the pontoon floor has reached contact with the sea bottom.

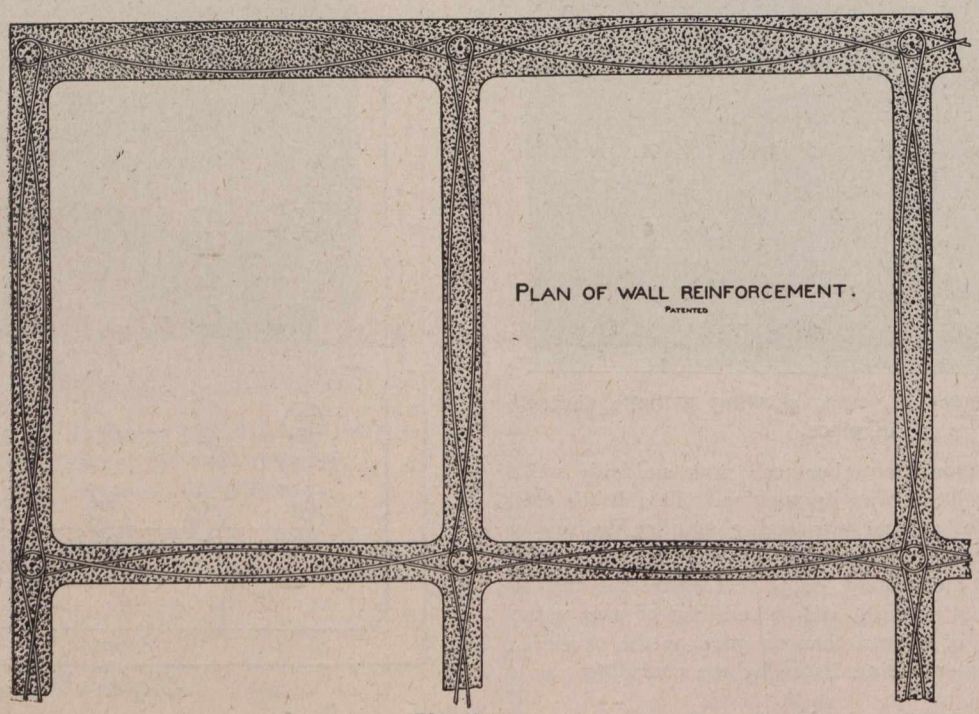

Fig. 2.

Fig. 1 is a top view of Mr. Tromanhauser's patent pontoon. This is octagonal in shape, one hundred feet across. A water-tight wooden bottom is secured to the lower end.

Fig. 2 shows the method of placing the reinforcement steel in the compartment walls, and Fig. 3 represents a stack of the wall truss bars bent to shape ready to be built