

FLOATING STATION FOR FLOATING FIRE ENGINES.

We herewith illustrate a floating station or dock for floating fire engines, which has been designed and lately patented by Mr. William H. Maw, and which is being introduced by Messrs. Merryweather & Sons, a firm who have been remarkably successful in the construction of small floating fire engines of the class which the station is especially designed to accommodate.

The object of the arrangement we illustrate is to afford shelter and protection to floating fire engines, and to enable

being placed in telegraphic communication with the land stations, they enable the floats to be brought into action without any delay. 4. They afford better accommodation for the men than can be given in the present large floats, while they also afford ample stowage for coals and stores.

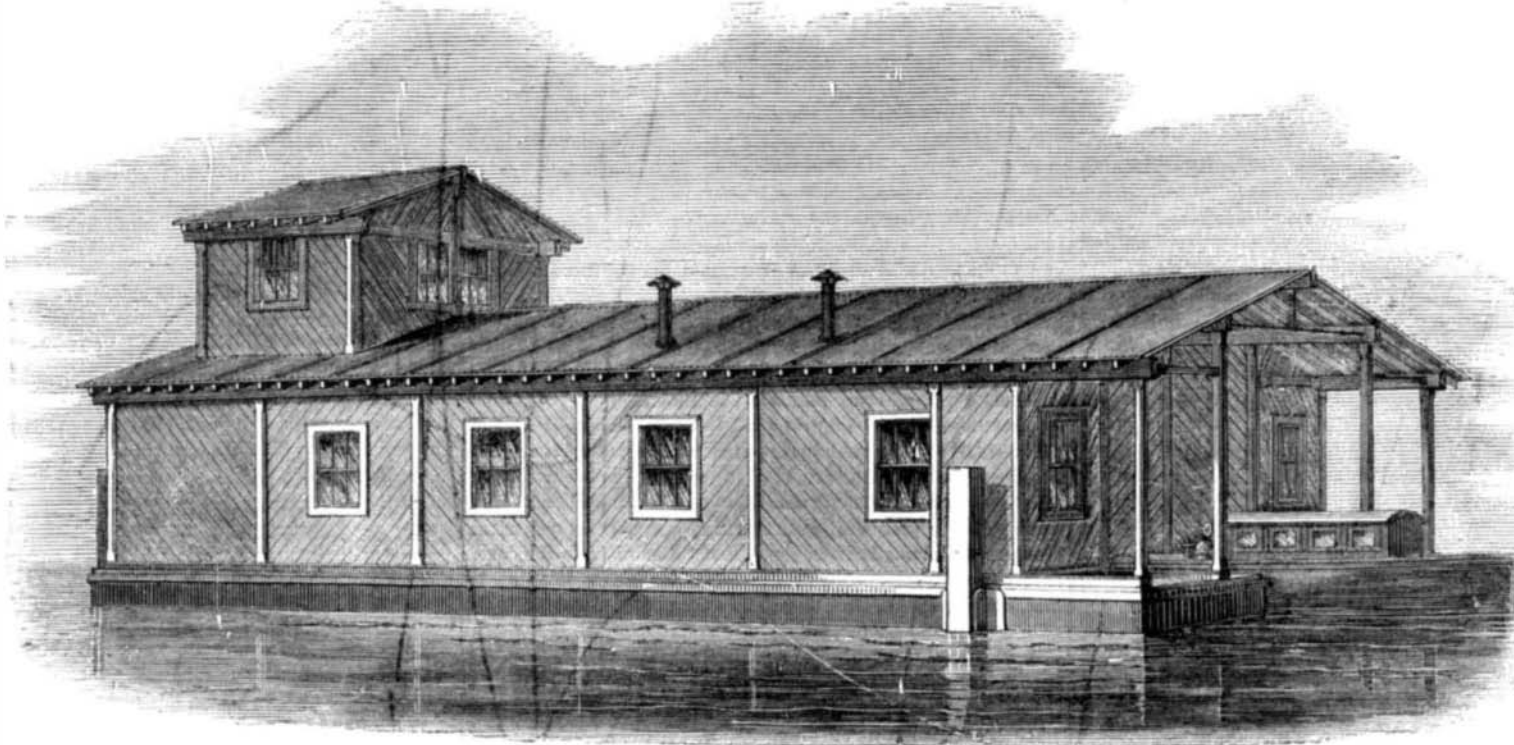
The Proposed Million Dollar Telescope.

Some of our correspondents are determined to push this matter. W. L. L. says that the people of the United States ought to promote the scheme at once, and he suggests that ev-

temperature being regulated at will by a globe valve in feed pipe.

This evaporator is no untried experiment, but can be seen in daily use at the works of the Rahway Glue Manufacturing Company, Rahway, N. J. The company claim to have evaporated 600 gallons an hour, and they invite all interested to visit the factory and see for themselves the actual working.

This evaporator is adapted for sugar, salt, dyes, wood and bark extracts, etc. For further information, address the sole

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floating fire engine vessels of comparatively small dimensions to be employed to greater advantage than is possible under ordinary circumstances. For this purpose it is proposed, by Mr. W. H. Maw, that the floating fire engine, when not at work, should be kept in readiness, under cover, within a suitable floating station or dock, which is permanently moored in the required situation, and may be placed in telegraphic communication with the shore and other fire stations of the district in which the floating station is situated. The floating station is constructed so as to carry firemen's quarters, coal and other stores, and apparatus for containing supplies of water, heated or otherwise, in readiness for feeding the boiler of the floating fire engine.

The floating station is constructed with two hulls connected together below the water level by cross girders as well as by a roof overhead, the hulls being placed sufficiently far apart to accommodate the steamers between them. The cross girders must, of course, be sufficiently immersed to clear the keel of the floating fire engine under all circumstances, unless it be desired that the floating fire engine or engines should be capable of leaving the dock at one end only, in which case some of the girders may be placed at a higher level.

In the cases of some harbors where vessels, lying at moorings, are liable to have their bottoms rapidly coated or fouled by marine vegetation, or otherwise injured by constant immersion, the floating fire engine station or dock is constructed to keep the floating fire engine out of the water, for which purpose the hull of the station is built in compartments divided from each other by suitable watertight partitions, some of these compartments being capable of having water admitted into them. These compartments are made of such size that, when filled with water, they will cause the draft of the floating station or dock to be increased by an amount exceeding the draft of the floating fire engine, and the cross girders connecting the two sides of the floating station at the bottom are formed with cradles capable of supporting the float without injury, and so placed that, when the hull of the station is thus deeply immersed, there shall be sufficient water over them to allow of the floating fire engine entering the dock. When the float has been thus brought into position, the water is pumped out of the compartments by connecting the latter to the suction pipes of the pumps carried by the float, the dock rising as the water is thus pumped out, and carrying the float with it. On the float being required for service, water is at once admitted to the compartments above referred to, and the dock sufficiently immersed to allow the vessel to float off the cradle.

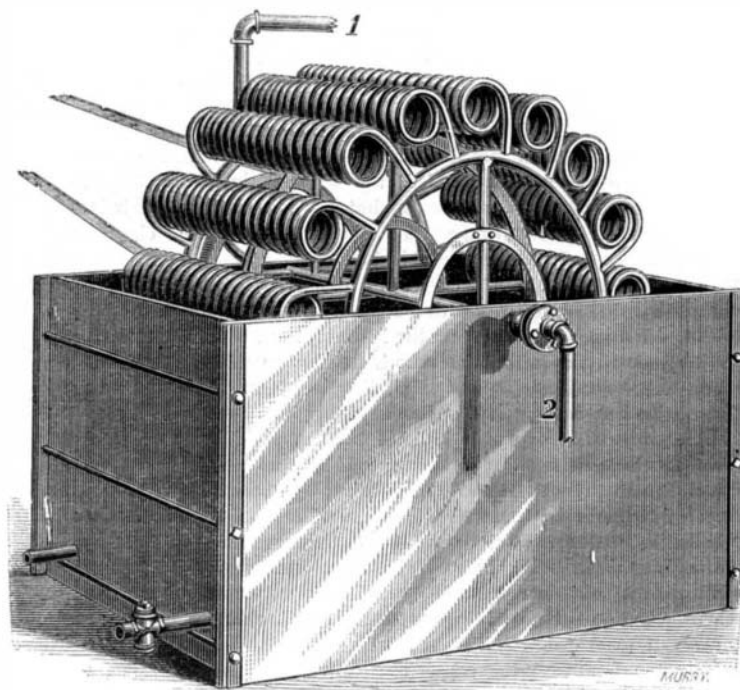
The construction of the station will be readily understood from the engraving, which we take from *Engineering*.

The floating fire engine stations are designed to obtain the following advantages: 1. They enable a small and handy class of floating fire engines to be used in the most effectual manner, by placing them at all times under the immediate attendance of their crews. 2. They afford complete protection for the floating fire engines, both from the effects of the weather and from chance damage from passing vessels. 3. By

ery one of our readers should contribute to the object, and an appeal for assistance be made to Congress. He concurs with a previous writer that a charge for the use of such an instrument would amply remunerate the investors, and he offers \$25 to help make a beginning. By similar liberality among all classes, the necessary funds could be raised; but the help of Congress to any such object should not be expected. There is no personal greed to satisfy, as there is in such cases as the Vienna exhibition, and no adventurer who will "lobby" the scheme through the two Houses; so the telescope must be constructed, if at all, by public spirit shown in voluntary contributions.

IMPROVED EVAPORATOR.

This machine meets one of the great requirements of the age, namely, a process of evaporation which, combining sim-

**BADOUX'S RAPID EVAPORATOR.**

licity with cheapness, is within the reach of all; and as no mechanical knowledge is needed to run it, it is peculiarly adapted to out-of-town factories, plantations, etc.

The evaporator is a strong wheel with hollow shaft, rims, and coils. 1 represents the feed pipe for introducing hot air or live or exhaust steam, which, meeting a check in the shaft, passes up through the arms into the rim, and is there distributed through the coils. 2 represents the discharge pipe for the air or condensed steam, which can be again utilized for heating feeding boilers, etc.

The tank can be made of wood or metal, and to hold such quantity as is desired. The wheel is rotated by hand, horse, or steam power, and it is said that it does not whip or froth the liquid, but lifts and evaporates it from the surface. When started, it can be left to do its work alone, the

agents, the Rahway Glue Manufacturing Company, P. O. Box 351, Rahway, N. J.

The Silk Worm in Japan.

The Italian silkworm breeder, Chiapello, who was lately enabled to travel in Japan, and visit the silk districts of Boshio, seldom entered by Europeans, publishes some interesting particulars in the *Moniteur des Soies*. Chiapello was greatly surprised by the almost complete want of mulberry trees. All mulberry plantations in that silk-producing province are hedges formed along irrigation canals, from twenty to twenty-five inches distant from each other; the single bushes are separated by a distance of from fifteen to seventeen inches. Great care is taken in properly manuring and watering these bushes till the fifth year. The Japanese consider the leaves from bushes four or five years old the best food for worms which are preserved for propagation, especially for those coming from the region watered by the rivers F'squama and Sirostaz. Besides the usual manure for the land generally, they give to each bush, from time to time, a few spoonfuls of finer compost, especially one prepared from a fish guano. The color of the eggs is said to be influenced by the kind of manure used; the latter, as well as the degree of manuring, is also stated to affect the produce.

This extreme care as to the food of the silkworm is a striking feature in the silkworm culture of the Japanese, which contrasts sharply with the carelessness practiced in this respect by European growers. The same care is observed in choosing animals for propagation, and a peculiar method is employed for selecting the strongest, consisting in temporarily exposing the cocoons to the influence of cold, whereby the weaker ones naturally die off. Another characteristic in Japanese silkworm breeding is that twice the room is given to each worm which is allowed for it in Europe. The detection of diseased animals is also worthy of notice. If a reddish point appears on the head, the worm is killed. Some districts have for centuries been famous for the excellence of their silkworms, and their eggs are largely used in Japan for propagation.

Longevity of Elephants.

It is stated by Sir Henry Stisted, who had a command in India during the Sepoy rebellion, in 1857, that some of the elephants employed by him had inscriptions upon their trunks showing their capture by the British forces at the celebrated battle of Plassy, nearly one hundred years previous. Pliny quotes Aristotle to the effect that elephants live from 200 to 300 years. In a vegetable-feeding quadruped, says Mr. Buckland, the duration of the teeth offers a fair criterion by which to judge of the probable extent of life, and we think that Sir Everard Home is the physiologist who has observed that the teeth of the deer and sheep are worn in much less than fifteen years; those of the ox tribe in about twenty years; those in the horse in about forty or fifty years; while those of the elephant will last for a century. The longevity of the last mentioned animal must be, therefore, in all probability, very considerable, although falling far short of the ancient estimate.