a composition of coal tar, rosin and hydraulic cement, the latter material having sufficient body and grit to dull the boring apparatus of the teredo. Coal tar alone has but little efficacy, because the animal does not digest the material through which it bores.

Over this coating there extends an unbroken sheet of heavy tin, covering the outside and the top of the sixth course. Every seam is soldered air-tight, and a layer of tar paper put above and below the tin. On the outside of this is the four inch yellow pine sheathing of the caisson which has been creosoted with ten pounds of oil to the cubic foot.

These precautions will not seem superfluous when it is remembered that the young sea-worm is a microscopic animal, less than the sixteenth of an inch in diameter, and can penetrate any crevice that water can pass through.

The course above this is also caulked and is protected on the outside like the lower courses.

We are thus provided with an additional air-tight layer in the caisson, which will come into play in case of accident to the iron skin.

The seven courses of timber immediately following the caisson proper are all laid with cement spaces between the timber; they are surrounded by tarred sills, and the tin and creosoted sheathing is carried up outside the whole extent. The courses above that are completely enveloped in concrete.

FLOOR.

The caisson was launched with a temporary floor, extending over the entire base. This was made necessary by reason of the shallow water in front of the launching ways. This floor remained in until the caisson was permanently grounded on the river bed, and helps materially in maintaining a level position of the same.

The air-chamber was not inflated before the caisson had touched bottom, and enough masonry laid to prevent its rising at high-tide from the effect of the air pressure. This floor then came into play to distribute uneven pressures until access was had to the air-chamber and the work of excavating was commenced.