

THE LAUNCH OF THE CAISSONS RECENTLY BUILT AT THE NORFOLK NAVY YARD.

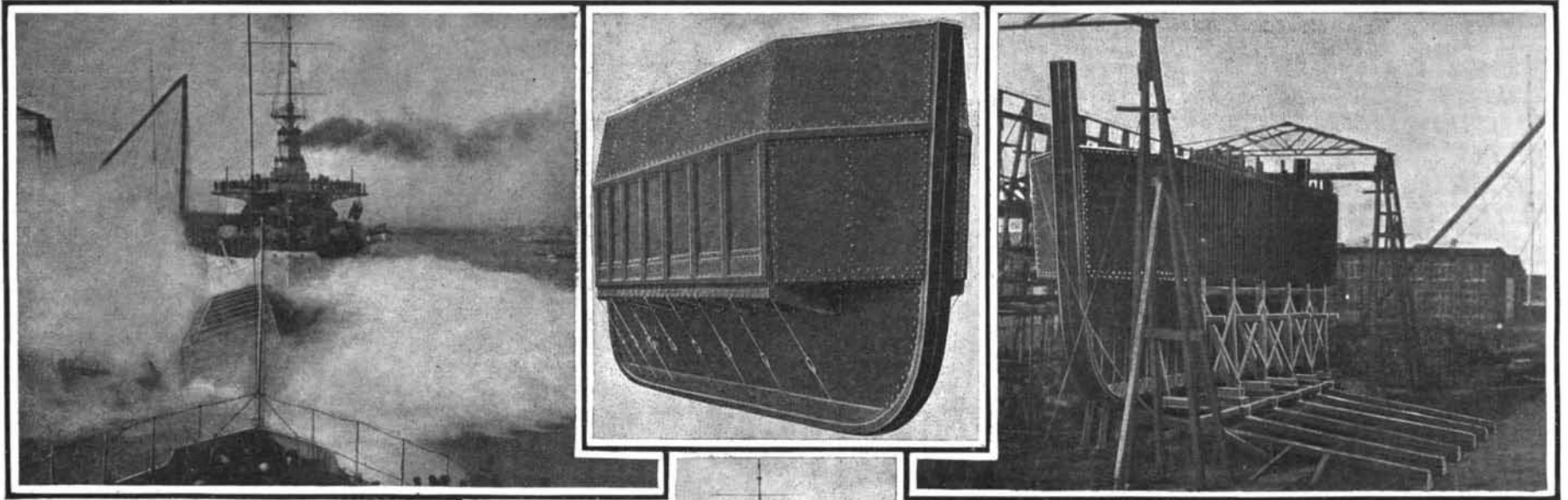
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The caissons recently completed for the drydocks at Charleston, S. C., and Norfolk, Va., differ from the

have been as difficult as to build ways for an end-on launching.

The ground ways, which were temporary, were carried out over the sea wall for a distance of about 13 feet, and the height of the sea wall above the

angle of nearly 90 deg., i. e., that the side of the caisson would strike almost flat. To protect the side plating, which was 20-pound plating, there were nailed along the side white oak planks 6 inches by 12 inches, spaced about one foot apart. The accompanying pic-



The Launch.

old ship-shaped caissons in several particulars.

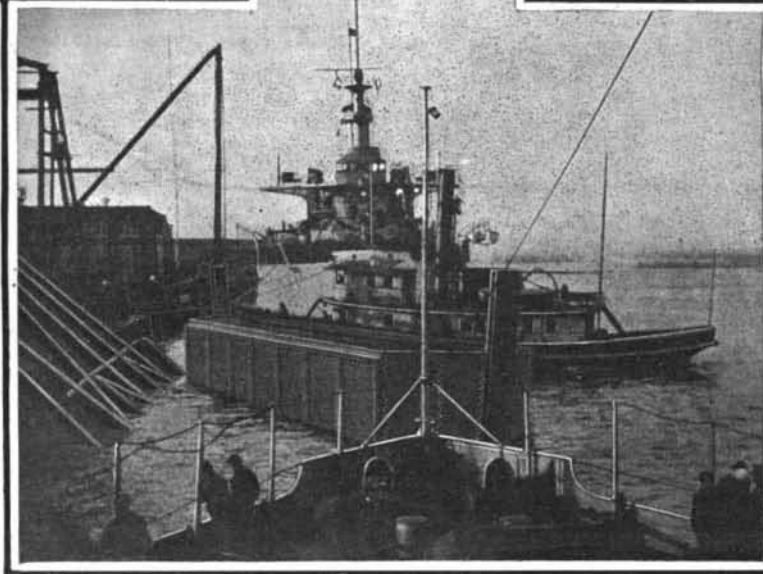
A section of the caisson built in 1892 for the stone dock at the Norfolk navy yard, which is the general type of caisson now in use in nearly all docks, is essentially boat-shaped, and built up from the keel, with frames and plates leaving tanks inside for flooding.

The new caisson, as shown by section, consists of a box with parallel sides tapering toward the ends, and a flat bottom, under which projects a deep fin keel, which is stiffened on each side by I beams, and also by tie rods fitted with turnbuckles which connect the bottom of the keel to the outer edge of the overhang of the box. The plating of the keel is 30 and 40 pound plate, and of the upper body 20 and 17½ pound plate; the material throughout being of mild steel.

One caisson is provided with ten 24-inch gate valves, and the other with twelve 22-inch gate valves, for flooding the dock; these valves are both hand and electrically operated, each valve being operated by a small induction motor, the induction motors being operated from a common starting panel. For pumping out the ballast tanks a centrifugal pump with 15-inch suction is provided; this pump is also driven by an induction motor.

The dimensions of these caissons are approximately: Length, 114 feet; beam, 20 feet; depth at center, 42 feet; draft, light, 26 feet; draft with ballast tanks filled, 36 feet; displacement, 1,050 tons.

Besides the departure from the conventional ship form of floating caisson, the most interesting feature was the peculiar means of launching. There was available at the Norfolk navy yard the old launching slip used for the "Texas" and "Raleigh." In order to use this, however, it would have been necessary to extend the ground ways to a great distance into the stream, on account of the great draft of the caissons in the launching condition, which was 23 feet 7 inches. This was objectionable, not only on account of the cost involved, but because it would have interfered with navigation in the narrow channel opposite the yard. It was consequently determined to launch the caisson broadside on. This method is regularly employed on the Great Lakes, but there the ground ways are carried out far enough for the ship to become water-borne before leaving the ways. To have built such ways would



After the Launch.

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level of the water was about 7 feet. The ground ways were not secured to the ground, and when the caisson reached the edge of the wall, the inner end of the ground ways rose, tilting the caisson. The caisson itself was carried on a cradle resting on six sliding ways; this cradle was weighted so as to sink clear of the caisson, as were also the outboard ends of the ground ways.

From tests made on a model in the tank, it was expected that the caisson would strike the water at an

On the Ways.

tures show the caisson before, during, and after launching; the one showing her taking the water gives a good idea of the tilting effect of the ground ways.

THE COLD STORAGE OF FURS.

It is reasonable to suppose that any set of conditions under which furs naturally thrive, would if successfully reproduced offer the best means for preserving them. That is the principle adopted for the modern storage of furs as exemplified by the dry-air cold storage method.

Furs are finest, glossiest, thickest, and best in the coldest climates. The most valuable pelts come from the Arctic or sub-Arctic regions, and hence, to retain their natural brilliance, they should be kept, as far as possible, during their summer period of rest, in a temperature equivalent to that of their native land. Where such conditions prevail, the natural oils of the skins are preserved, instead of drying out in the summer heat of the average storehouse. Again, in cold storage damage by moths is absolutely prevented. Freezing benumbs the larvæ and renders them harmless for the time being. Preliminary precautions are of course taken thoroughly to clean the furs before storing them. It was with these facts in view that the new fur storage plant was planned. Existing plants were carefully studied and the shortcomings they developed were avoided.

The plant occupies a space 80 x 120 feet, extending from the eleventh to the thirteenth floors of the Wanamaker building. The walls, which are 24 inches thick, are composed of cork and fireproof materials and absolutely exclude the heat of the outside air. Entering the storage vault through a series of air-locks which are protected by doors built on the principle of those used on refrigerators, the observer is struck by its whiteness, airiness and lightness.

No wood is used in the floors, walls, or ceilings, concrete and steel being the only materials. The floors of the upper tiers of the vault are formed of iron gratings, like those in the engine room of an ocean liner. All the iron cross-pieces from which the hangers for the garments are attached are removable and can be arranged to suit the number and length of the articles to be stored.

The ground floor of the vault is equipped with about 4,000 spindles projecting horizontally from uprights, giving storage



SCENE IN A COLD STORAGE ROOM FOR THE PRESERVATION OF FURS.