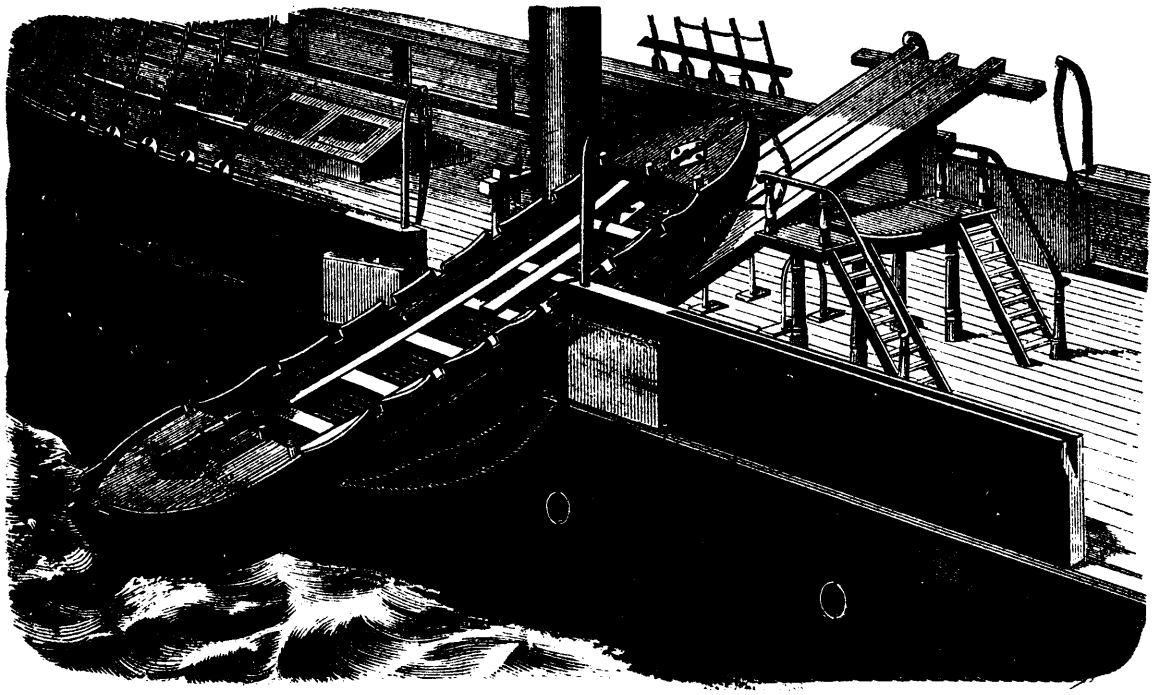

FIG. 1.—WHITE'S BRIDGE LIFE BOAT.

LIFE-SAVING APPARATUS AT THE RECENT NAVAL AND SUBMARINE EXHIBITION.

We give engravings (for which we are indebted to the *Engineer*,) of a variety of life-saving apparatus, shown at the recent Naval and Submarine Exhibition, London, England.

Fig. 1 shows a "bridge life-boat," by John White, Medina, Dock, Cowes. This life boat is held on the bridge athwart ship, which consists of a launching way pivoting horizontally at the centre so that either end can be tipped down to the gunwale on either side, when the dog shores being struck, the lifeboat shoots into the water. Any water shipped is discharged through valves, and the boat is easily launched. The Orontes has long been fitted with this boat bridge which has been so highly approved of that the system has been now adopted for the Tamar and Himalaya. This boat carries from 150 to 200 men. Filled with water she would support 100.

Fig. 2 is Roper's life raft, forming a captain's bridge. Its weight is given as 5¼ tons, floating power 80 tons. It is intended to be self-launching on its fastenings being released. Mr. Roper has also self-floating raft decks for river boats. These simply rest by their weight in their place. If a vessel settled down in smooth water they are designed to float of with the passengers. A model of the ill-fated Princess Alice is fitted with decks which are calculated to support 900 passengers. The decks proposed are fore and main and fore and aft saloon decks, and sponson house tops. The design took a first prize at the aquarium. Fig. 2 and 3 show the raft on deck and afloat. This raft took the 100 guinea prize at Islington.

Rose's life-buoy seat, shown in fig. 3, consists of two thin iron buckets screwed together at the bottom, with tops closed. They may be used as buckets, or a buoy, or to render a hencoop seat buoyant—*vide* Figs, 4, 5, and 6. The cushions of the hencoop seats are life belts. A specimen made for Sir T Brassey's yacht, the Sunbeam, was shown.

Copeman, of Downham Market, exhibited a raft constructed of seats by means of connecting rods, spars, and grating seats. This was put together by two men in less than two minutes repeatedly at the exhibition (see Fig. 7). It is a very serviceable, strong, and simple arrangement. The inventor claims that the expense is small—about $25 extra on each seat; that the space occupied is no more than that of ordinary seats; that it is always ready for use, and when in the water cannot be upset. Masts and oars are carried. The strength and simplicity of this will probably commend it. It is to be tried shortly for the Prince of Wales.

The wreck escape, shown in figs. 8, 9, and 10, is the work of Mr. Hodgson, another practical man eminently qualified to judge as to what may be done in a moment of danger, having earned eight or nine medals for saving life himself, and also so ready to point out anything good in designs of others, that one must respect the honesty of his opinions. Two wreck escapes, one of wood tubes and cells, the other steel, weight 7 to 17 cwt., supporting twenty to seventy five men; rope bottom reversible; may be used as an ordinary boat, the resistance being brought down to much less than is usual in bottomless boats. It is stated that it has been actually tried and obtained good speed. The form appears to be a very good one for a bottomless boat. It was tried with success before Admiral Mends in 1869. It is, we believe, the first and also the best reversible boat. It is possible for a man under it to pull the ropes asunder and creep through the bottom.

(For balance of Cuts, see page 172.)