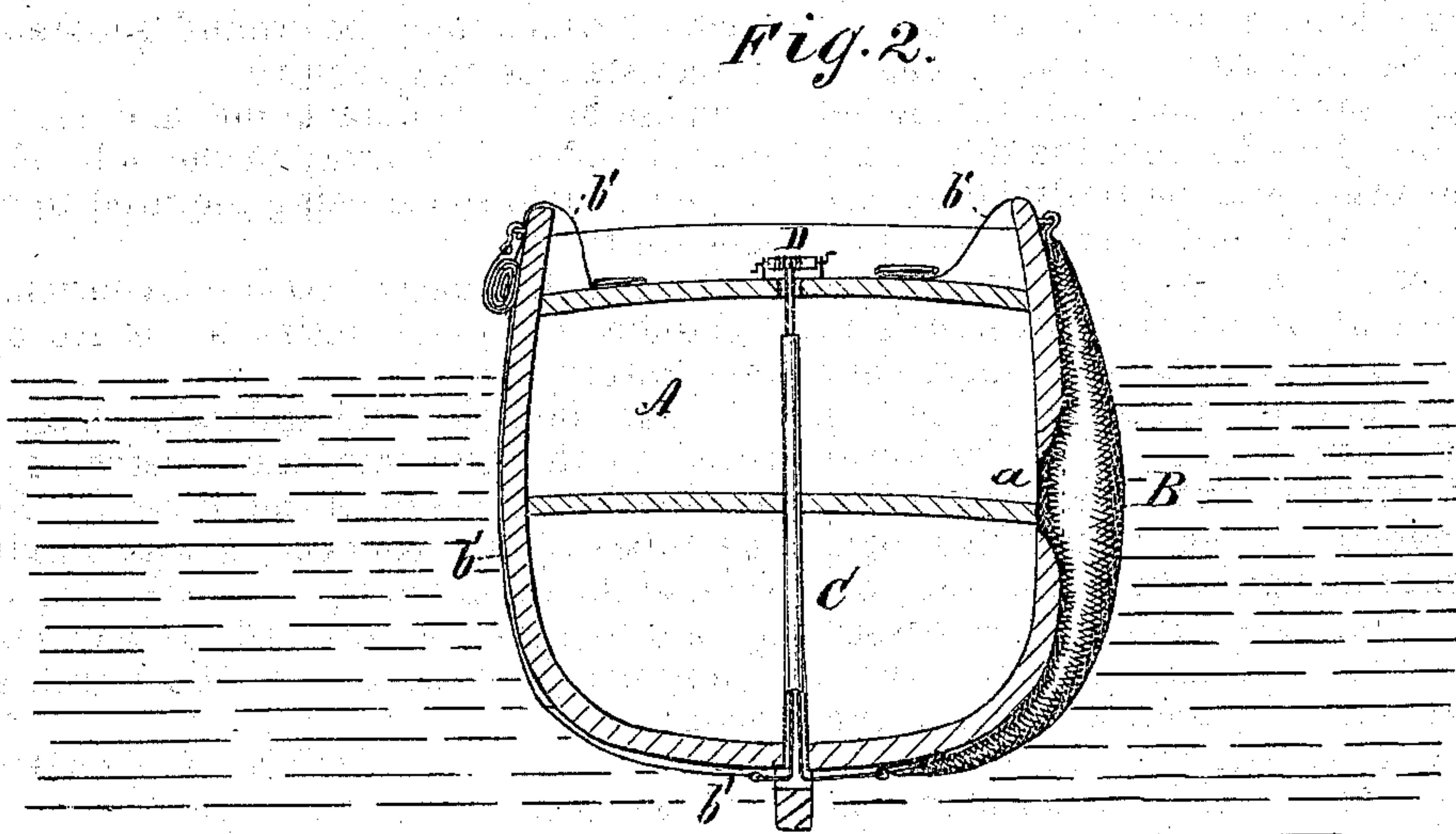
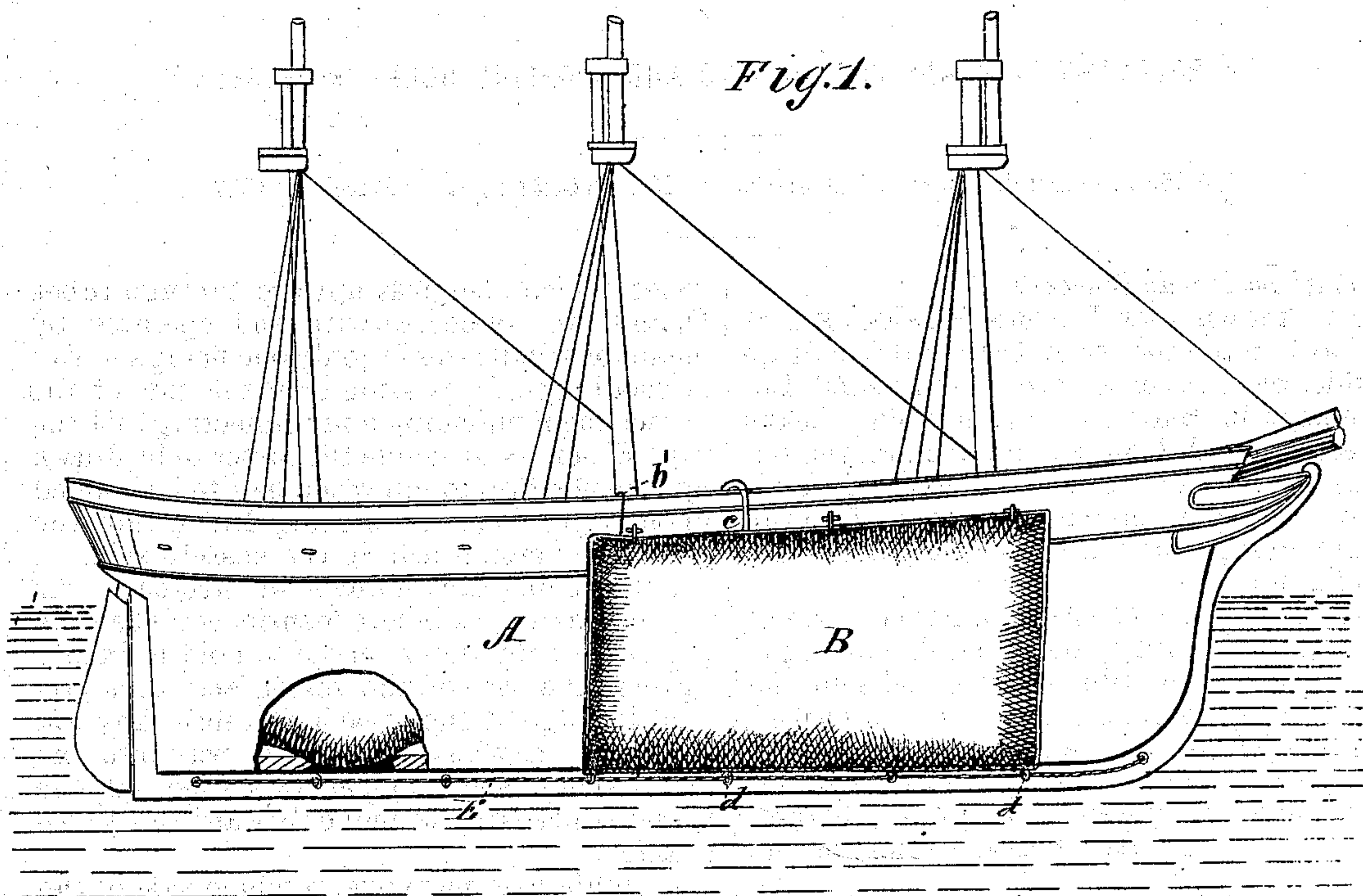


J. W. COOPER.

Means for Buoying and Stopping Holes in Vessels.

No. 136,817.

Patented March 18, 1873.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN W. COOPER, OF HUBBARD, OHIO, ASSIGNOR TO AMOS E. ROGERS,
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SYLVANIA, TRUSTEES.

IMPROVEMENT IN MEANS FOR BUOYING AND STOPPING HOLES IN VESSELS.

Specification forming part of Letters Patent No. 136,817, dated March 18, 1873.

To all whom it may concern:

Be it known that I, JOHN W. COOPER, of Hubbard, in the county of Trumbull and State of Ohio, have invented a new and useful Improvement in Buoying and Stopping Leaks in Vessels; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

The invention consists in a novel mode of applying flat, flexible, and inflatable air-tight bags to vessels in order to stop leaks in the hold thereof, as hereinafter fully described and subsequently pointed out in the claim.

Figure 1 of the drawing is a side elevation of a vessel with my invention applied thereto. Fig. 2 is a transverse vertical section of the same.

In the drawing, A represents the hull of a vessel, having a hole, *a*, stove in its side. B is a flat, flexible, inflatable, air-tight bag of rubber or other suitable material, suspended at top by means of hooks from the side of the vessel, and covering and partially filling the opening *a* in its side, and thereby stopping leakage thereat. The bag B is inflated for use by an air-pump of ordinary construction, and which may be located at any convenient place on the deck, and connected to the bag by means of a flexible tube, *c*. At its lower edge the bag is provided with a series of hooks, *d*, for the purpose of connecting it with a rope, E, which extends along the keel from the bow to the stern of the vessel, and thence passes upward through tubes C, and connect at their ends with windlasses, by means of which the bag B is drawn down into position for use upon the side of the vessel. At suitable distances apart between the bow and stern of the vessel the rope E is connected by other

ropes, which also pass upward through tubes C, and are connected with and operated by means of windlasses D, (only one being shown.) A small rope, *b'*, passing over the side of the vessel about midships, and connecting with the rope E, serves to enable the latter to be drawn up into position to allow the bag to be hooked upon it previous to its being drawn into the position to stop a leak in the vessel's side.

After being drawn down or stretched, the bag is inflated, as before mentioned, when the pressure of the water serves to hold it fixedly against the side of the vessel, and thus prevent leakage at the breach therein. Any water which may have forced its way into the leak having been pumped or bailed out, the vessel is prepared to move forward to its destination.

A single bag may cover a whole side of the vessel, or there may be several different ones, each of which may be wound separately, as circumstances may require.

These bags are detachable, and may be removed and stowed away in the hold of a vessel, very little space being required to accommodate them.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A flat, flexible, and inflatable bag, B, secured to the gunwale, and stretching-cords passing down the side of the vessel, up through the tubes C, and connecting with windlasses D on deck, all as shown and described, whereby said bag may be adjusted to cover a breach at any point in the side of the vessel, as set forth.

JOHN W. COOPER.

Witnesses:

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