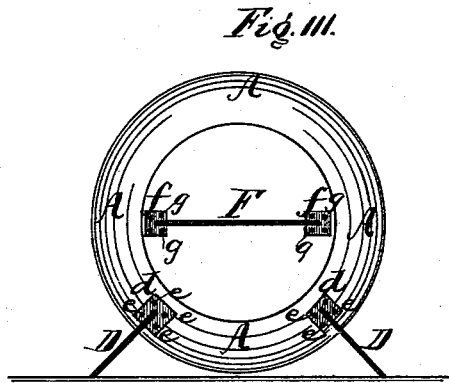
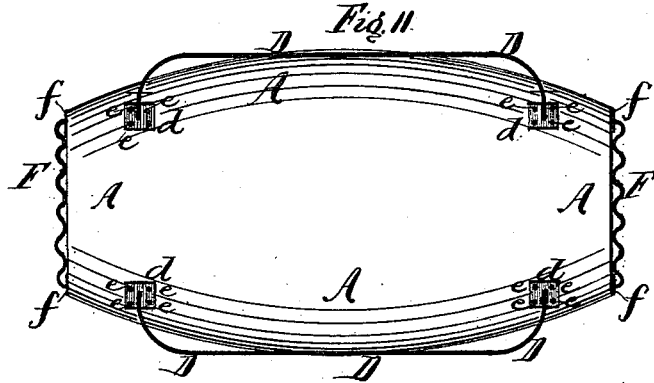
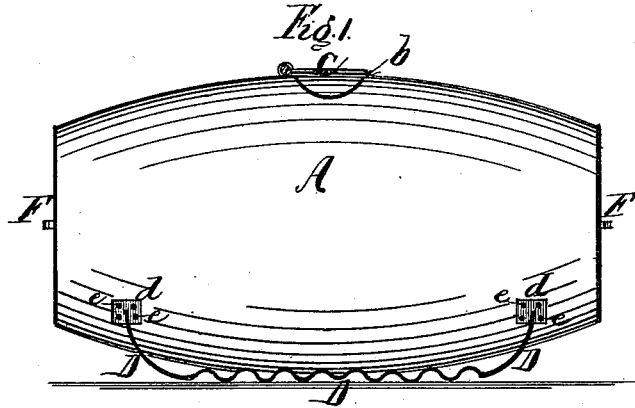


S. M. BADGER.
Life-Raft.

No. 212,121.

Patented Feb. 11, 1879.



Witnesses:
J. D. Smith.
Ch. Kiegelman.

Inventor:
Sprague M. Badger.
Per: *Richard Gernes*
Atty.

UNITED STATES PATENT OFFICE.

SPRAGUE M. BADGER, OF WHITNEY'S POINT, NEW YORK.

IMPROVEMENT IN LIFE-RAFTS.

Specification forming part of Letters Patent No. **212,121**, dated February 11, 1879; application filed July 26, 1878.

To all whom it may concern:

Be it known that I, SPRAGUE M. BADGER, of Whitney's Point, in the county of Broome, and the State of New York, have invented new and useful Improvements in Life-Rafts; and I hereby declare that the following is an exact and true description of my invention, which will enable others to construct and use my invention, reference being had to the accompanying drawings, forming a part of this specification, and to the letters and figures of reference marked thereon.

The object of my invention is to construct a life-raft for use on the seas by employing the water-casks used on board of vessels for this purpose, and in making such attachments to such casks that they may readily and safely be held together, and when thus united form a serviceable and safe life-raft.

My invention consists in attaching to the sides and to the heads of each cask corrugated iron bars or handles, so constructed that they readily may be bolted to the sides and to the heads of the casks, and held there three to four inches (more or less) off from the casks.

The side bars or handles, being made about one-half of the length of the cask, are bolted parallel to the sides of the cask in such a manner that they serve as rests for the cask, when the same are placed on the deck of a vessel, and prevent the cask from rolling about, and, being corrugated, allow the deck to be cleaned, as no refuse will rest under the bars.

When the bung-hole lid is fastened onto the cask, after being emptied of water, and the cask is thrown into the sea, these side bars serve as supports for ropes, by aid of which the casks are held together, and are prevented from being revolved by the waves. These side bars also serve to place planks or boards upon, so as to form a flooring for the raft.

It is readily understood that the casks are turned around in the sea, so that the bung-hole is downward and the side bars are upward.

To both heads of the cask are bolted the corrugated head-bars or handles. These bars are nearly as long as the cask-heads are wide, and are so constructed and bolted to the heads that they are placed parallel to the bung-hole and top of the casks and to the heads. By aid of these head-bars or handles, a cask, when on the deck or in the hold of a vessel,

is readily moved from one place to another, and also readily thrown into the sea when so required.

When the casks are in the sea and a raft is to be formed, ropes are placed in these handles, and thus unite one cask with another, the whole forming a safe and easily-constructed life-raft.

The bung-holes in such water-casks are generally made so large that water may be drawn from the casks by lowering a tin measure into the cask through the bung-hole. If not made so large the bung-hole should be enlarged, and, preferably, made oval—say about six inches long by four inches wide—so that the arm of a man may be introduced through the bung-hole in order to place washers and packings inside of the heads of the screws, by aid of which the bars or handles are securely fastened to the casks. These enlarged bung-holes keep the water in the casks better aerated than smaller bung-holes, and serve also to empty the casks of water very quickly in emergency.

The bung-hole lid is preferably made of metal, hinged to a metallic frame, screwed or riveted onto the cask.

The lid is held down to the frame with a screw. A rubber washer is used.

Referring to the drawings, Figure 1 is a side view of a water-cask embodying my invention. Fig. 2 is a bottom view, and Fig. 3 is an end view, of the same.

A is a water-cask, with bung-hole *b* and hinged lid *c*. *D D* are the corrugated side bars or handles, with fastening-plates *d d*. *e e* are bolts, by aid of which the bars or handles are held to the casks. *F F* are the head-bars or handles, with fastening-plates *f f*, and *g g* are the bolts.

Having thus described my invention, I desire to claim—

1. The corrugated side bars *D D*, with fastening-plates *d d*, in combination with the water-cask *A*, substantially as and for the purpose set forth.

2. The corrugated head-bars or handles *F F*, with fastening-plates *f f*, in combination with the water-cask *A*, substantially as and for the purpose set forth.

SPRAGUE M. BADGER.

Witnesses:

JOHN P. WHEELER,
E. B. BLACK.