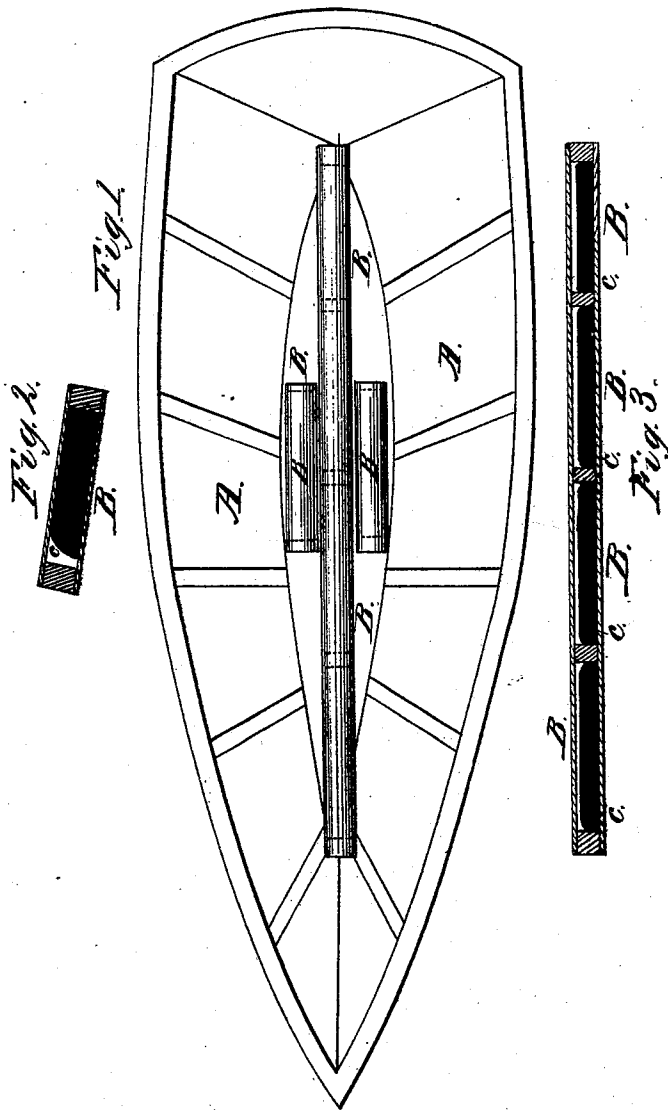


J. A. BIDWELL.
BALLASTING VESSELS.

No. 172,907.

Patented Feb. 1, 1876.



Witnesses:

Christ H. Harrom
Emory D. Baurd

Inventor:

Julius A. Bidwell.

UNITED STATES PATENT OFFICE.

JULIUS A. BIDWELL, OF TOLEDO, OHIO.

IMPROVEMENT IN BALLASTING VESSELS.

Specification forming part of Letters Patent No. **172,907**, dated February 1, 1876; application filed November 11, 1873.

To all whom it may concern:

Be it known that I, JULIUS A. BIDWELL, of Toledo, in the county of Lucas and State of Ohio, have invented certain Improvements in Ballasting Vessels, of which the following is a specification:

My invention consists in providing vessels, particularly those of light draft, and where the greatest speed is desirable, with a ballast composed of quicksilver, and contained in compartments, and placed in the hold of a vessel or anywhere amidships, as may be deemed most expedient.

In the drawing a top view of the body of a vessel is presented, in which A represents the interior; B B B B, compartments, into which vessels c c c c c, containing mercury, are placed. These I show as situated in the bottom of the boat, and arranged longitudinally, three compartments being placed parallel about the center of the bottom of the vessel. This position may be varied, as circumstances and exigency of navigation may demand.

Mercury, while having all the mobility de-

sirable, does not percolate, causing disagreeable dampness. Nor does it congeal, except at a very low temperature. Economy of space is also secured from the superior specific gravity of quicksilver. This in yachts or small vessels is desirable.

It is believed that in racing upon the water, as in competition among yachts for supremacy, my invention will be found especially adaptable.

I am aware that water has been employed as ballast, as in the English patent of T. A. Elliot, 1863; but this, as set forth, does not fulfill all the conditions required, and in many respects is dissimilar.

What I claim as new, and desire to secure by Letters Patent, is—

A ballast composed of mercury, and placed in compartments, as described, for the uses and purposes set forth.

JULIUS A. BIDWELL.

Witnesses:

CHESTER H. HARROVER,
EMERY D. BARRETT.