

H. BROWN.

Mooring-Attachments for Buoys.

No. 157,785.

Patented Dec. 15, 1874.

Fig. 1.

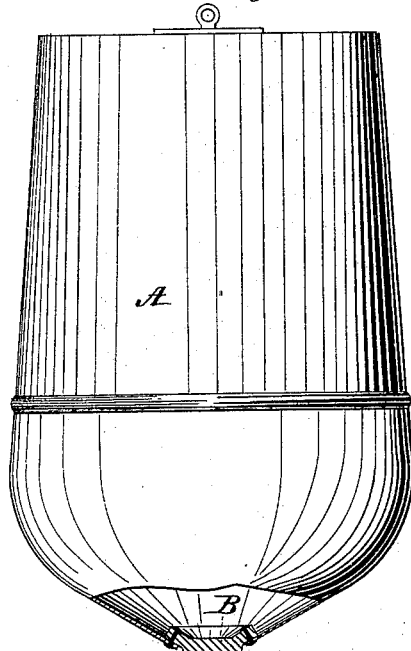


Fig. 2.

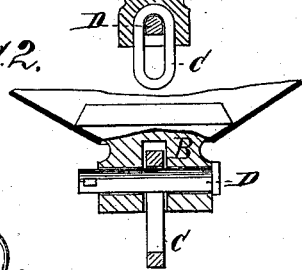


Fig. 3.

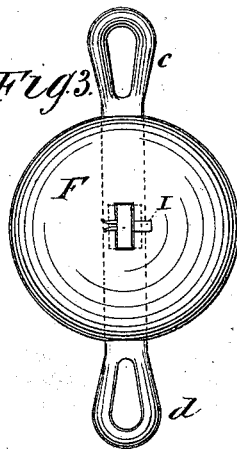
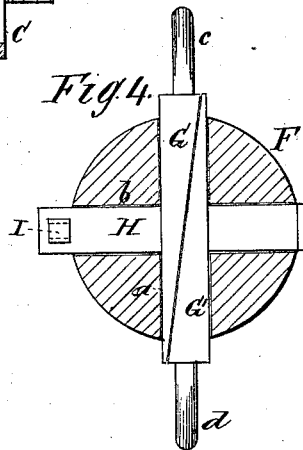


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY BROWN, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR TO HIMSELF AND JOHN F. TAYLOR, OF SAME PLACE.

IMPROVEMENT IN MOORING ATTACHMENTS FOR BUOYS.

Specification forming part of Letters Patent No. 157,785, dated December 15, 1874; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, HENRY BROWN, of the city and county of Charleston and State of South Carolina, have invented a new and useful Improvement in Ballast-Balls and Cast-Iron Bottom Plates of Buoys; and I do hereby declare that the following is a full, clear, and exact description of the same; reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is the shell of the buoy with lower portion broken away, showing the bottom plate and connection. Fig. 2 is a detailed view of bottom plate and connections. Fig. 3 is the ballast-ball and connection. Fig. 4 is a section of the same.

The object of my invention is to provide a means of replacing the worn-out mooring of buoy-bottoms and ballast-balls without the expense, time, and trouble usually involved in the repairs of the same. It consists in making the cast-iron bottom plate of the buoy with a pocket, which receives a detachable mooring-link to be fastened therein by a keyed bolt. It also consists in casting the ballast-ball with two square holes, which intersect each other at right angles at the center, one of which said holes receives the tapering shanks of two loops, and the other a bolt, which passes through said shanks and locks them.

In the drawing, A represents the shell of the buoy, which floats upon the water, and is partly immersed in the same. B is the cast-iron bottom plate, which is attached to the shell by bolts in the usual way, and is fashioned into a downwardly-opening pocket. Said pocket receives the detachable mooring-link C, which connects the buoy with the ballast-ball. D is a flat-sided bolt, which passes through the pocket, and secures the link C. Said bolt is made with a flat side, to prevent turning and chafing, and is fastened with a split key. F is the ballast-ball, cast with the

central and transverse holes *a b*, of which *a* receives the shanks *G G'* of the loops *c* and *d*, and *b* receives the bolt *H*, which passes through slots in said shanks, and is itself fastened by a split key, *I*, thus locking the loops fast to the ballast-ball in a manner that is easily detachable. The said holes *a* and *b* are made square to prevent turning and chafing, and the shanks *G G'* are made wedge shape to drive up tight and secure the loops in the center.

As buoys are now constructed, the link is cast in the buoy-bottom, and the loops cast in the ballast-balls. Now, as these connections wear out in a few years, the entire buoy has to be transported at a great expense and loss of time to a machine-shop to be repaired, and the ballast-balls, which frequently weigh over one thousand pounds, have to be cast entirely aside.

My improvement obviates all this expense, loss of time, and waste of material by making the mooring-link and ballast-ball loops detachable, as hereinbefore described, by means of which a worn-out link or loop may be replaced by a new one in a very short time and in a manner the economy of which is obvious.

Having thus described my invention, what I claim as new, is—

1. The combination, with the bottom plate of a buoy, of a detachable mooring-link, substantially as and for the purpose described.

2. The combination of the bottom plate B, the detachable mooring-link C and the bolt D, substantially as and for the purpose described.

3. The combination of the ballast-ball F, constructed as described, with the slotted and tapering shanks *G G'*, of the loops, and the locking-bolt *H*, substantially as and for the purpose described.

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Witnesses:

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