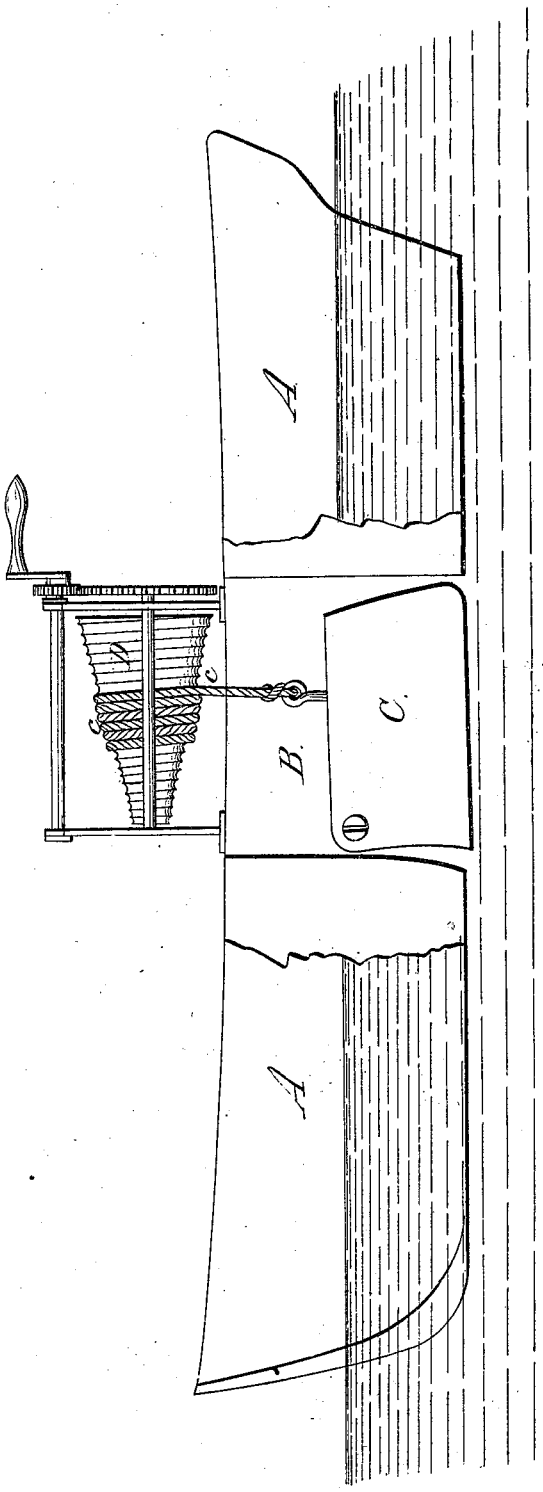
J. C. & H. W. Hamilton.

Center Board.

No. 46351. Patented Feb. 14. 1865



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UNITED STATES PATENT OFFICE.

JOSIAH C. HAMILTON AND HENRY W. HAMILTON, OF WASHINGTON, D. C.

IMPROVED WINDLASS FOR OPERATING THE CENTER-BOARDS OF VESSELS.

Specification forming part of Letters Patent No. **46,351**, dated February 14, 1865.

To all whom it may concern:

Be it known that we, JOSIAH C. HAMILTON and HENRY W. HAMILTON, of the city and county of Washington, in the District of Columbia, have invented a new and useful Improvement in the Mode of Raising and Lowering the Center-Boards or Slip-Keels of Sail-Vessels; and we hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, of which the figure in the drawing is a side elevation of a vessel or boat, with a portion of the side about midway of it broken out, as indicated by the jagged lines, to show the center-board or slip-keel and its attachment to a conical screw-drum by means of a rope or chain.

The nature of our improvement consists in the application of a conical screw-drum suitably arranged in a frame on the deck or other place of a sailing vessel, for the purpose of raising and lowering the center-board. We are aware of conical drums, or of an apparatus similar to this, being used before for various purposes, but not in this connection; also, of a straight drum being used for this particular purpose, which is in more general use than any other mode. Thus, it will be observed, the advantage which a conical screw-drum possesses over that of a straight one is obvious, for the following reasons: The revolutions of a straight drum are the same that the crank makes; consequently, as the natural tendency of the water is to press the keel upward, the rope or chain is therewith slackened, impelling the operator to renewed exertions to take it up, in order to prevent the keel from sagging below the bottom of the vessel, or catching or thumping against the sides of the box when entering it, whereas on a conical drum the slack thus caused is taken up fast enough to prevent it, so that the services of a man are not required to take care of it to give a uniformity in the winding or unwinding, which is necessary to those now in use; and, besides, relieving the operator of the extra exertion required, the constantly enlarging or diminishing surface of the drum giving an increased or decreased purchase to the rope or chain in whichever direction it may be revolved, from which it will be seen that at a point where the action of the water ceases to affect the keel much, and hence where the weight of it is greater, the enlarging or diminishing surface of the drum gives a power proportionate to the increase or decrease of the weight, without an additional application of it at the cranks, which is the desideratum of this invention, and which is not the case in the use of a straight one.

To enable any one skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A in the figure in the drawing is the boat or vessel; B, the box or place in which the center-board C operates, being hung on a pivot at the upper corner. Immediately above, on the deck or other suitable place, is the conical screw-drum D, supported by an ordinary frame, with cog-gearing to operate it, there being a crank on each or one side of the frame, as the case may require. The cylindrical surface of the drum from one end to the other is grooved, corresponding to the shape of a screw, to prevent the rope or chain slipping, and to give the proper direction to it in the enlargement or diminishment of the drum, so that an increased or decreased purchase may be obtained, for the reasons above named.

C is the rope or chain. It is fastened to the center-board in a proper manner, and then attached to the end or larger part of the drum.

Operation: One or two persons may raise or lower the keel, as occasion may require, by taking hold of the cranks, which make three revolutions to every one the rope or chain makes in traversing that part of the drum on which it is being wound or unwound, thus giving the proper proportion between the two, and insuring the desired power at a point where the weight of the keel is greatest.

Having thus fully described our invention, what we claim therein as new, and desire to secure by United States Letters Patent, is—

The application and arrangement of a conical screw-drum on the deck or other place of a vessel, in combination with the center-board, whereby the slack to the rope or chain produced by the buoyancy of the water pressing the board upward is taken up by the increased surface of the drum in its revolution, substantially in the manner described.

JOSIAH C. HAMILTON.
HENRY W. HAMILTON.

Witnesses:
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