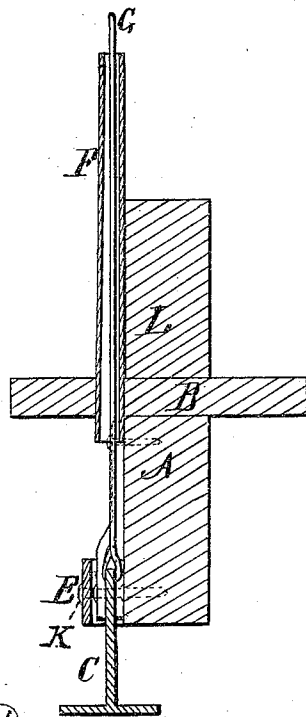
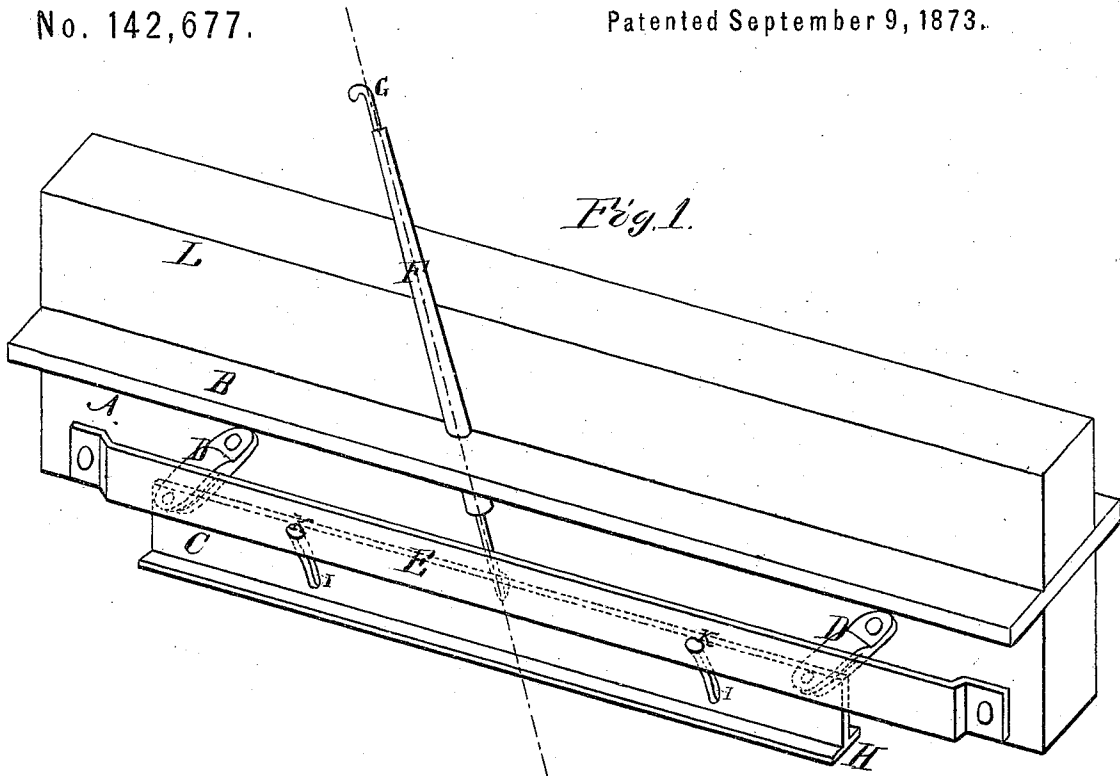


J. CALL.

Center Boards for Vessels.

No. 142,677.

Patented September 9, 1873.



Witnesses.
E. A. Bates.
George E. Upham.

Inventor.
James Call
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Atty

UNITED STATES PATENT OFFICE.

JAMES CALL, OF RICHMOND, MAINE.

IMPROVEMENT IN CENTER-BOARDS FOR VESSELS.

Specification forming part of Letters Patent No. **142,677**, dated September 9, 1873; application filed July 26, 1873.

To all whom it may concern :

Be it known that I, JAMES CALL, of Richmond, in the county of Sagadahoc and State of Maine, have invented a new and valuable Improvement in Center-Boards for Vessels; and I do 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 annexed drawings making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of my center-board. Fig. 2 is a sectional view of the same.

My invention relates to center-boards for vessels; and it consists in the construction and novel arrangement of the horizontal flanges on each side of the lower edge of the center-board; of the oblique curved slots through the center-board; the guard-plate, with its transverse pins, engaging with said slots; the pivoted arms and the tube for the operating-rod, as hereinafter more fully described.

In the drawings, A represents the keel of a vessel; B, the vessel's bottom; C, the center-board. D D are pivoted arms connecting the center-board and keel. E is an iron guard-plate attached by bent flanges to the side of the keel, and forming therewith a slot, within which the center-board plays. F is a tube running from the bottom of the vessel to the deck. G indicates an operating-rod running through the tube and connecting with the center-board by means of which the said center-board may be raised or lowered at pleasure. H represents base flanges horizontally extending outward from each side of the bottom of the center-board at right angles therewith, showing, in cross-section, the form of an inverted T. I I are oblique-curved slots in the center-board, through which pass the pins K K. These strengthen the iron plate on the side of the keel, and serve as bearings, upon which the

center-board rests when in its raised or depressed position. The curvature of the slots is opposed to the curve of direction of the center-board and tangential thereto, so that when the center-board is fully raised or depressed it will remain in position.

It will be perceived that this invention may be applied to any vessel of ordinary construction with but little labor or expense, and without impairing the strength or security of the vessel. Sometimes it is preferred, instead of using a guard-plate, to slot the keel itself; or the center-board may be double, embracing the keel.

The protecting sideplate E should, properly, be made of malleable iron. Its width and appropriate thickness will be proportioned to the size of the vessel to which it is to be applied. The extremities of the plate E should be reinforced on the inner sides of the flanges to strengthen the hold of the bolts passing through them, and also to govern the width of the slot proportioned to the center-board intended to move therein.

The horizontal flanges on the lower edge of the center-board are designed to hold the water to said board, and thereby to serve to prevent lateral deviation, keeping the vessel in a true course while they offer no obstacle to direct motion.

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

The T-shaped center-board C, having the oblique-curved slots I, in combination with the guide-pins K, pivoted arms D, and operating-rod G, substantially as specified.

In testimony that I claim the above I hereunto subscribe my name in the presence of two witnesses.

JAMES CALL.

Witnesses:

JOSEPH CALL,
JOS. M. BLADEN.