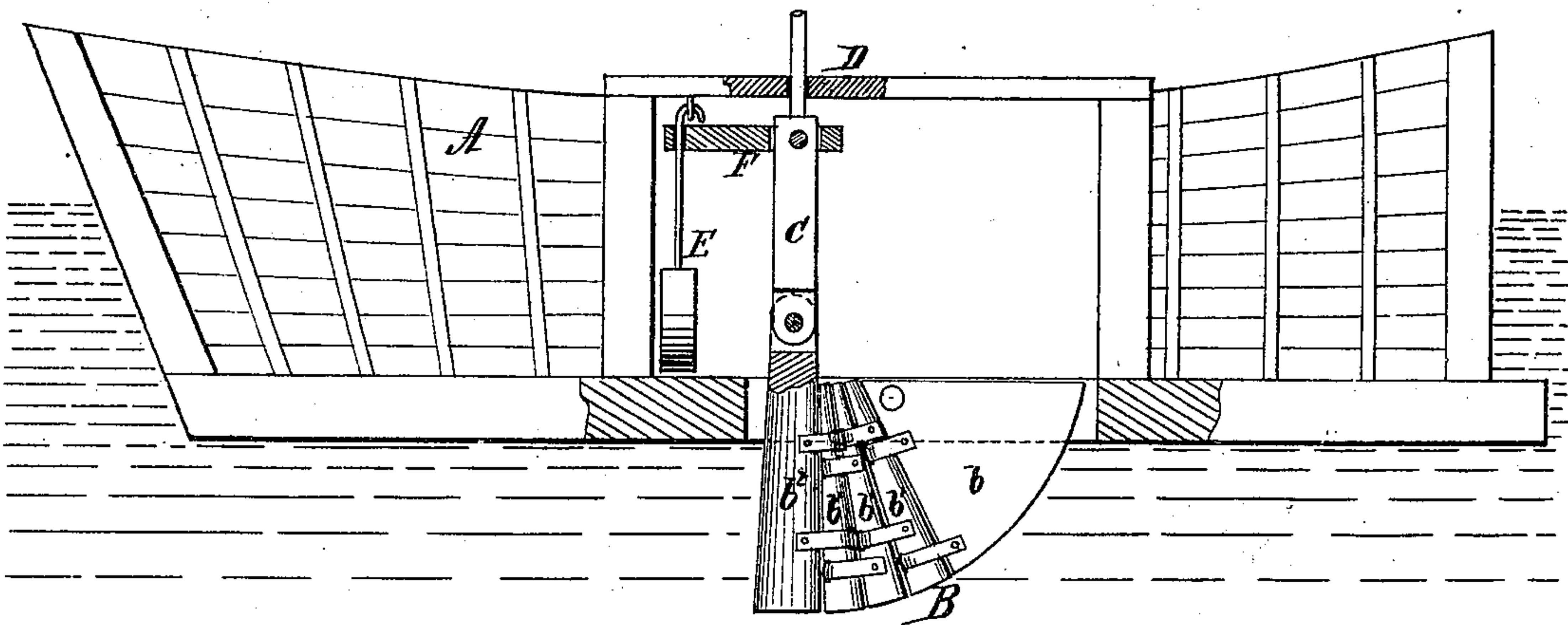


**T. HARTLEY.**  
**Center-Boards for Vessels.**

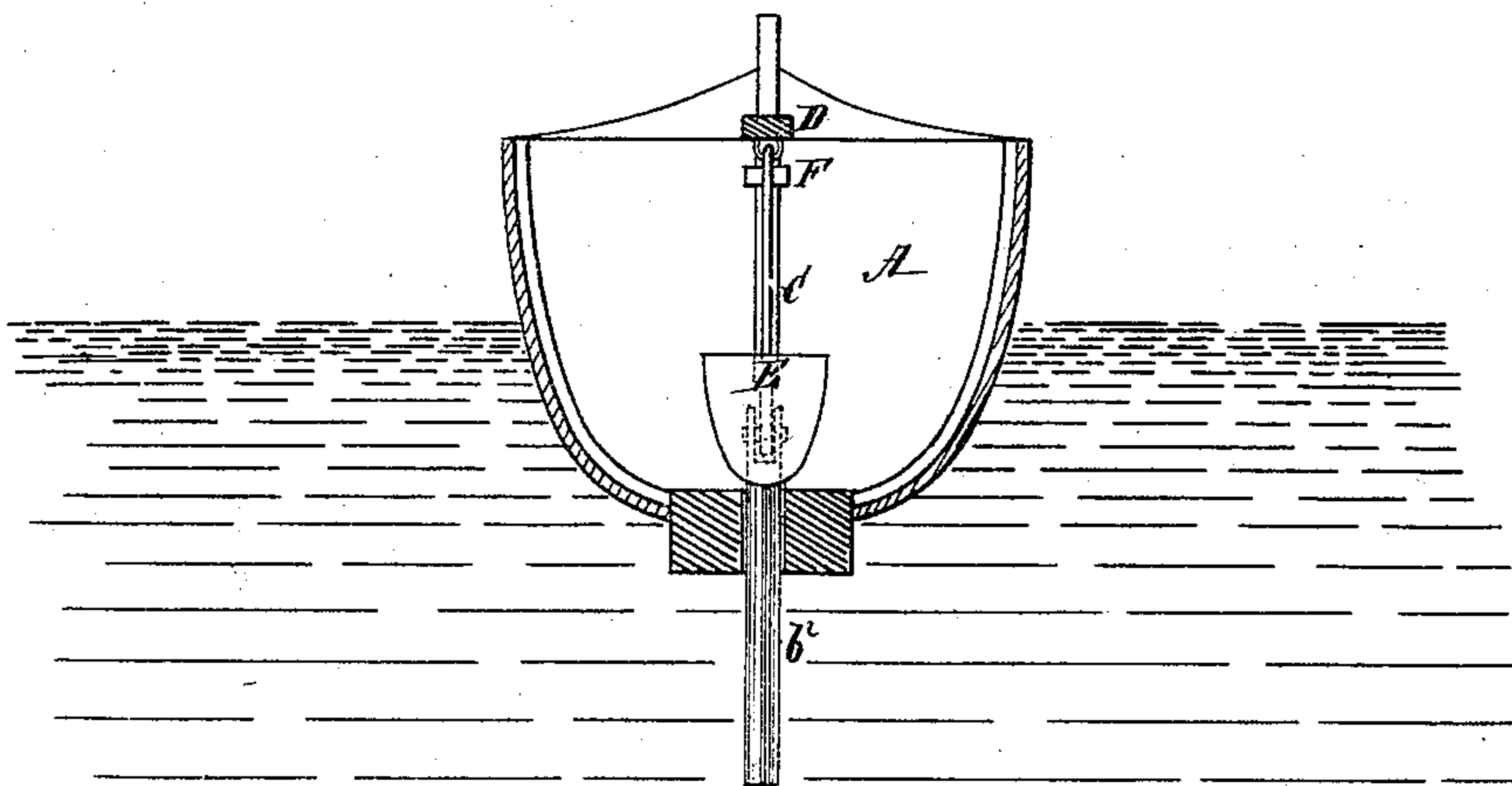
No. 148,454.

Patented March 10, 1874.

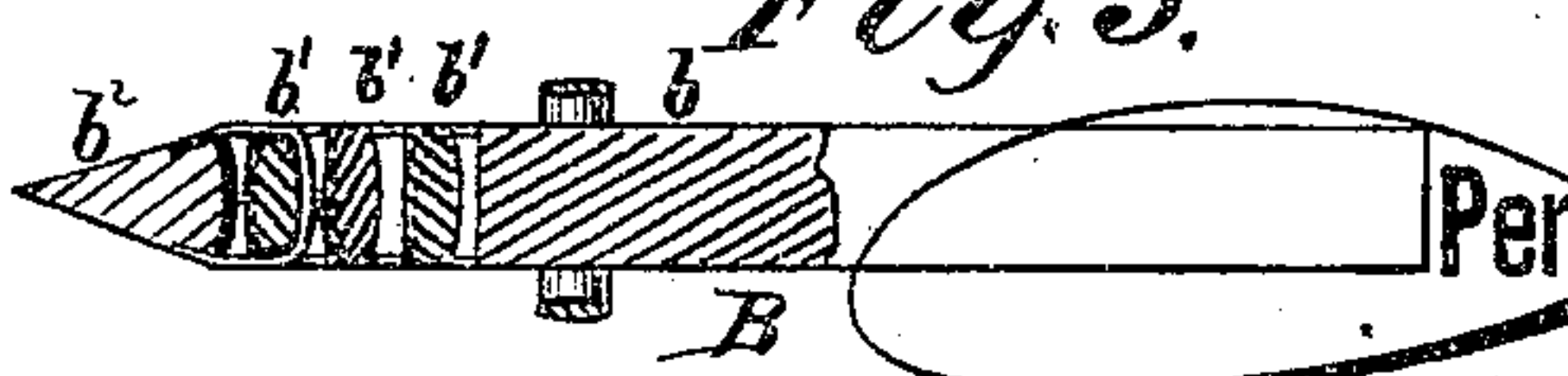
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:

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Per

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# UNITED STATES PATENT OFFICE.

THOMAS HARTLEY, OF GILMAN, ILLINOIS.

## IMPROVEMENT IN CENTER-BOARDS FOR VESSELS.

Specification forming part of Letters Patent No. **148,454**, dated March 10, 1874; application filed February 12, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS HARTLEY, of Gilman, Iroquois county, Illinois, have invented a new and Improved Center-Board for Boats; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawing, forming a part of this specification, in which—

Figure 1 is a longitudinal sectional elevation, Fig. 2 a cross-sectional elevation, and Fig. 3 a horizontal section, of center-board.

The invention relates to vessels which are expected to carry sail in deep or shallow water; and consists in novel means whereby the tendency to capsize is, to a great extent, obviated, as hereinafter described.

A represents the hull of a vessel, provided with a center-board which is adjustable into and from the water, according as the water is deep or shallow, all in the usual way. B is the center-board, which I make by attaching to a solid piece, *b*, the series of pieces *b*<sup>1</sup>, jointed to each other. The foremost one, *b*<sup>2</sup>, is wedge-shaped on its front face, extends up into the boat, and is connected with the squared and pivoted slide-bar C, which passes through the guide D. On the subjacent surface of the latter is hinged the pendent plumb or rod E, weighted at the lower end. This rod is con-

nected by a piece, F, with the slide-bar C, which passes loosely through it.

The operation is as follows: When the vessel is thrown on one side by the wind, the pendulum, plumb, or weighted rod will turn in the same direction, thereby, through the piece F and slide-bar C, turning the pivoted front of center-board round in the opposite direction. The effect of this is to bring the water to bear on the center-board with a heavy pressure, which, in a great measure, counteracts the lateral force of the wind that is tending to turn the vessel on its side.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A center-board for sailing-vessels having its front portion made of pieces *b*<sup>1</sup> *b*<sup>2</sup>, jointed to each other and to the piece *b*, as described, to adapt its front to be varied in direction, at the time and in the manner described.

2. The combination with bar C, attached to the front jointed piece *b*<sup>2</sup>, of the plumb, pendulum, or weighted rod E, hinged at the top, and connected with said bar C by the crown-piece F, as and for the purpose specified.

THOS. HARTLEY.

Witnesses:

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