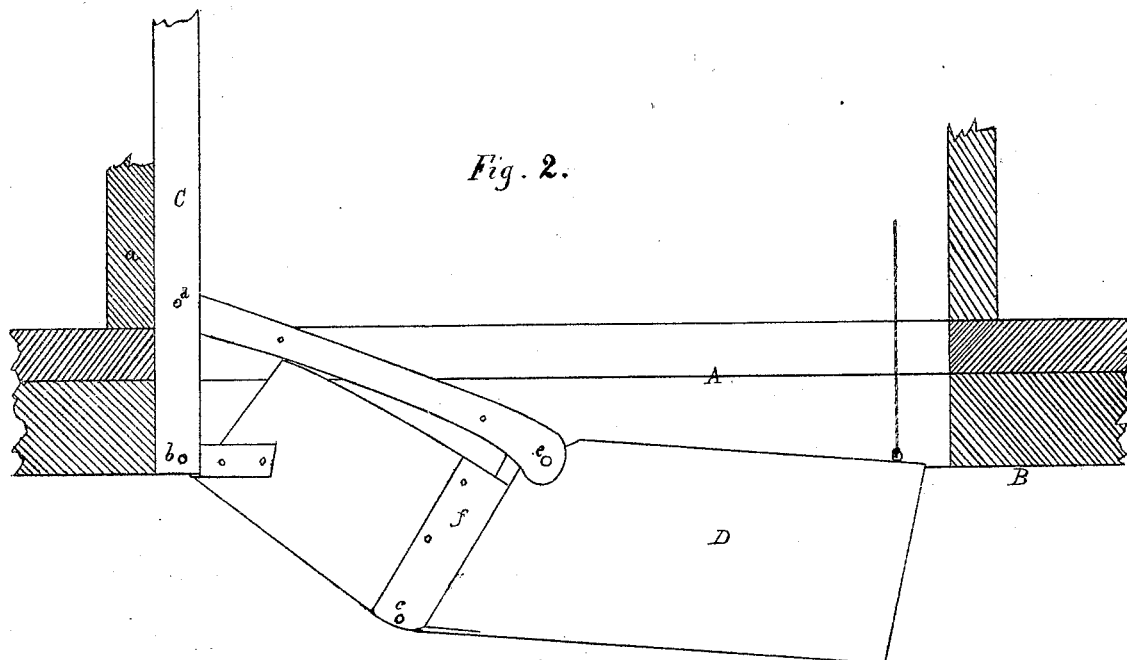
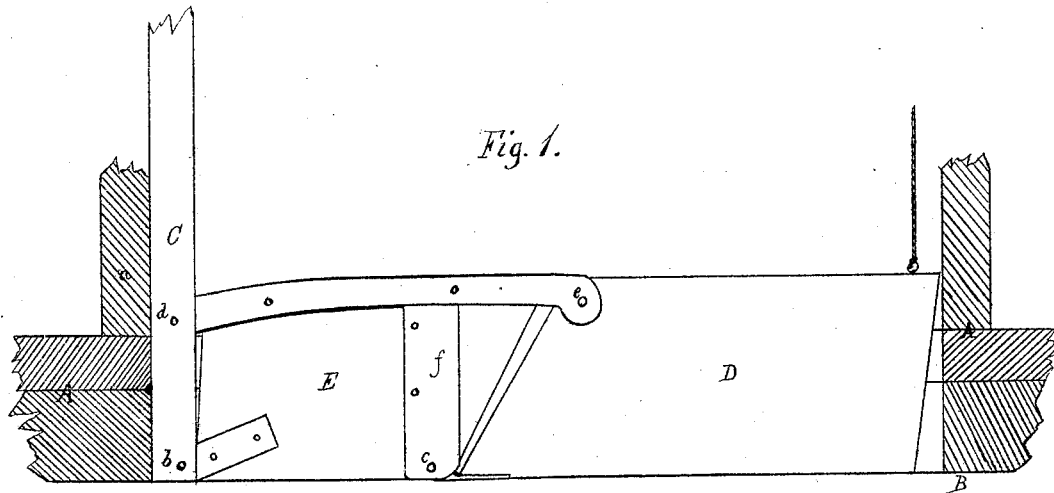


A. G. CROSSMAN.

Improvement in Center-Boards for Vessels.

No. 113,984.

Patented April 25, 1871.



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# United States Patent Office

ALONZO G. CROSSMAN, OF HUNTINGTON, NEW YORK, ASSIGNOR TO  
FRANKLIN M. CROSSMAN, OF SAME PLACE.

Letters Patent No. 113,984, dated April 25, 1871.

## IMPROVEMENT IN CENTER-BOARDS FOR VESSELS.

The Schedule referred to in these Letters Patent and making part of the same.

I, ALONZO G. CROSSMAN, of Huntington, in the county of Suffolk and State of New York, have invented a certain Improvement in Center-Boards for Vessels, of which the following is a specification.

### *Nature and Object of the Invention.*

Swinging center-boards of the ordinary construction, hung upon a pintle or hinge at the forward end, and arranged to be lowered at the after end for use and to be raised at the after end in shoal water, have several advantages over the sliding center-board; but they also have the disadvantage of the after end of the board receiving the greater pressure, and not being supported by the trunk it is sprung over to the windward further than the forward end, thus forming in itself, to some extent, a rudder, inclining the vessel to make leeway more than it would if the center-board was exactly parallel with the line of the keel.

It also has the disadvantage of failing to utilize a very considerable portion of the width of the center-board at the forward end, as the extreme forward end is not lowered at all into the water.

The object of my present invention is to obviate these difficulties, and to furnish an efficient and serviceable center-board, which shall be easily managed and entirely efficient in its operation.

To accomplish this purpose I hang the forward end of the center-board to a standard or to the forward end of the trunk by means of joints or pintles, as hereinafter more fully set forth.

### *Description of the Accompanying Drawing.*

Figure 1 is a side elevation of my improved center-board, showing it in position in the trunk of a vessel and raised up flush with the keel or bottom of the boat in the position it occupies when not in use.

Figure 2 is a similar elevation, showing a center-board lowered into position for use.

### *General Description.*

A represents the trunk of a vessel for receiving the center-board.

B is the line of the bottom of the keel.

C is the standard to which the center-board is attached, or it may be attached to the upright piece *a*, which forms a part of the trunk.

D is the main portion of the center-board, and

E is an intermediate portion which occupies space between the part D and the standard C.

This intermediate portion E of the center-board is connected at the lower forward corner to the standard C, or to the part *a* of the trunk, by a hinge or

pintle, *b*, and the rear lower corner by a similar hinge or pintle, *c*, to the lower forward corner of the main portion D of the center-board.

The upper forward corner of the part D is connected to the standard C by a double hinge, F, having pintles at *d* and *e*, as shown.

The pintles *d* and *e* are placed considerably further apart than the pintles *b* and *c*, so that as the center-board is lowered the pintle *c* shall move in a smaller arc than the pintle *e*, thus drawing the lower forward corner of the part D a greater distance forward than the upper forward corner of the same piece is drawn, and consequently dropping the rear end of the piece D a little lower than the forward end when the center-board is let down into position for use.

The object of this arrangement is to cause the rear end of the part D to strike the ground in shoal water a little before the forward end; or, in other words, to make the lower edge of the main portion of the center-board a slightly-inclined plane, which shall cause its striking the ground to raise it more readily, while, when the center-board is raised completely up to its highest position, it shall be even with the keel in its whole length.

The pintles *b* and *c* may, however, be the same distance apart as the pintles *d* and *e*, if for any purpose this shall be found desirable.

*ff* are pieces of metal bolted upon the sides of the part E at the rear end, so as to form a recess for the forward end of the part D to fit into and aid in supporting it against the side pressure to which it is to be subjected.

If preferred, the part E may be dispensed with, and the pintles *b* and *c* connected by a double-strap hinge.

In that case the part D should be extended forward nearly to the standard C between the straps of this lower double hinge, and the lower forward corner of the part D should then be rounded or beveled to prevent its being damaged by an obstruction.

The standard C may be fastened either temporarily or permanently to the piece *a* in any convenient manner so as to support the center-board; or, as above intimated, the forward pintles may be attached directly to the standard C, but this last-mentioned arrangement will rarely be preferable, as it is often desirable to be able to unship the center-board, which could not well be done if it were permanently attached to the standard C.

G is a line attached to the center-board, and extended to the deck, to draw up the center-board when desired.

*Claims.*

I claim as my invention—

1. The combination of the center-board D, the standard C or its equivalent, and the pintles *b* and *c* and *d* and *e* connected together, substantially as hereinbefore set forth.

2. The combination of the part D, the part E, the standard C or its equivalent, and the pintles *b*, *c*, *d*, and *e*, connected together, substantially as hereinbefore set forth.

3. The combination of the standard C or its equivalent, the parts D and E of the center-board, and the pintles *b* and *c*, substantially as hereinbefore set forth.

ALONZO G. CROSSMAN.

Witnesses:

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L. W. HOW.