J. W. CAMPBELL.

Center-Boards for Vessels.

No. 151,273. Patented May 26, 1874.

Fig: 1.

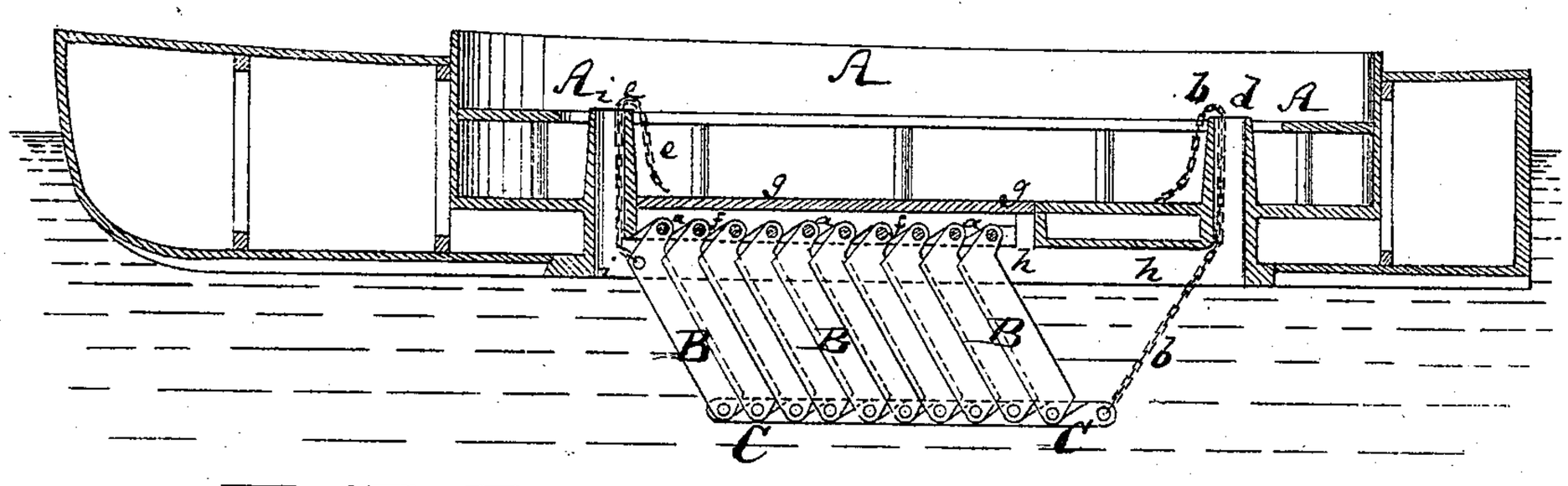
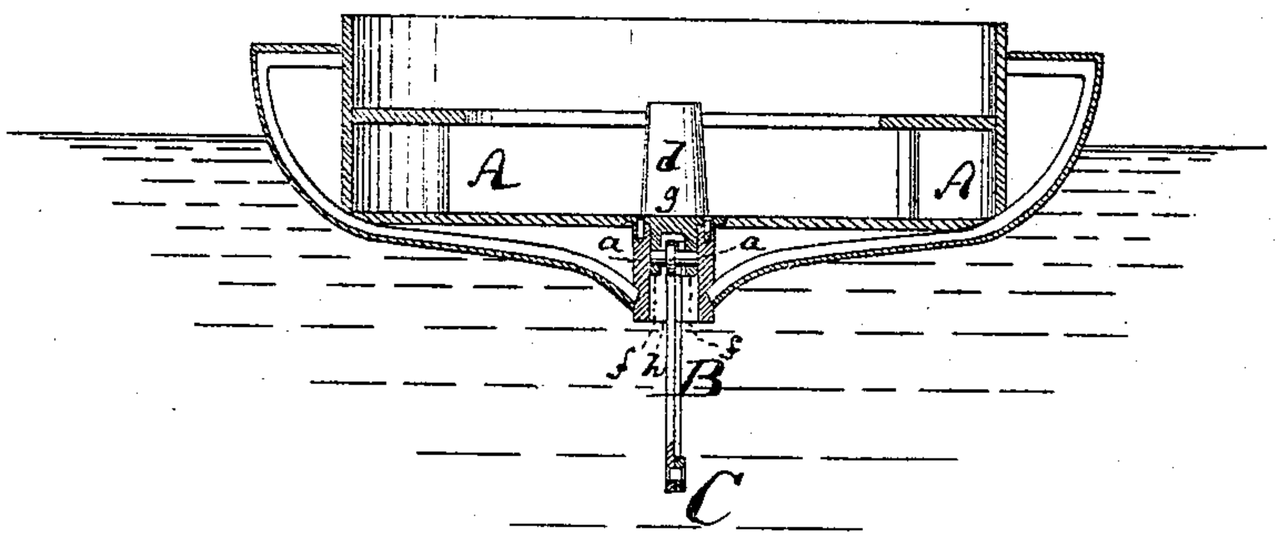


Fig: 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES W. CAMPBELL, OF NEW YORK, N. Y.

IMPROVEMENT IN CENTER-BOARDS FOR VESSELS.

Specification forming part of Letters Patent No. **151,273**, dated May 26, 1874; application filed April 14, 1874.

To all whom it may concern:

Be it known that I, JAMES W. CAMPBELL, of New York, in the county of New York and State of New York, have invented a new and Improved Center-Board for Vessels, of which the following is a specification:

Figure 1 is a vertical longitudinal section of a vessel having my improved center-board, and Fig. 2 a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts in both figures.

The object of this invention is to improve the construction of jointed or sectional center-boards for vessels. The invention consists in constructing the center-board of a series of sections, which are all separately pivoted at their upper ends in the bottom of the ship, while their lower ends are pivoted to a bar that is connected with proper chains extending into the ship, so that by such chains the center-board may be let down or raised, more or less. When folded upward the sections all assume a horizontal or nearly horizontal position, side by side with each other, and thereby leave the depth of the folded center-board only equal to the width of one of the sections, whereas heretofore, when the center-board was raised, the whole body of it had to be hoisted into the ship, and necessitated, therefore, the use of a cumbersome and inconvenient trunk.

In the accompanying drawing, the letter A represents the body of a vessel. B B are a series of narrow plates, whose upper ends are, by bolts or pins *a*, connected and pivoted into the body of the vessel, the said bolts or pins being applied in a recess which is cut into the keel or otherwise formed in the middle of the ship's bottom. The lower ends of these sections B are pivoted to a bar, C, one end of which connects with a chain, *b*, that passes up into the body of the vessel through a suitable tube, *d*. By means of this chain the bar C may be raised or let down at will, and the center-board, therefore, extended and let down, or contracted and raised, more or less. Another chain, *e*, connects with one of the sections B direct, as shown, and is used to draw the center-board into the extended position by absolute force, to insure the proper extension in case the resistance of the water should be so strong as to prevent the spontaneous extension of the jointed center-board. The chain *e* extends into the ship through a tube, *i*, as shown. The upper bolts of the sections B B are, by preference, supported in movable rails *f f*, that can be let into the bottom of the vessel from above, or that can, if desired, be removed from above, by removing a plank, *g*, from the bottom, giving access to the entire center-board from above for repair or inspection. The several sections B B are so arranged that they are side by side, as in Fig. 1, and that at the same time the edge of one always overlaps that of the other—that is to say, they are side by side lengthwise, and also side by side crosswise, so that when the chain *b* is pulled, and the bar C carried up against the bottom of the ship into a recess, *h*, there provided, the several sections will assume a horizontal position, and there all lie side by side. Thus the space necessary for accommodating the center-board, when the same is not to be suspended, is greatly reduced as compared with the ordinary construction, while the center-board, nevertheless, gives the same degree of efficiency. The recess *h*, which is formed in the bottom of the ship for the reception of the sectional center-board, is shorter where the sections are pivoted to the rails *f* than where the bar C is to fold into, this being a peculiar construction following my invention of center-board. It is evident that instead of the bar C, an equivalent chain-connection may be used.

I do not, broadly, claim a sectional center-board; but

I do claim as my invention—

1. A sectional center-board whose sections B B are at their upper ends separately pivoted in the body of the ship, and at the lower end connected together with the horizontal bar C, for operation as described.

2. In a ship having a sectional center-board, B, the recess *h*, provided in the bottom thereof, and made longer at the lower part than at the upper part, as and for the purpose described.

3. The combination of the rails *f f* with the sections B B of a center-board, said sections being separately pivoted in said rails, substantially as set forth.

JAMES W. CAMPBELL.

Witnesses:

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