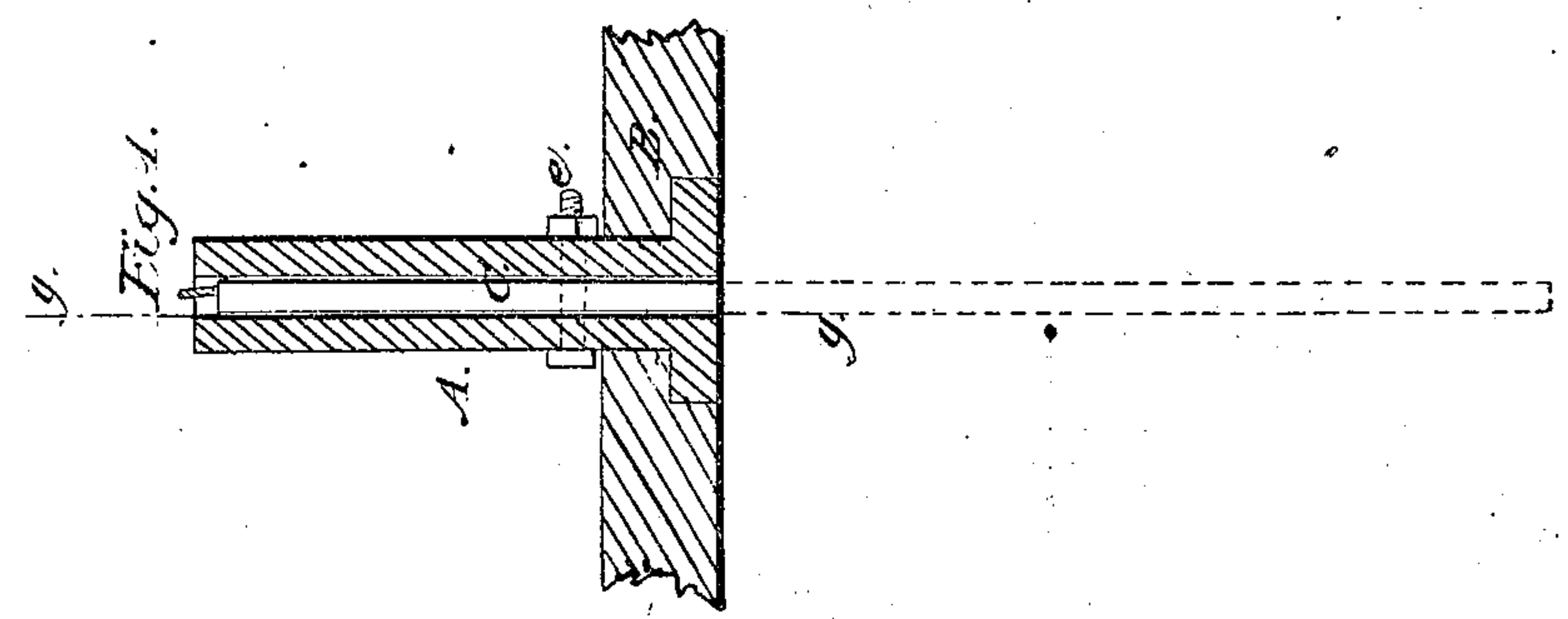
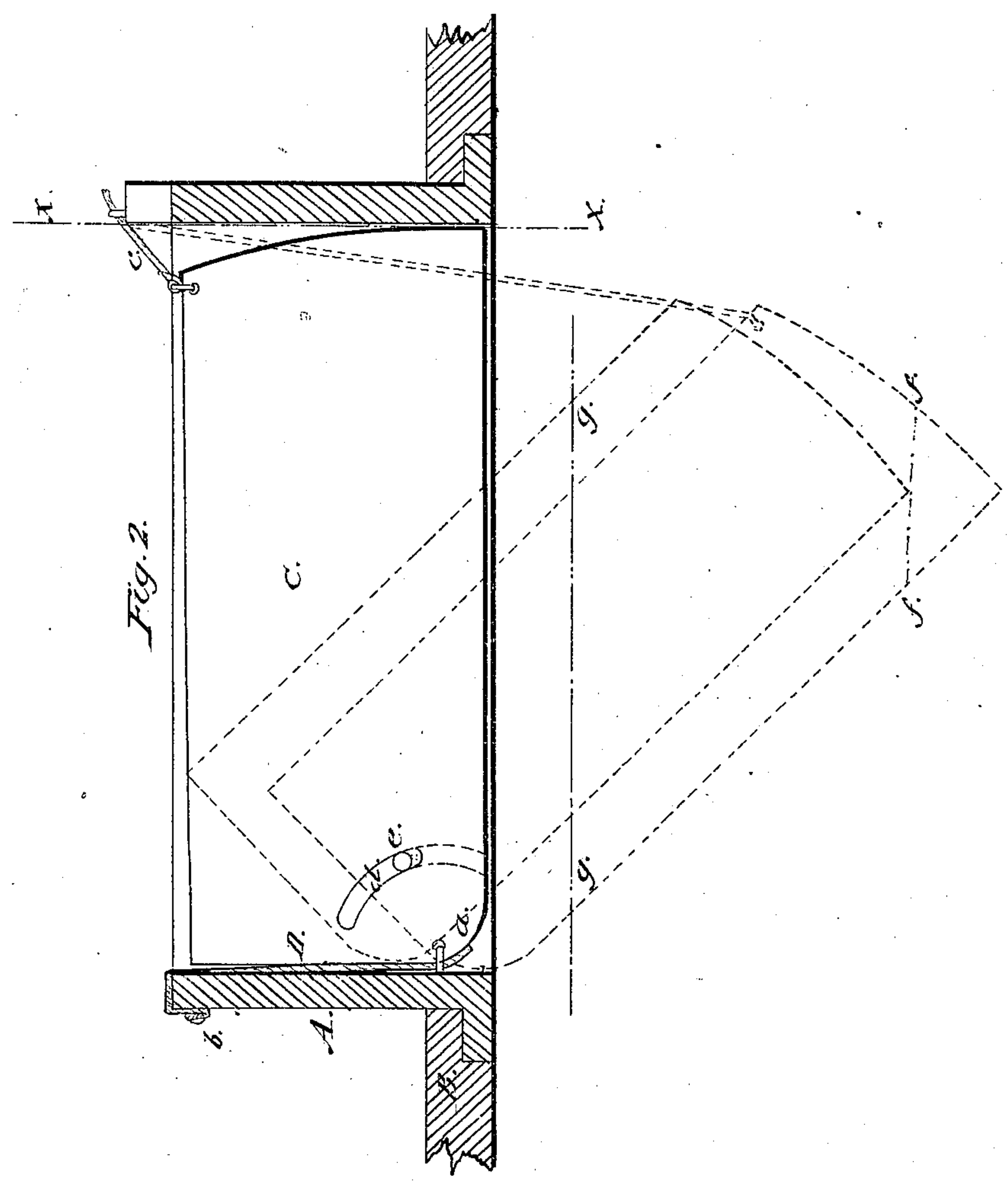


B. Soline,
Center Board.

No. 19996.

Patented. Apr. 20. 1858.



UNITED STATES PATENT OFFICE.

B. JOLINE, OF WESTFIELD, NEW YORK.

CENTERBOARD OF NAVIGABLE VESSELS.

Specification of Letters Patent No. 19,996, dated April 20, 1858.

To all whom it may concern:

Be it known that I, BENJAMIN JOLINE, of Westfield, in the county of Richmond and State of New York, have invented a new and useful Improvement in Centerboards for Navigable Vessels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a transverse section of the trunk of a center board, the center board being fitted or suspended within the trunk and showing my improvement. *x, x*, Fig. 2, shows the plane of section. Fig. 2, is a side sectional view of ditto, with the center board fitted within it, *y, y*, Fig. 1, indicating the plane of section.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in a novel way of hanging or suspending the center board within its trunk, whereby a greater area of the board, when lowered, may be presented or exposed to the water than by the usual way of pivoting or suspending them on center bolts.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a trunk constructed precisely similar to the kind usually employed for center boards. This trunk is attached to the keelson B, of the vessel in the usual way. The above parts therefore do not require a minute description.

C, is a center board which is constructed in the usual way, but is suspended or fitted in the trunk A, in the following novel way. To the front end of the center board and to its lower part a chain or rope D, is attached as shown at *a*, Fig. 2, said chain or rope being secured to the upper part of the trunk at any proper point shown at *b*. This chain or rope which may be termed a bridle, sustains the front end of the center board, and its lower end or point of attachment *a*, is the center on which it moves. To the back end of the center board a rope or chain *e*, is attached. The center board is raised and lowered by means of this rope or chain and is secured by it at any desired point.

Through the center-board C, and at any proper distance from the point *a*, as a cen-

ter a segment slot *d*, is made, shown clearly in Fig. 2, and through this slot a bolt *e*, passes, said bolt passing through the sides of the trunk as shown in Fig. 1. The bolt *e*, and slot *d*, serve as a guide to the center-board preventing the same from moving longitudinally forward as it is raised and lowered or in case of its striking against any obstruction, a contingency which would otherwise occur as the bridle D, cannot prevent this longitudinal play or movement and great difficulty would frequently occur in drawing up the center-board in consequence of its back end catching against the keel at the back end of the trunk. The center-board also in case of striking against any obstruction and being prevented from rising or yielding sufficiently would be liable to be injured and rendered useless. By means of the bolt passing through the slot this difficulty is avoided.

The ordinary center-boards are suspended by a bolt about in the position as the bolt *e*, the board working on said bolt as a center. This bolt cannot be placed near the corner of the center board as the front is too low and it cannot be passed through the trunk without passing through the sides of the vessel or keelson. This would be altogether impracticable. This bolt therefore must pass through the trunk at a point higher up and cannot be put lower than the bolt *e*. This is a great disadvantage for a large area of the board is lost, as will be fully understood by referring to Fig. 2 in which the red lines show the ordinary center board lowered one quarter of a circle, 45°, and my improvement lowered to the same angle, both center boards having the same area, and the proportions of both being the same. The difference it will at once be seen is due to the position of the bolt represented by *e*, for the ordinary center-board, said position causing a portion of the center board the part in front of its bolt to be elevated within the trunk, while another part behind is lowered. It will be seen that the increased area exposed by my improvement is not at the lower part of the center-board, but at the upper part below the keel, so that the lower end of the center board may be cut off in cases of shallow water and a small portion thrown away or sacrificed in order to obtain a larger surface. This

will be understood by referring to Fig. 2, in which the dotted line *f*, represents the lower part of the bisected end of the board and the space between the dotted lines *g*, and
5 the keel the part gained thereby.

I am aware that suspending center-boards by chains or ropes has been previously done, but so far as I am aware such center boards have been raised and lowered bodily thereby,
10 and have only been applied to small or moderate sized vessels. This arrangement is very objectionable as the center board when raised extends quite high in the vessel monopolizing considerable room.

5 I do not claim broadly suspending a center

board within its trunk by chains or ropes for this has been previously done; but,

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

Suspending the front end of the center 20 board *C*, within its trunk *A*, by means of the bridle *D*, in combination with the bolt *e*, and slot *d*, or their equivalents to serve as a guide, the parts being arranged to operate substantially as and for the purpose set 25 forth.

BENJAMIN JOLINE.

Witnesses:

W. TUSCH,

W. HAUFF.