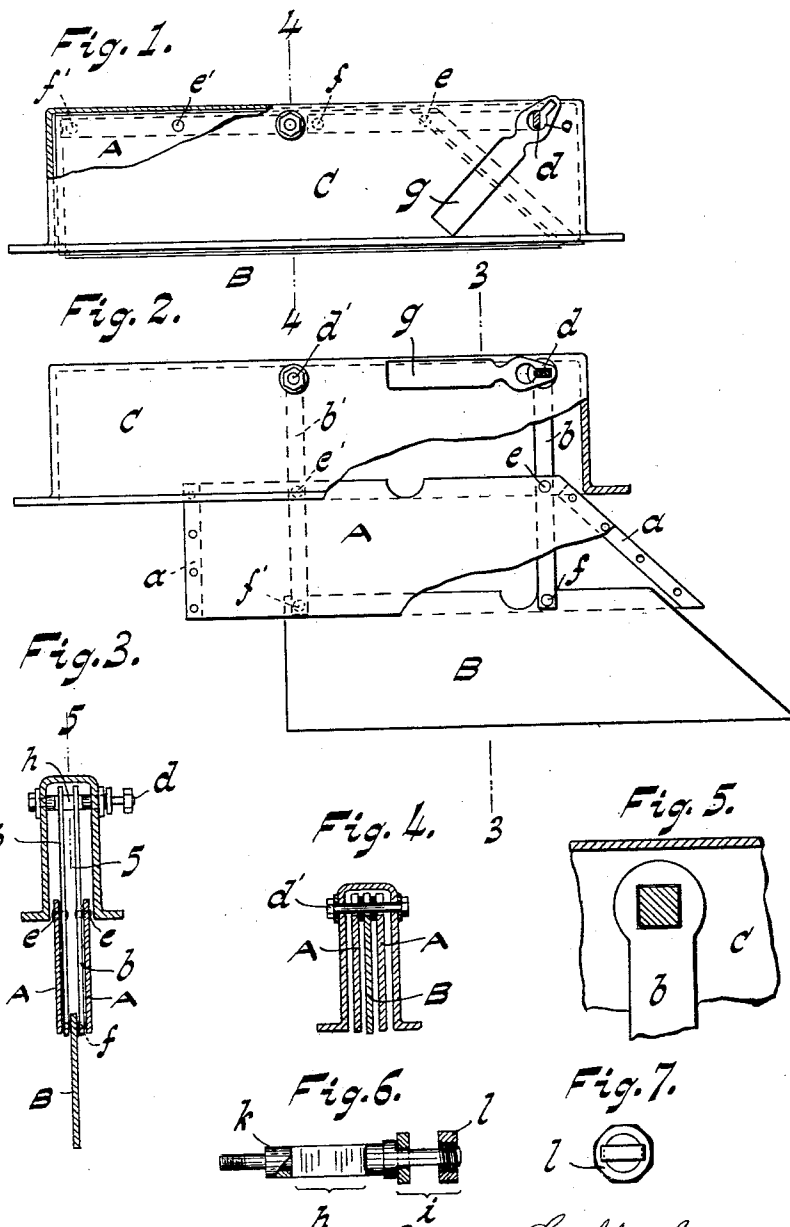


(No Model.)

E. S. HICKS.
FOLDING CENTERBOARD FOR VESSELS.

No. 580,158.

Patented Apr. 6, 1897.



Witnesses

A. W. Kury
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UNITED STATES PATENT OFFICE.

EDGAR S. HICKS, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO
DAVID H. VALENTINE, OF SAME PLACE.

FOLDING CENTERBOARD FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 580,158, dated April 6, 1897.

Application filed December 11, 1896. Serial No. 615,346. (No model.)

To all whom it may concern:

Be it known that I, EDGAR S. HICKS, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Folding Centerboards for Vessels, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation, partly in section, of my improved folding centerboard retracted in the box. Fig. 2 is an elevation, partly in section, of my improved folding centerboard extended. Fig. 3 is a cross-section on the line 3 3, indicated in Fig. 2. Fig. 4 is a cross-section on the line 4 4, indicated in Fig. 1. Figs. 5, 6, and 7 are enlarged details, Fig. 5 of the head of the brace, Fig. 6 an elevation, and Fig. 7 a front elevation of the turn-bolt.

My invention relates to ship building; and it consists of the hereinafter-described construction of a folding centerboard for skiffs and similar vessels.

Shallow sailing vessels must be provided with centerboards to increase their stability. Such centerboard is usually suspended in a box set up in the center of the board and is provided with tackle for lifting and lowering it, as required in the course of sailing. If in building of such ships the area of centerboards could be considered regardless of other requirements, the centerboard would always be made very large, or at least as large as would be required in proportion to the other dimensions of the craft. This, however, is in practice utterly impossible. In determining the size of the centerboard due consideration must be taken for the other arrangements in the hold of the ship, and for this reason the dimensions of the centerboard are always the result of a compromise between the calculated area and the requirements of other arrangements in the hold of the vessel. Especially in shallow sailing boats the dimensions of the centerboard-box must necessarily be reduced to a minimum. A small centerboard is, however, detrimental to the stability and consequently to the sailing ability of a boat, and for this reason centerboards composed of two or more sections are employed in the construction of such vessels.

The object of my invention is to provide a centerboard composed of parallel folding sections so connected together that they will resist pressure from both sides equally, and thus when dropped out from the box will produce rigid and reliable support for the stability of a vessel as any centerboard produced of one piece. At the same time my improved folding centerboard is devised to fold into a comparatively very small box, reducing the required space in the hold of the vessel to a minimum.

My improved folding centerboard consists of two sections A and B, the upper section A serving as a case for the lower. This lower section B is a single board. The upper is composed of two boards secured together on strips *a*. The top and bottom of the section A are open. Both sections are connected together and with the box C by braces *b* and *b'*, suspended on bolts *d* and *d'*. Each of these braces consists of two links *b* and *b'* and *b'*, respectively, separately pivoted by bolts *e* and *e'* to each of the two side boards of the upper section A and both jointly by bolts *f* and *f'* to the lower section B. In this manner the two braces and sections of the centerboard are joined into a frame foldable in its plane but rigid against side pressure, as will be understood from the sectional view in Fig. 3. It was said that the braces *b* and *b'* connect the sections A and B with each other and also the whole centerboard with the case, so that the whole will for all practical purposes represent itself in the same manner as a centerboard made of one piece and of a size equal to the aggregate area of both sections and of the box.

In operating the centerboard the braces *b* and *b'* act as levers or lifters for both sections. They are operated by the bolt *d* (shown in elevation in Fig. 6) and handle *g*. The part *h* of the body of the bolt and the part *i* of its head are squared. The holes in the braces *b* are correspondingly square, part *h* of the body of the bolt fitting tightly into them. Bolt *d* is pillowed in suitable bearings in the centerboard-case. The parts of the body of the bolt moving in the boring are round. Washer *k* is slid on the thread end of the bolt, which is necessarily reduced in

its dimension, because otherwise it would be not possible to pass the bolt through the square holes of the braces *b*. Handle *g*, for turning the bolt *d*, is applied to the head of the bolt and is preferably secured thereto by nut *l*. The handle is provided with a slot *u*, shaped in accordance with the head of the bolt *d*, and with a circular recess *o*, which is large enough to allow the handle to turn around the squared part of the bolt's head, so that whenever the handle is not in use it may be dropped out of the way.

The centerboard may also be operated in any well known manner, as by tackle and otherwise, and no locking of the sections in the box is necessary, the parts being so balanced that the centerboard will sustain itself in folded position.

My improved folding centerboard is devised principally for use on skiffs. Its construction will, owing to its rigidity and simplicity, be found very suitable also for all shallow sailing vessels, because in proportion to the small space occupied with the box in the hold of the vessel a very large and rigid centerboard, capable to resist the pressure equally from both sides, is provided.

I claim as my invention and desire to secure by Letters Patent—

1. A folding centerboard consisting of a hollow and of a solid section, the solid section being adapted to recede into the hollow and both to recede into the box provided in the hold of a vessel, bolts pillowed in the sides of the box, double braces rigidly connected to the bolts and pivotally connected to the sections of the centerboard, separately

to the hollow section and jointly to the solid section, thus connecting the two sections with each other and both with the box, and forming together with the sections a frame foldable in plane; and of means for operating the centerboard.

2. In a folding centerboard the combination with a hollow section, suspended on double braces rigidly secured on bolts pillowed in the sides of the centerboard-box and adapted to be operated by a handle, fitted on the projecting head of one of the bolts, of a solid section pivotally connected to the ends of the double braces and adapted to be operated thereby conjointly with the hollow section.

3. In a folding centerboard the combination with a hollow and of a solid section, the solid section being adapted to recede into the hollow and both to recede into the box provided in the hold of the vessel, of double braces rigidly secured on bolts pillowed in the sides of the centerboard-box and adapted to be operated by a handle, fitted on the projecting head of one of the bolts, and pivotally connected to the section of the centerboard, separately to the hollow section and jointly to the solid section, thus connecting the two sections with each other and both with the box.

In witness that I claim the improvements described in the foregoing specification I have signed my name in the presence of two subscribing witnesses.

EDGAR S. HICKS.

Witnesses:

ROBERT VAN IDERSTINE,
ROBERT VALENTINE MATHEWS.