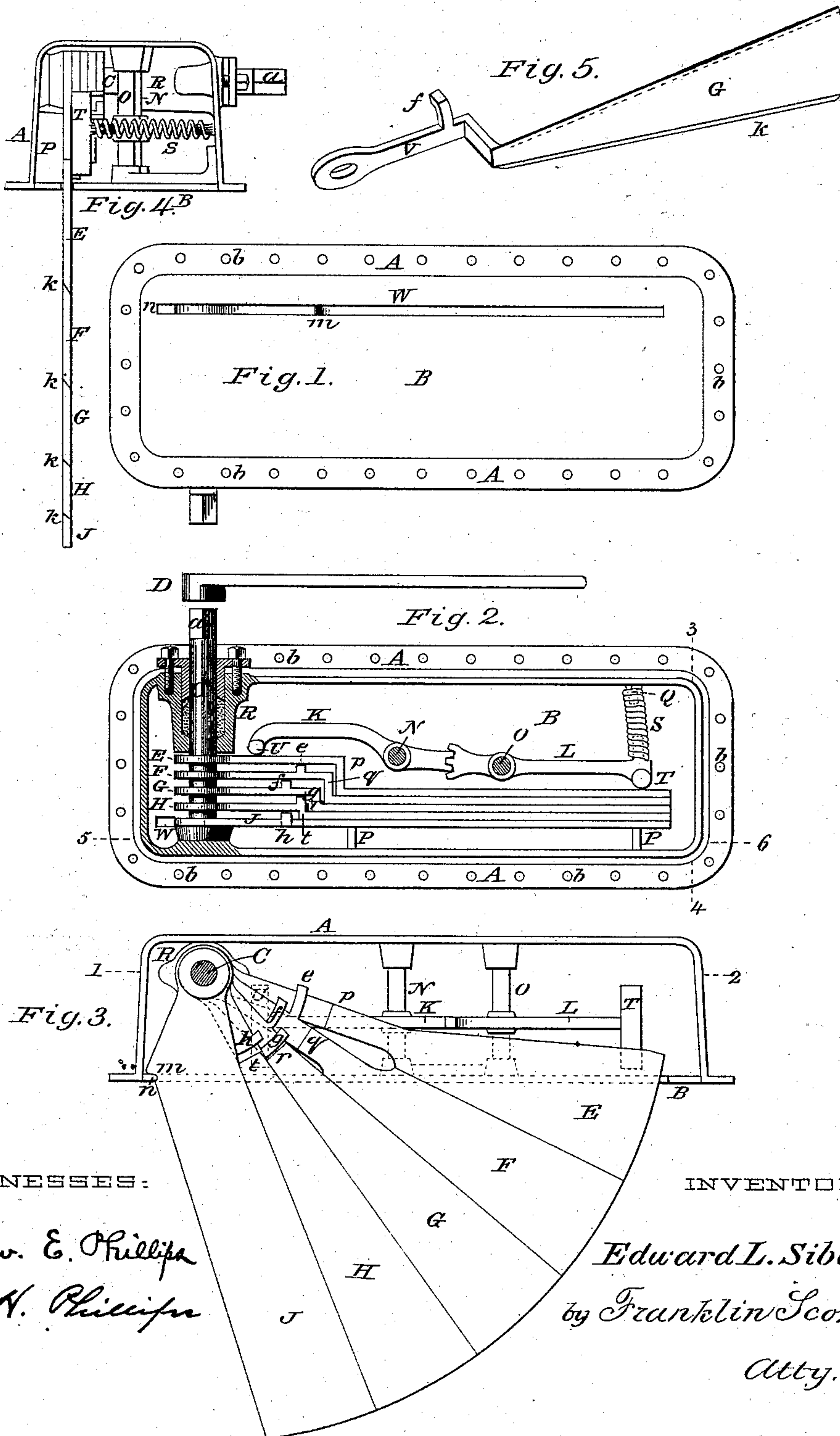


(No Model.)

E. L. SIBLEY.
CENTER BOARD FOR BOATS.

No. 282,386.

Patented July 31, 1883.



WITNESSES:

Edw. E. Phillips
W. H. Phillips

INVENTOR:

Edward L. Sibley,
by Franklin Scott,
Atty.

UNITED STATES PATENT OFFICE.

EDWARD L. SIBLEY, OF BENNINGTON, VERMONT.

CENTER-BOARD FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 282,386, dated July 31, 1883.

Application filed May 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. SIBLEY, of Bennington, in the county of Bennington and State of Vermont, have invented certain Improvements in Center-Boards for Boats, of which the following description, in connection with the accompanying single sheet of drawings, constitutes a specification.

This invention relates to improvements in the construction and means of operation of center-boards for canoes, boats, and sailing-vessels, and especially to that class in which the center-board is constructed in sections, so as to be drawn up in small compass in a shallow receptacle provided therefor.

The construction and mode of operation of my invention are apparent in the drawings, wherein—

Figure 1 exhibits the bottom aspect of the case in which the sectoral wings of the center-board are received when drawn up. Fig. 2 shows in plan, as seen from above, the arrangement and combination of the several parts of my invention as inclosed within the case. Fig. 3 exhibits, in vertical longitudinal section taken on line 5 6 of Fig. 2, my improved center-board as lowered for use. Fig. 4 is a vertical transverse section of my apparatus, taken on line 3 4 of Fig. 2. Fig. 5 is a perspective view of a detached section of the center-board, which I term a "sectoral wing."

Center-boards have heretofore been made in sections or wings, so as to be drawn up into the "well" or case, which in such cases may be much diminished in vertical dimensions; but in such cases heretofore the several sections, when in use, have usually been arranged so as to overlap onto each other, and when so constructed the artificial keel so formed does not present smooth opposite sides to the water, nor do the several sections composing a center-board so made lie in the same plane; and, as a consequence, when in use a tendency exists for the boat to sheer off or diverge from a true course and head around in the direction of the point of greatest resistance. In other cases the several sections have been constructed so that the lower ones could be drawn up and be inclosed within the sections above them. By this system or arrangement a centrolinear disposition of the sections could be maintained; but great resistance to the water would be of-

fered by reason of the increased dimensions of the receiving-sections. My invention overcomes both of these serious objections, and at the same time presents important advantages.

I have shown my apparatus as constructed and confined within a metallic case, A, which is designed to be secured in the bottom of the boat; but the several operative parts may be otherwise mounted to secure lightness, and the whole inclosed in a light water-tight casing, or in any other suitable way.

The essentially novel features of my improvements consist in the employment of a series of sectoral wings pivoted on a common or on separate axes located above a longitudinal slot in the bottom of the trunk or well, which slot is just wide enough to allow the passage of the thickness of a single wing, and providing such sectoral wings with appliances whereby they may be successively moved horizontally up to and then swung down through said slot in such a way as to lie one behind and above another, edge to edge, in close contact, so as to present as resistance to the water in going forward only the thickness of the edge of the forward wing, the whole series, when spread, lying in a vertical plane which is coincident or parallel with the longitudinal center of the boat.

My improvements consist of the several sectoral wings E F G H J, each pivoted on the rock-shaft C. Blade J is securely fastened to said shaft C; but the other wings are free to turn on said shaft under the conditions hereinafter stated. The adjacent edges of said wings are chamfered or beveled, as shown at K K K K, Fig. 4. The shank end of each blade is made with a cranked offset, as seen at p, q, r, and t, Fig. 2. These offsets are to allow the blades proper of the wings to be brought into a common plane, as in Figs. 3 and 4, the shank ends at the same time being disposed side by side on shaft C, as in Fig. 4.

The compound lever K L is adjusted so that the free ends T U may impinge against the back side of wing E, and by means of spring S force the wings toward the guide-stops P P.

Stuffing-box R is provided to prevent the passage of water from the interior of case A into the boat.

Lever D is provided for rotating shaft C in either direction.

The several grappling-lugs e, f, g, and h, pro-

jecting from the shank of wings F, G, H, and J, respectively, are provided for the purpose of engaging with and drawing down into position each successive wing as it is moved into position over slot W by means of spring-levers K and L, preparatory to that purpose. Levers K and L turn on pivot-studs N and O, which are adjusted within case A by any appropriate means for the purposes required. Their shorter arms are articulated by cog-teeth or otherwise, substantially as shown, so as to secure uniform movement to the wings as they are moved up to the slot.

Case A is closed in at the bottom by plate B, which plate affords means for strengthening the case and for attaching various parts of the apparatus.

The apparatus, as shown, may be applied to an ordinary boat by cutting a simple slot through her bottom or keel just wide enough to allow the thin metallic blades of the wings to pass through, and fitting case A by any water-tight fitting to the bottom of the interior of the boat, and securing the same to its seat by screws through *bb*, or in any other suitable way.

My center-board is operated as follows: The several parts being in adjustment, as seen in Fig. 2, shaft C is rotated by lever D, so as to throw ring J down through slot W, until the upper edge of wing J has dropped into line with the lower edge of wing H. At this point spring-levers K and L force wing H horizontally against guide-stops P P, and lug *h* of wing J engages the top edge of shank of wing H, and wing J, having dropped down through slot W sufficiently, is then in position where further rotation of shaft C will result in lug *h* drawing wing H down after it through slot W. The like action ensues with each successive wing until notch *m* in wing J engages back-stop *n* in the bottom plate. Thus it will be seen that each blade of each wing passes diagonally through slot W, as in Fig. 3, and as the thickness of the blade fills the slot W there is no opportunity for slipping by each other or for lateral displacement. When it is desired to elevate the center-board, rotation of shaft C is reversed. As a result all the wings are swung up until blade E strikes the top of case A, or strikes any other stop provided therefor to limit its elevation. When its further upward progress is thus arrested, the further rotation of shaft C will cause the upper beveled edge of wing-blade F to act against the adjacent beveled edge of wing-blade E, and will force it aside toward or against the cross-heads T and U of levers K and L, which recede for that purpose. Thus each successive wing except J is elevated and housed by this lateral movement effected by the conjoint action of the beveled edges K K K K of the several blades upon each other.

It will be seen from the foregoing that the horizontal movement of the several sections of the center-board within the trunk, well, or

case, which takes place in the act of either raising or lowering the center-board, forms a distinctively new feature in this class of center-boards. In the foregoing description I have shown this feature as embodied in radial sections, which spread in fan shape; but inasmuch as sectional center-boards may be constructed in other ways in which this lateral stepping movement can be utilized, I do not desire to restrict this feature of my invention to this or any particular variety of sectional center-boards. Therefore,

I claim—

1. A center-board for boats, made up of a leading and one or more trailing sections, which, when not in use, may be drawn up into and held within a trunk or case, side by side each with the other, and appropriate mechanism in connection therewith, whereby the leading section may be lowered and the respective trailing sections may be successively moved laterally within the trunk or case up into position immediately in rear of the leading or next precedent trailing section, in combination with mechanism whereby the said trailing sections may be successively elevated into the trunk and laterally moved aside therein to admit the ingress of the next succeeding section, substantially in the manner described, and for the purposes set forth.

2. A center-board for sailing-vessels, composed of sectoral sections pivoted on a common or on independent axes, in combination with appropriate mechanism whereby said sections may be laterally moved into position to be thrust down into the water, substantially as described and set forth.

3. A series of sectoral sections for a sectional center-board adapted to be pivoted on an actuating-shaft, having their shank ends constructed with cranked offsets, substantially as shown, to permit the blade ends of the several sections to be brought in use into a common vertical plane, substantially as specified.

4. A series of sectoral sections in a sectional center-board hung on an actuating rock-shaft, having cranked shanks, as shown, and having the edges of the blade ends of said sections beveled or chamfered, to facilitate the lateral set-off movement from their working plane of action into the chamber of the well, trunk, or case, substantially as specified.

5. A center-board for sailing boats and vessels, composed of sections of substantially uniform thickness, adapted to be drawn up and housed side by side within a well or trunk provided therefor, and which, when entirely lowered, lie in the same vertical plane, edge to edge, and when in that position do not overlap each other, substantially as described and set forth.

6. As improvements in the construction of sectional center-boards, a series of sectoral wings pivoted on an actuating rock-shaft, having their shank ends cranked, substantially as shown, and the contiguous edges of adjacent

sections beveled, as shown, in combination with a receiving-case located in the bottom of the boat, containing a longitudinal slot at its bottom for the emergence of the successive wings, and also containing means for imparting to the movable wings a lateral movement toward said slot, substantially as described, and for the purposes set forth.

7. A component section of a sectional center-board for sailing boats and vessels, having an angular offset between the blade end, or part which enters the water, and the opposite end, or part connected with the boat, said offset being so constructed as to permit the sec-

tions or blades to be housed, when not adjusted for use, side by side with each other, substantially in the manner described and set forth, and also to facilitate the alignment of the several blades in a common vertical plane when set for use, substantially as specified.

In testimony whereof I have hereunto subscribed my name, at Bennington, Vermont, this 2d day of May, A. D. 1883.

EDWARD L. SIBLEY.

In presence of—

WELLS R. SMITH,
FRANKLIN SCOTT.