No. 713,830. Patented Nov. 18, 1902.

S. S. YORK.

BOAT.

(Application filed Feb. 4, 1902.)

(No Model.) 2 Sheets—Sheet 1.

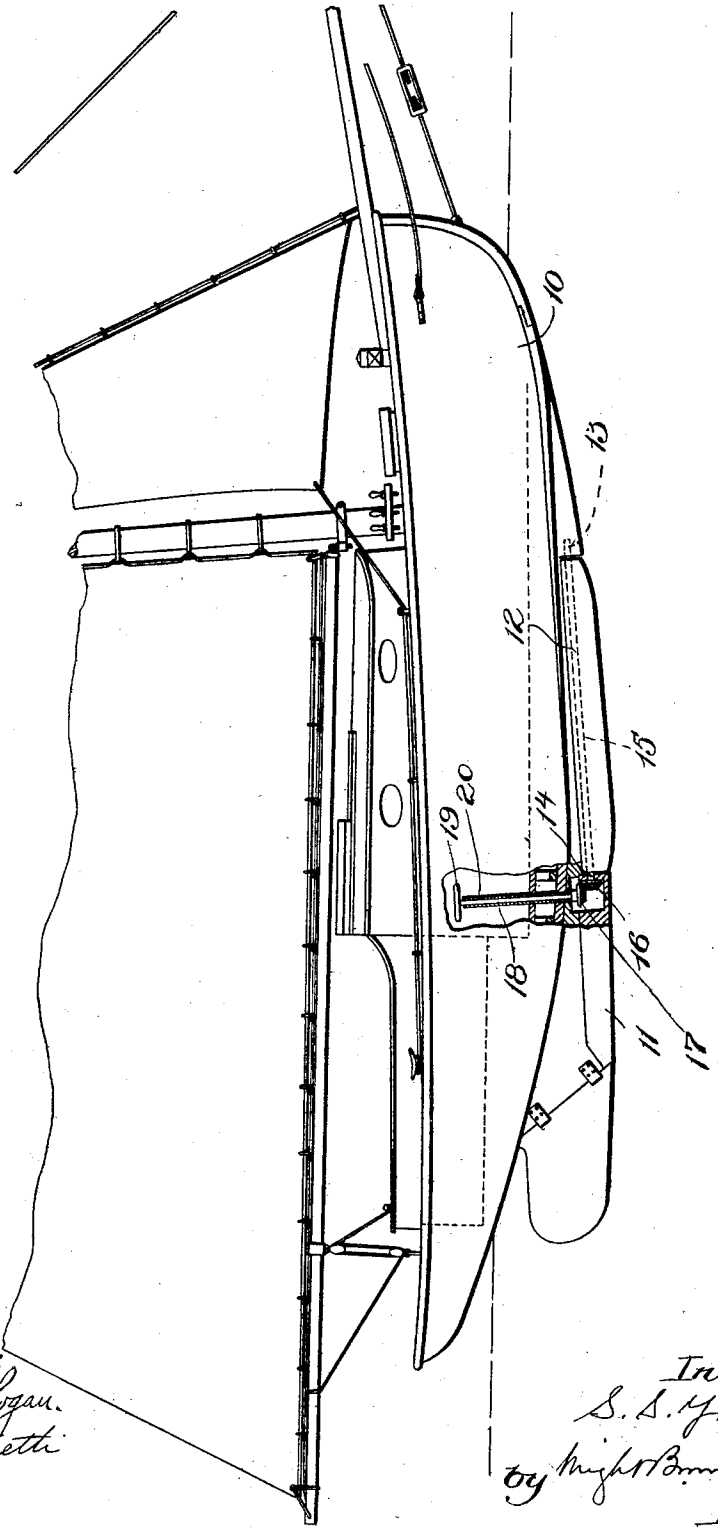


Fig. 1.

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Fig. 2.

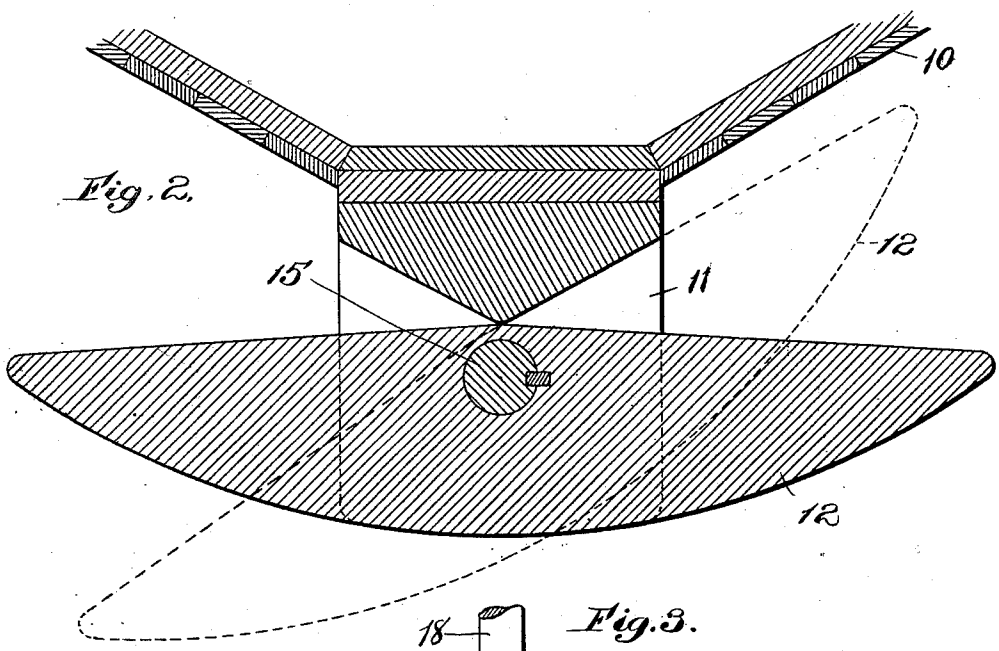


Fig. 3.

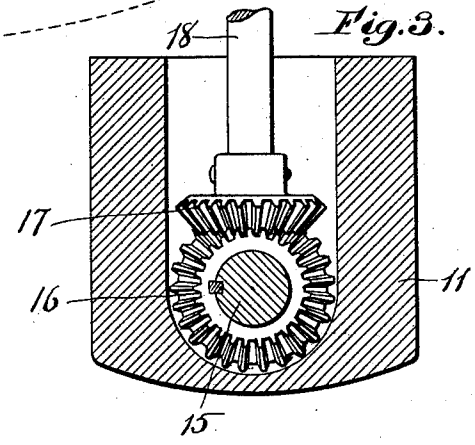


Fig. 4.

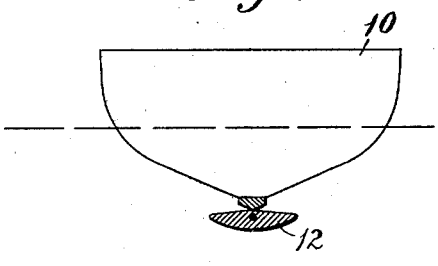
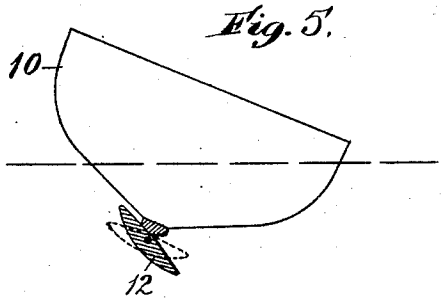


Fig. 5.



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UNITED STATES PATENT OFFICE.

SYLVESTER S. YORK, OF PORTLAND, MAINE, ASSIGNOR OF ONE-HALF TO CHARLES W. YORK, OF EAST BOSTON, MASSACHUSETTS.

BOAT.

SPECIFICATION forming part of Letters Patent No. 713,830, dated November 18, 1902.

Application filed February 4, 1902. Serial No. 92,496. (No model.)

To all whom it may concern:

Be it known that I, SYLVESTER S. YORK, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Boats, of which the following is a specification.

This invention relates to sailing vessels having movable keel-boards adapted to present a greater or less lateral resistance to the water; and the object of the invention is to do away with many of the disadvantages of the ordinary centerboard—such, for instance, as the box or casing required for the centerboard in the interior of the vessel.

The invention consists in certain novel features of construction and arrangement, which I shall now proceed to describe and claim.

Of the accompanying drawings, Figure 1 represents a side elevation of the lower part of a sailing vessel provided with my improvements, parts being shown in section. Fig. 2 represents an enlarged transverse section of the board and its mountings. Fig. 3 represents a transverse section showing the gearing for moving the board. Figs. 4 and 5 represent sectional views showing the action of the board in different positions of the boat.

The same reference characters indicate the same parts in all the figures.

In the drawings, 10 is the boat-hull, from the main keel 11 of which is cut a recess to receive the keel-board 12, which is provided with trunnions 13 14, pivoted in suitable bearings in said keel. The board, as shown, is keyed to a shaft 15, the ends of which constitute the trunnions of the board, one end of said shaft having a bevel-gear 16 meshing with a bevel-gear 17, attached to the lower end of a vertical shaft or spindle 18, provided at its upper end with suitable operating means, such as a hand-wheel 19. The shaft 18 is preferably incased in a suitable sleeve or well 20, having a water-tight fit in the hull of the boat and extending above the waterline. By means of the hand-wheel, shaft, and gearing the board 12 may be rotated on its pivots and made to assume different angles with respect to the hull 10.

It will be seen that the board 12 is equally extended on both sides of its shaft 15 or axis of rotation, and it will be further noted that the board is capable of lying with its cross-sectional figure in substantially horizontal position, as shown by full lines in Figs. 2 and 4, in which position its side edges are at equal elevations with respect to the hull, or it is adapted to lie at an angle, with said side edges at different elevations with respect to the hull, as shown by dotted lines in Fig. 2 and full lines in Fig. 5. The board may be rotated to either side of the central position shown in Fig. 2.

When the boat is on an even keel or traveling before the wind, the greatest lateral resistance is not required and the board is established in its median position, as shown in Fig. 2. When the boat is heeled over to starboard, as indicated in Fig. 5, the board 12, by means of its operating machanism, is so rotated as to depress its starboard-side edge and elevate its port-side edge with respect to the hull 10. This has the effect of increasing the lateral resistance of the boat, as is evident from the fact that the lower edge of the board is depressed farther into the water. The degree of depression may be regulated at will within the limits of movement of the board by moving the operating mechanism. It will be seen that as the heel of the boat increases the position of the board approaches more nearly to the vertical. This is quite a different effect from that of the ordinary centerboard, which departs more and more from the vertical as the heel of the boat increases. My improvement has more the effect of a lee-board without the disadvantages of position and manipulation incident to the latter. When the boat is heeled to port, the board 12 will be moved to the opposite side of its median position from that shown in Fig. 5.

The board 12 may be weighted or not, as desired. If weighted, it will act as ballast, and in this event it is evident that it acts more in the nature of a keel than a centerboard, for there is not the vertical shifting of ballast due to raising and lowering a weighted centerboard, which is sometimes a disadvantage—as when, for instance, in an emergency the

board is up and the boat is required to be suddenly sailed into the wind without time to lower the board.

Further advantages of my invention over centerboard boats are that there is less liability to damage when the boat runs aground and less liability of fouling the board by water-weeds or eel-grass, the board being preferably formed, as shown in Fig. 1, so that its contour is a gradual continuation of that of the forward part of the keel.

As shown, the board 12 is so weighted as to bring its center of gravity considerably below its axis of oscillation, whereby the turning of the board, as represented in Fig. 5, has the effect of shifting ballast to the windward side of the keel-line of the boat, and thus increases the tendency of the boat to maintain its equilibrium. Obviously the form may be such as to provide a greater amount of weight below the axis of oscillation.

Various modifications in details of construction may be made without departing from the spirit of my invention.

I claim—

1. A boat provided with a keel-board pivoted on a longitudinal axis and extending on both sides thereof and weighted to bring its center of gravity below its pivot, and means for positively moving said board into different angular positions.

2. A boat having a recessed keel and provided with a keel-board, said keel-board being pivoted on a longitudinal axis within said recess and extending on both sides of said axis and weighted to bring its center of gravity below its pivot, said board being adapted to lie with its edges either at equal or at different elevations with respect to the boat-hull.

3. A boat having a recessed keel and provided with a keel-board, said keel-board being pivoted on a longitudinal axis within said recess and extending on both sides of said axis and weighted to bring its center of gravity below its pivot, said board being adapted to lie with its edges either at equal or at different elevations with respect to the boat-hull, and means for positively moving said board into said different positions.

In testimony whereof I have affixed my signature in presence of two witnesses.

SYLVESTER S. YORK.

Witnesses:
C. F. BROWN,
GEORGE PEZZETTI.