

(No Model.)

G. W. SCHERMERHORN.

BALLAST FOR SHIPS.

No. 327,724.

Patented Oct. 6, 1885.

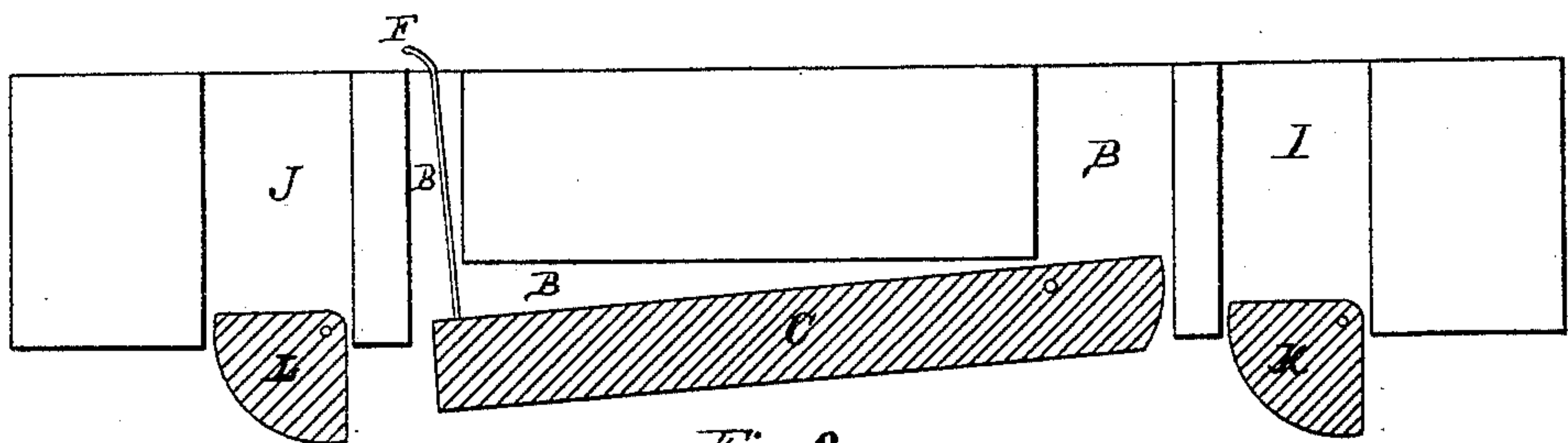
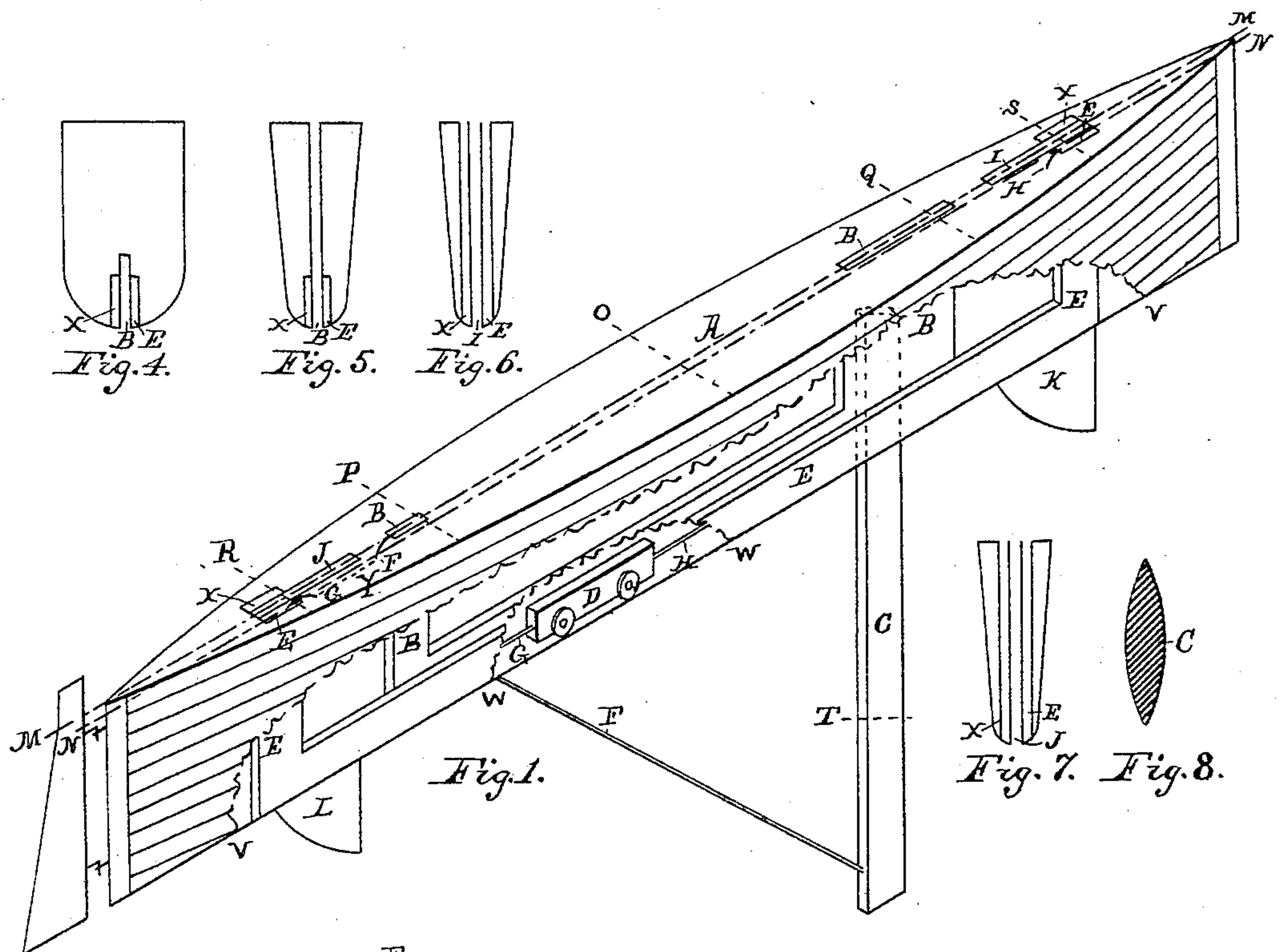


Fig. 2.

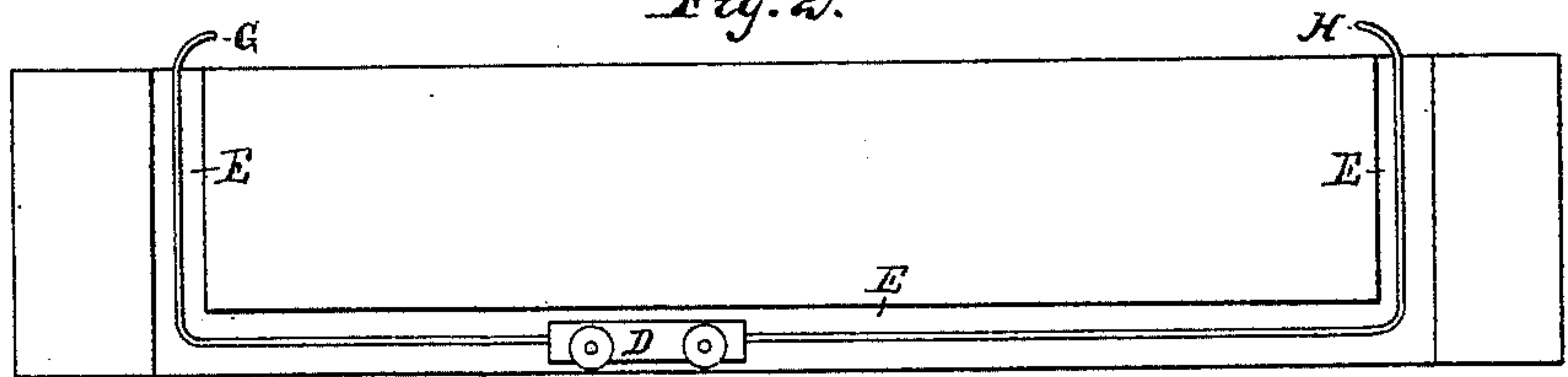


Fig. 3.

WITNESSES:

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BALLAST FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 327,724, dated October 6, 1885.

Application filed March 27, 1885. Serial No. 160,345. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHEELWRIGHT SCHERMERHORN, a citizen of the United States, residing at No. 423 Arch street, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Ballast for Boats or Ships, of which the following is a specification.

My invention relates to improvements in the ballast for boats, in which a long heavy ballast-keel, made of a heavy material, or of wood combined with a heavy material, is hung in a box near its forward end by a bolt or other device that will allow the after end of the ballast-keel to be lowered and hauled up, and operates in conjunction with inside ballast, which is moved fore and aft in a conduit, as the ballast-keel is lowered or hauled up; and the said ballast-keel also operates in conjunction with two center-boards, one forward and one aft; and the objects of my improvements are, first, to provide a long heavy ballast-keel, much longer and heavier than any weighted center-board, and which can be carried lower down than ballast can be carried in any other way, and which can also be hauled up or lowered, as the case may require; second, to furnish ballast, in a conduit, that may be moved fore and aft in conjunction with the ballast-keel as the ballast-keel is lowered or hauled up; third, to provide two center-boards, one forward and one aft, to be lowered or hauled up in conjunction with the ballast-keel. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the entire invention. A is the hull of a boat, with a portion of its side and bottom broken away at the heavy dotted line V V, so as to show a portion of the ballast-keel box B and also the movable ballast-conduit E, with a portion of its side and top broken away at the heavy dotted line W W, so as to show the movable ballast D with a portion of the ropes or chains G and H attached to its ends. Fig. 2 is a vertical fore-and-aft or longitudinal section taken at the dotted line M in Fig. 1. Fig. 3 is a vertical fore-and-aft or longitudinal section taken at the dotted line N in Fig. 1. Fig. 4 is a vertical cross-section taken at the dotted line

O in Fig. 1. Fig. 5 is a vertical cross-section taken at either of the dotted lines P or Q in Fig. 1. Fig. 6 is a vertical cross-section taken at the dotted line S in Fig. 1. Fig. 7 is a vertical cross-section taken at the dotted line R in Fig. 1. Fig. 8 is an enlarged section of what I consider one of the best forms for the ballast-keel C, and is a cross-section of the ballast-keel C taken at the dotted line T in Fig. 1.

Similar letters refer to similar parts throughout the several views.

The keel-box B, shown in Figs. 1 and 2, differs from a center-board box, first, it is much longer fore and aft; second, in having its forward and after ends extend up to the deck, or nearly so, while the remainder of the box is just deep enough to contain the ballast-keel C.

The ballast-keel C, shown in Figs. 1 and 2, differs from a center-board in being much longer and heavier than any weighted center-board.

The conduit E is a spout or tube, made of wood or any suitable material, and of such size and form that the ballast D can be moved fore and aft in it. There can be two of these conduits, one on each side of the keel-box. Sections of such second conduit are shown at X in Figs. 1, 4, 5, 6, and 7.

F is a rope or chain attached to the ballast-keel C, and is used to lower or haul up the ballast-keel C.

G is a rope or chain attached to the after end of the ballast D, and is used to haul the ballast D toward the after end of the boat.

H is a rope or chain attached to the forward end of the ballast D, and is used to haul the ballast D toward the forward end of the boat.

I is a center-board box placed in the forward part of the boat, and contains the forward supplemental center-board, K.

J is a center-board box placed in the after part of the boat, and contains the after supplemental center-board, L.

Now, if the boat A in Fig. 1 was on an even keel or in proper trim, with the ballast-keel C hauled up in its box, it is evident that as the ballast-keel was lowered the boat would be trimmed too much by the head. Now, the way my invention overcomes that is, by attaching the ballast-keel rope F to the inside

ballast-rope, G, as is shown by the short dotted line Y in Fig. 1; then as the ballast-keel C is lowered it hauls the ballast D aft and keeps the boat A in proper trim. The ballast-keel C and the ballast D can be of such relative size and weight that when the ballast-keel C is lowered all the way down it will haul the ballast D into such a place as will bring the boat A in proper trim, or by taking the ropes G and E to a wheel and axle, or to cone pulleys, or by reeving the ropes G and F through blocks so as to give increased or diminished speed, the ballast-keel C will haul the ballast D into the right place at any point that the ballast-keel C may be lowered to, so that the boat will always be in the proper trim; or the ballast D may be hauled fore and aft by hauling on the ropes G and H by hand, or with any convenient purchase, so as to always correct the effect of lowering and hoisting the ballast-keel C. The inside movable ballast D may be composed of any heavy material, or it may be water run through the conduit E, or it may be run in and out of a tank in either or both ends of the boat, so as to counteract the effect of lowering and hoisting the ballast-keel C. But I prefer to carry out this feature of my invention as I have shown in the accompanying drawings. The object of my ballast-keel C is to furnish ballast; but it also has the same effect in preventing the boat from making leeway that a keel or center-board has.

It is evident that with the ballast-keel C lowered a little way down, as is shown in Fig. 3, the boat, if on a wind, would have too much after keel, which is counteracted by lowering the forward center-board, K, and hauling up the after center-board, L; but, when the ballast-keel C is lowered all the way down, as is shown in Fig. 1, then the after center-board, L, is to be lowered and the forward center-board, K, is to be hauled up.

The ballast-keel C and the center-boards K and L are to be of such relative size that by working them in combination with each other an equilibrium is always obtained in every position of the ballast-keel C.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a ballasting device for vessels, the combination of the weighted center-board pivoted at its forward end to the center-board box, the movable ballast located on ways in the hold, and the ropes F and G, the one secured to the after end of the center-board, the other to one end of the movable ballast, both passing over pulleys within the vessel, all so connected that as the weighted center-board is lowered the movable ballast is shifted aft, substantially as described.

GEORGE WHEELWRIGHT SCHERMERHORN.

Witnesses:

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