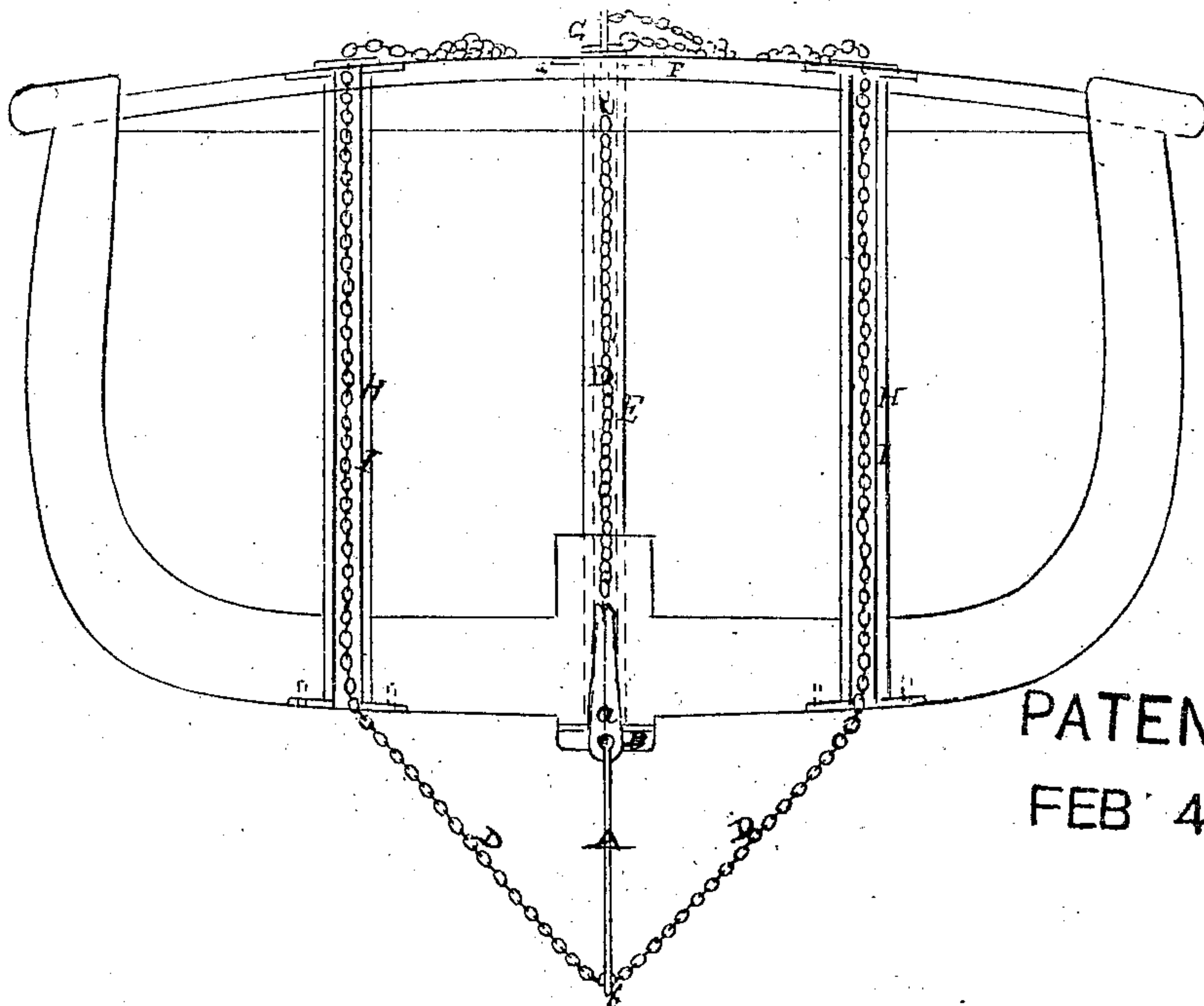
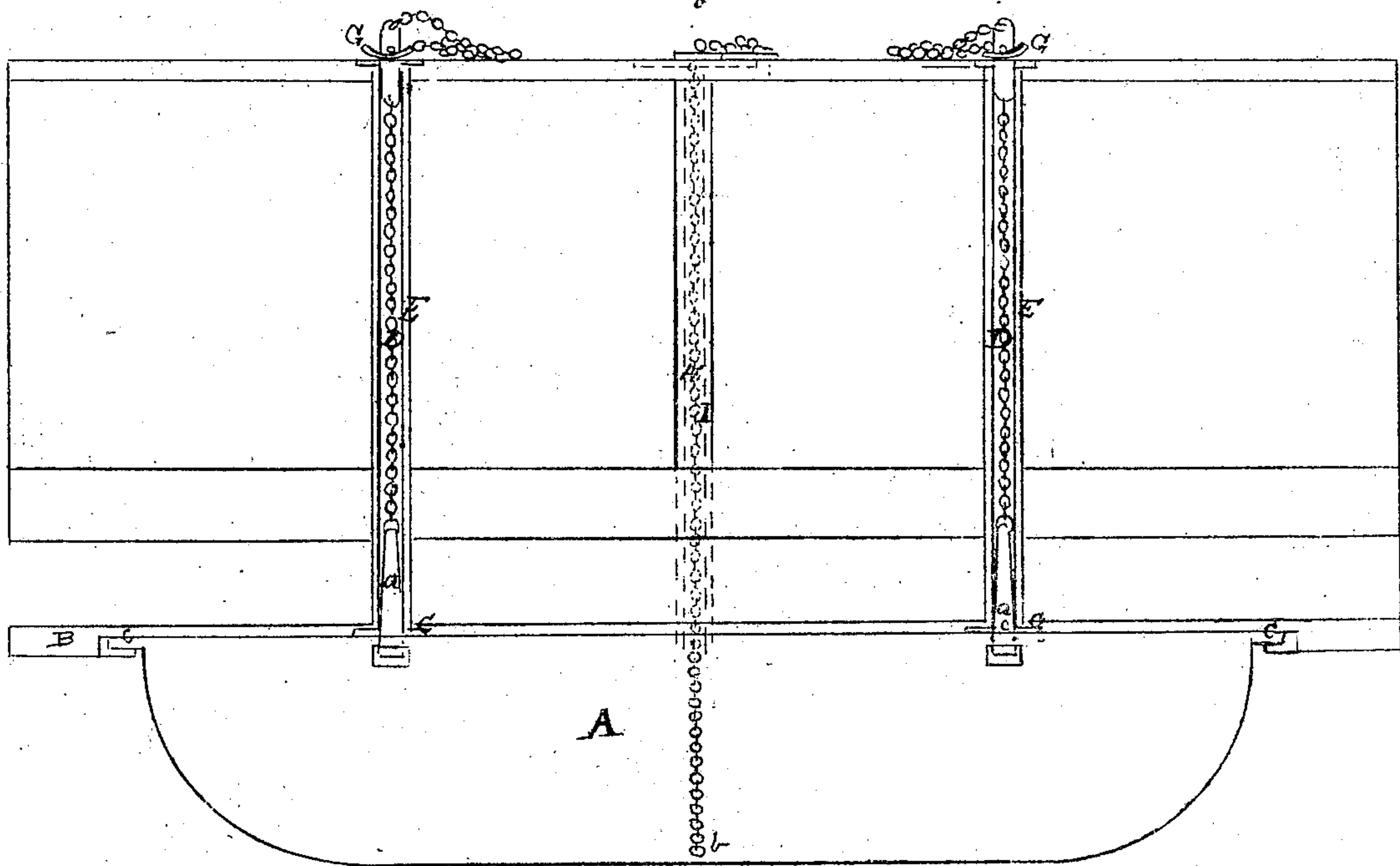


DUNCAN ROBERTSON'S IMPROVED CENTRE BOARD

74003



PATENTED
FEB 4 1868



Witnesses
H. F. Eberts
Chas. Almond

Inventor
Duncan Robertson
by Wm. A. Harvey
Thos. S. Sprague

United States Patent Office.

DUNCAN ROBERTSON, OF DETROIT, MICHIGAN.

Letters Patent No. 74,003, dated February 4, 1868; antedated December 12, 1867.

IMPROVED CENTRE-BOARD FOR VESSELS.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN

Be it known that I, DUNCAN ROBERTSON, of Detroit, in the county of Wayne, in the State of Michigan, have invented a new and improved Method of Attaching Centre-Boards to Vessels; and I do declare that the following is an accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, constituting a part of this specification.

Figure 1 is a transverse sectional view.

Figure 2 is a longitudinal sectional view.

The letters of reference are the same in both figures.

My invention is designed to do away with the ordinary centre-board used in vessels, by which a well is required, which takes up room in the hold of the vessel.

I use an iron centre-board, A, attached to the keel of the vessel, B, by means of journals C C, working in eye-bolts *a a*, which pass through the keel B. To the inner ends of the eye-bolts *a a*, I attach chains or ropes, D D, which pass up through hollow stanchions E E, to the deck of the vessel F, where they are secured by stops G G.

When it is required to use the centre-board A, by casting off the chains or ropes H H, which are attached to the outer edge of the centre-board A at *b*, and pass up through other hollow stanchions, I I, to the deck of the vessel, where they are attached to a winch, or any other proper method for raising or lowering them, the centre-board drops by swinging upon the journals C C. Then, by tightening the chains or ropes H H, the centre-board A can be held in place, either perpendicularly or at any required angle. When not in use, the centre-board A can be folded against the bottom of the vessel by casting off either of the chains or ropes H H, and hauling taut upon the other by means of the winch, or other means used for raising or lowering the ropes or chains H H.

To unship this centre-board, it is only necessary to cast off all the chains or ropes D D and H H, (first attaching a buoy to one of them,) when the centre-board A will sink, and can easily be recovered by means of the buoyed line or chain.

This centre-board can be attached to a vessel while on the stocks, as, being flush with the keel, it can in no way interfere with launching the vessel.

By the use of this keel I save the space in the vessel's hold usually taken up by the well, and am not obliged to cut away any part of the keel, and frame the side frame directly into the keel.

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

The combination and arrangement of the iron centre-board A, the journals C C, the eye-bolts *a a*, the ropes or chains D D H H, the hollow stanchions E E I I, and the stops G G, arranged substantially as described for the purpose designed.

Witnesses:

J. W. HOUGHTLIN,

H. F. EBERTS.

DUNCAN ROBERTSON.