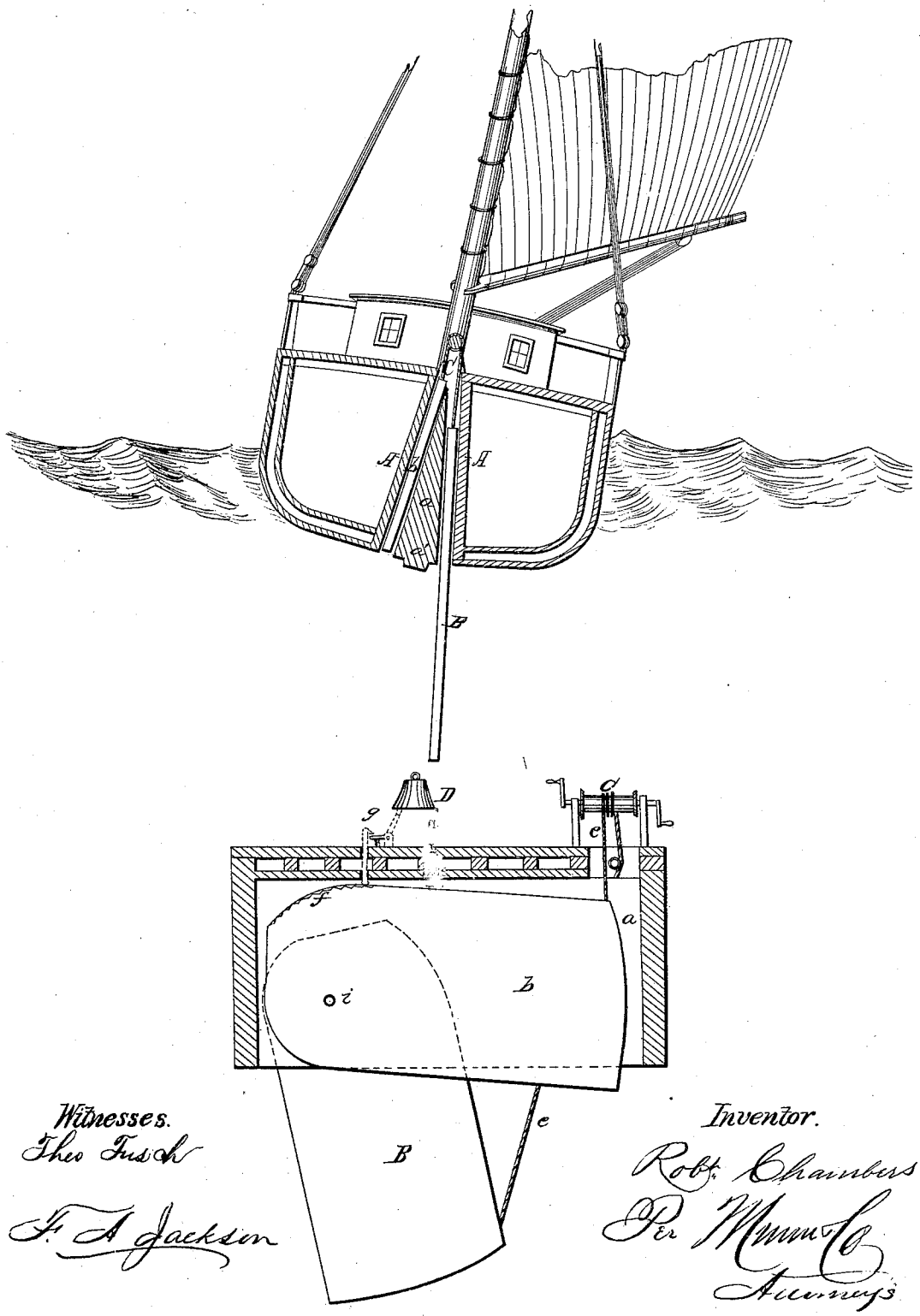
R. Chambers.
Centre Board.

No. 61,049. Patented Jan. 8, 1867.



Witnesses.
Theo Tusch
F. A. Jackson

Inventor.
Robt. Chambers
Per Munn & Co
Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

ROBERT CHAMBERS, OF DETROIT, MICHIGAN.

Letters Patent No. 61,049, *dated January* 8, 1867.

IMPROVED CENTRE-BOARD FOR VESSELS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT CHAMBERS, of Detroit, in the county of Wayne, and State of Michigan, have invented a new and improved Centre-Board; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a cross-section of my invention; and

Figure 2 is a vertical longitudinal section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to new and useful improvements in sliding keels or centre-boards of sail vessels, and consists in the employment of two boards in one box, the boards being hung in such manner that the lee-board will stand vertically in the water when the vessel is careened over considerably by the force of the wind, as hereinafter explained; and the invention further consists in the employment of an alarm bell, to be sounded by the shutting movement of a centre-board when it strikes bottom, and thereby give warning of shoal water.

A A (fig. 1) is the keel-box, which is divided into two compartments by the fixed keel *a'* and by a heavy piece of timber, *a*, running longitudinally through the centre of the box. One of the compartments is occupied by a centre-board, *b*, and the other by the centre-board B, so that the box contains two boards *b* B. These boards are set or hung in the box so that their lower ends diverge more or less, as shown in fig. 1. D (fig. 2) is a bell, which is fixed in its position. The boards have ratchet edges, as shown in red lines, *f*, and striking-devices, *g*, which are operated by the said ratchet or cam edges *f* when the boards are moved or swung on their pin or pivot *i*, and when the board that is down strikes upon the bottom or ground it moves up into its box and the bell D is sounded and gives warning that the water is shoaling. It is designed that the lee-board shall be the one used, and when the vessel is put about on the other tack then the other board becomes the lee one, and it is lowered down while the vessel is in stays and the other one taken up. This operation of taking up one board and putting down the other is easily and readily r naged, as the two boards *b* B are connected together by a chain or rope, *e*, which passes over the winch C, (fi 2,) and by these means the weight of the boards is balanced on the winch C, and they are consequently r ily changed when the vessel is in stays. When the board stands vertically in the water, (as shown by board B, fig. 1,) it holds on better and the vessel makes less leeway; and the board is less liable to be broken, as the water does not wedge under it in the same manner that it does when the board is inclined, and when a vessel drops in a seaway she falls upon the board with less force when it stands vertically than when having a somewhat horizontal position. Another advantage of these double boards is that when a board gets broken, as is sometimes the case, the second board may be made to answer until the broken board is replaced.

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

1. The keel-box A, having fixed keel *a'*, and piece *a*, forming passages for the centre-boards B *b* pivoted thereto, having ratchet edges *f*, in combination with the striking-device *g* of the bell D, substantially as and for the purpose specified.

2. The centre-boards B *b*, operating in combination with the alarm bell D, for the purpose described, substantially as specified.

ROBERT CHAMBERS.

Witnesses:

CYRUS PEABODY,

R. H. BECHAN.