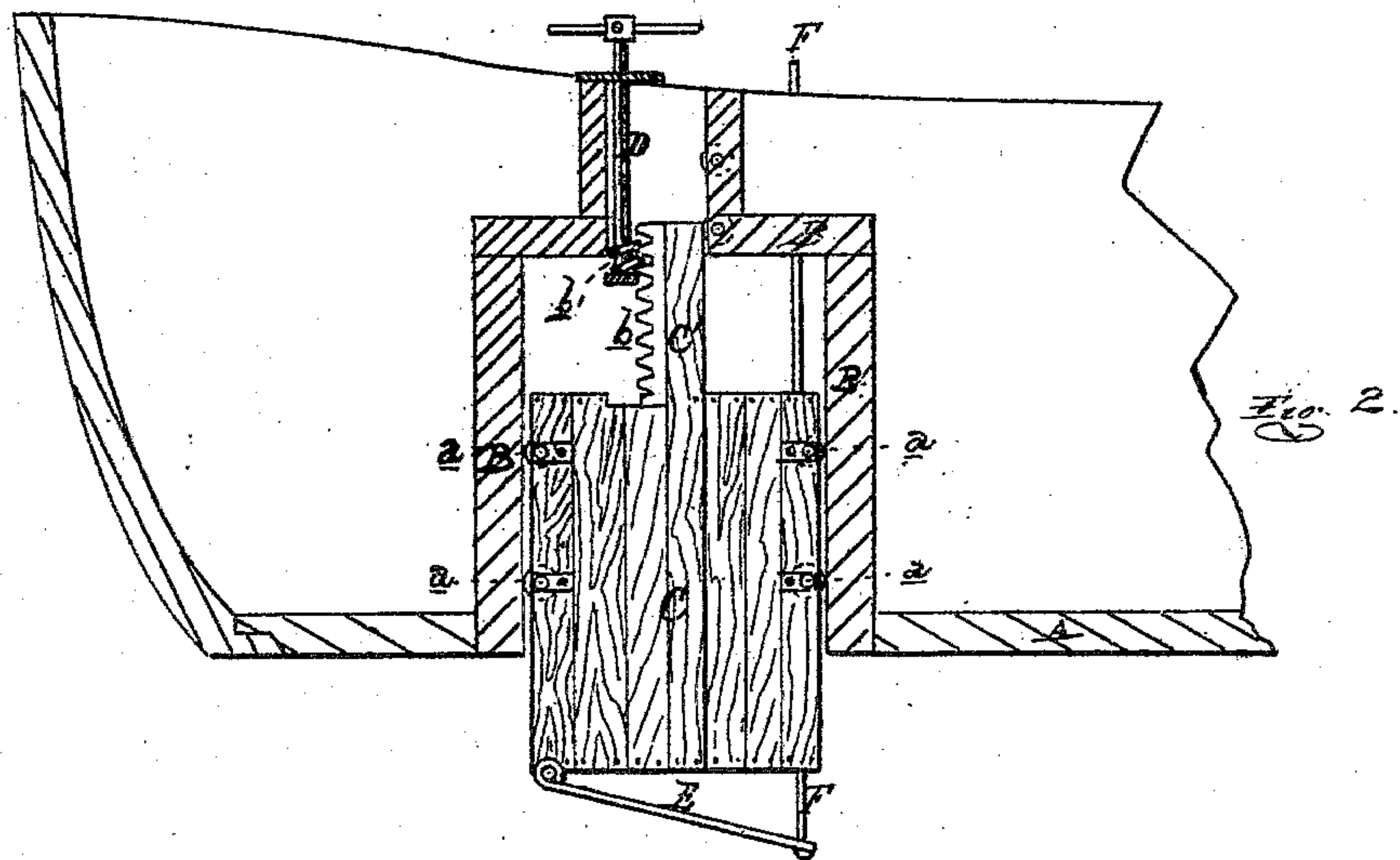
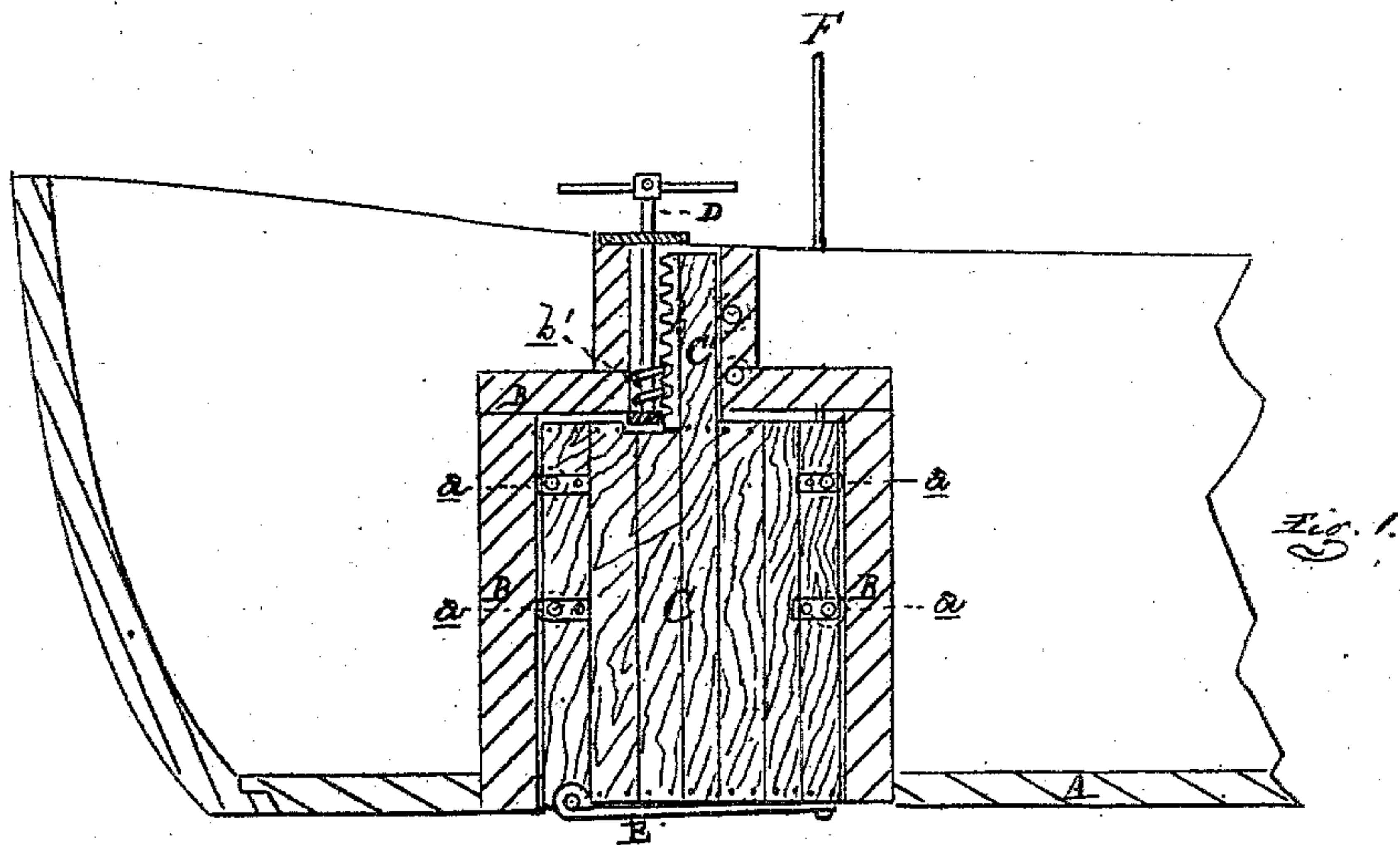


J. DEAN.

Improvement in Center-Boards for Vessels.

No. 132,390.

Patented Oct. 22, 1872.



ATTEST :

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# UNITED STATES PATENT OFFICE.

JAMES DEAN, OF DETROIT, MICHIGAN.

## IMPROVEMENT IN CENTER-BOARDS FOR VESSELS.

Specification forming part of Letters Patent No. 132,390, dated October 22, 1872.

*To all whom it may concern:*

Be it known that I, JAMES DEAN, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Center-Boards; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a longitudinal section of a portion of a barge-hull through the center-board, box, or well, showing the center-board raised; and Fig. 2 is a similar view, showing the center-board lowered.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improvement in the construction of and method of operating an improved center-board, more especially designed to replace the cumbersome, expensive, and dangerous construction usually fitted to sailing vessels and barges which are flat-floored and have but little dead-rise; also, in connection with the said center-board, the employment of an indicator to warn those on board when the vessel passes into shallow water. The invention consists, first, in the peculiar construction of the center-board, and in the means employed for raising and lowering it; and, second, in connection therewith of an indicator to denote the passage of the vessel into shallow water.

In the drawing, A represents the keel of a vessel, through which is mortised a longitudinal vertical slot inclosed in a vertical well or center-board box, B, built up in the usual manner from the keelson, except that it is much lighter than those required for the ordinary center-boards heretofore pivoted therein. C is the improved center-board, built up of heavy planks placed vertically edge to edge and firmly bound together. It slides in the center-board box, in which it fits snugly, having no room to play about, to give the pendent end leverage in a sea-way. To facilitate its movement it has journaled in the upper third of each end a pair of rollers or wheels, *a*, which bear against an iron strap with which the ends of the box are faced. The middle timber C' of the center-board is carried up into a well-hole extending from the deck to the center-board

box, and is faced on one edge by a worm-rack, *b*. D is a shaft, journaled through a bearing at the deck, and in a step, *e*, placed transversely across the upper part of the box. This shaft carries a worm, *b'*, which meshes with the rack *b*. The head of the shaft may be squared to receive a double crank-key, or fitted with sockets to receive hand-spikes or capstan-bars, by which it may be hove around to raise or lower the center-board, which, when fully lowered, should not show more than two-thirds of its area below the keel, in order to give the necessary resistance to the great leverage exerted by the exposed part. To the fore foot of the center-board is hinged a wide iron strap, E, extending to the after foot, where there is attached to it a light iron rod, F, which passes up a tube bedded in the rear edge of the slip-keel, and through another tube leading from the top of the box through the deck, where means should be provided to stopper it when the center-board is raised and the strap E drawn up against its bottom. When the center-board is to be lowered the stopper of the rod is cast loose and the rod allowed to drop, so that the strap will hang as seen in Fig. 2. If the vessel runs into shoal water the rising of the rod above deck will warn the crew to raise the center-board before it fouls on the bottom and gets broken or damaged.

At the present time the vessels navigating the great lakes and comprising about one-half of the commercial marine of the United States are, of necessity, built with flat floors and with but little dead-rise, and consequently, to enable them to sail on a wind, they are provided with massive center-boards, which are pivoted in the fore parts of the center-board boxes. A winch or windlass is provided to raise and lower each center-board, which frequently jams in the box, and cannot in a sea-way be moved until the vessel comes in stays. The ordinary center-board is long and heavy, and the length of the center-box is a source of weakness in the hull, which is easily hogged when going light in a gale. The king-bolt in the center-box frequently causes a damaging leak, for which the vessel is liable. With my improved center-board the same area of resistance to leeway may be got with one-half the length of center-box. The planks in the center-board



are stronger, from their vertical disposition, than the horizontal center-boards, and the center-box is of heavy timber only for the lower third of its height, and the whole arrangement is much cheaper to put in a vessel, and easier handled.

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

1. The combination of the board *c* having

friction-rollers *a a* with the box B and the elevating devices D *b b'*, as described.

2. The combination of the elements above claimed with the indicating devices E F, as described.

JAMES DEAN.

Witnesses:

H. F. EBERTS,  
H. S. SPRAGUE.