(No Model.)

M. W. ATWOOD.

Center Board for Boats.

No. 230,989. Patented Aug. 10, 1880.

Fig. 1

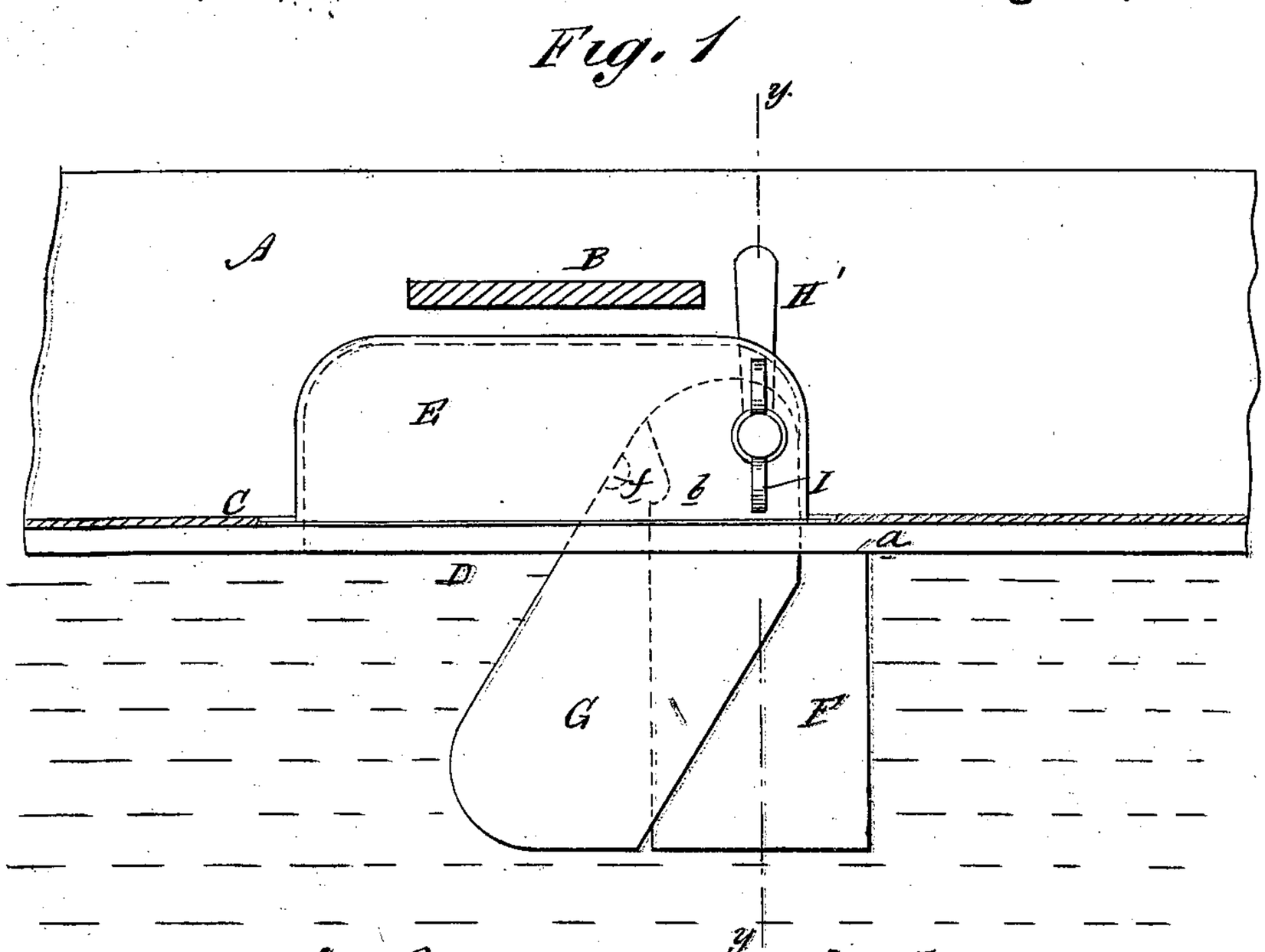

Fig. 2

Fig. 3

Fig. 4

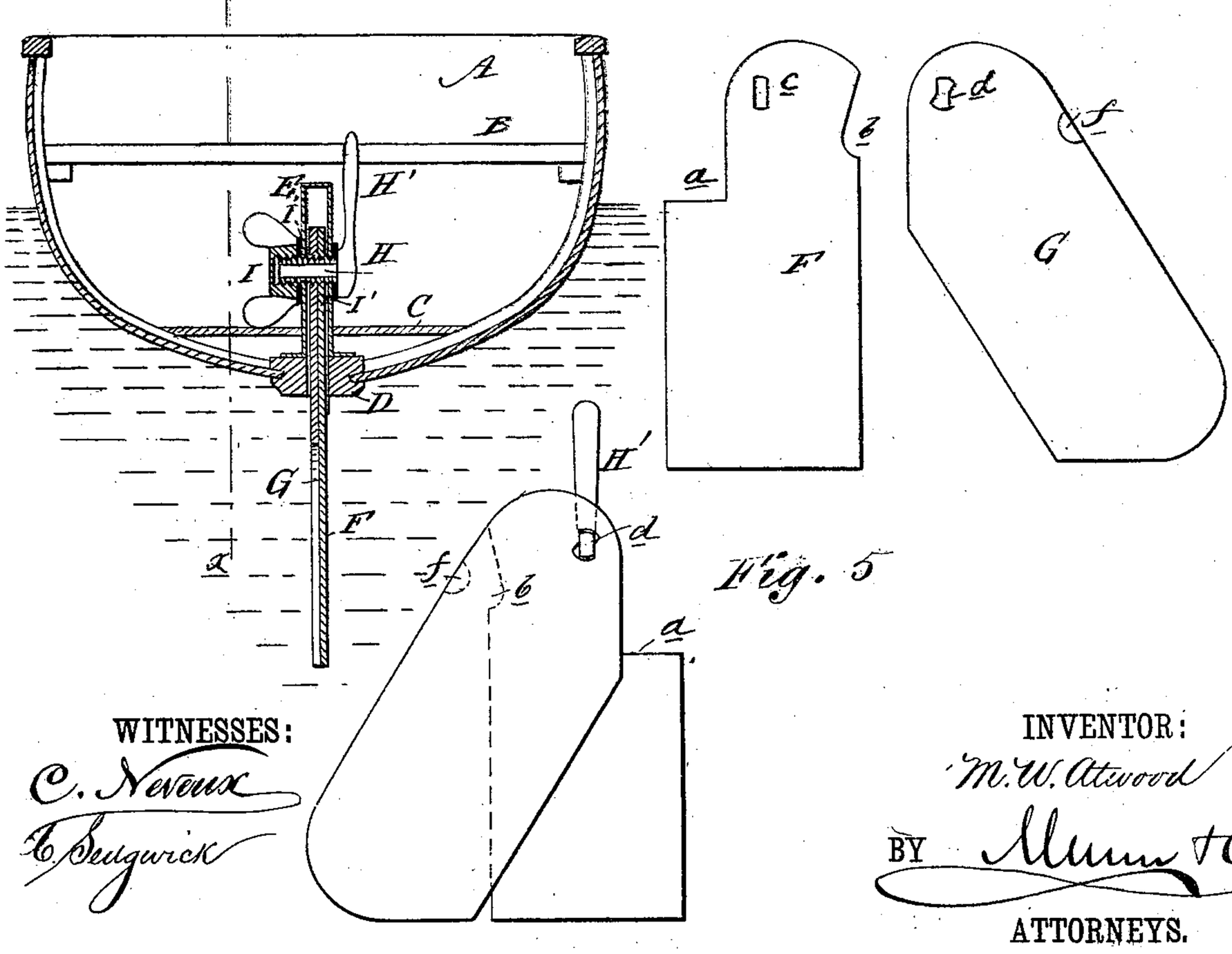

Fig. 5

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MONTRAVILLE W. ATWOOD, OF CLAYTON, NEW YORK.

CENTER-BOARD FOR BOATS.

SPECIFICATION forming part of Letters Patent No. 230,989, dated August 10, 1880.

Application filed April 13, 1880. (No model.)

To all whom it may concern:

Be it known that I, MONTRAVILLE W. ATWOOD, of Clayton, in the county of Jefferson and State of New York, have invented a new and Improved Center-Board for Boats, of which the following is a specification.

The object of this invention is to provide an effective center-board that may be applied to any boat, but is specially adapted to a row-boat, without interfering with the oarsmen, and be contained within a box that is water-tight, excepting at its bottom or keel-opening, which box may be arranged beneath thwart of the boat.

The invention consists of a center-board constructed of two or more pieces or leaves, so that they may be folded and opened and elevated and depressed at pleasure by means of a bolt and lever, said center-board being contained in a low box that is water-tight above the bottom of the boat.

Figure 1 is a sectional side elevation of a midship section of the boat, representing the center-board down, on line *x x*, Fig. 2. Fig. 2 is a transverse sectional elevation of the same on line *y y*, Fig. 1. Fig. 3 is a side elevation of the main piece or leaf of the center-board. Fig. 4 is a side elevation of a second or auxiliary piece or leaf. Fig. 5 is a side elevation of the two pieces of the center-board adjusted on the bolt and unfolded and lowered.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a boat; B, the thwart of the boat; C, the flooring of the boat; D, the keel of the boat. E is the center-board box, said box E being set centrally beneath the thwart B over a longitudinal opening through the keel D, said box E being water-tight at all points within the said boat.

F is the main leaf of the center-board, consisting of a wood or metal plate whose upper section, which remains in the box E when the center-board is lowered, has its top rounded, as shown, its front edge cut perpendicularly down to a square shoulder, *a*, and its rear edge cut away on a slight inward slope and curve, *b*, while the lower section of said main leaf F is preferably of rectangular outline, as shown, and said leaf F is provided with a rectangular slot, *c*, in its upper section, through which slot the adjusting king-bolt H passes.

G is the second or auxiliary leaf of the center-board, which, when lowered, laps partly over the leaf F. When lowered in position the front edge of said leaf G inclines forward at an angle of about forty-five degrees from the perpendicular, the lower rear corner is rounded, the bottom is cut off in a horizontal line, the front edge is parallel with the rear edge from the bottom of the leaf nearly to the center-board box E, and above that is cut away on a vertical line, as shown. Said leaf G is provided in its upper part, near its front edge, with a vertical slot, *d*, that is narrow in the center and widens in fan shape at each end, as shown. Said leaf G is also provided on its side near its rear edge with a stop, *f*, against which stop *f* the curved edge *b* of the leaf F engages when the center-board is raised.

H is the threaded king-bolt, cut away or flattened longitudinally on opposite faces, so that it may freely enter the slots *c d*, respectively, of the leaves F G, said king-bolt H having attached to its head a lever or handle, H′, and having adjusted on its end a winged nut, I, and being journaled in the sides of the box E.

Ordinarily center-boards are made in one piece and raised or lowered by chain or rope in a high center-board box, which is open at the top, such box being necessarily so high as to interfere with the oarsmen in the boat.

In the device herein shown the center-board is constructed in two parts or leaves, F G, and suspended on the flattened king-bolt H, so that when folded and raised they occupy but little space. Consequently a low center-board box that can be placed beneath the thwart of the boat suffices to hold them.

In raising and folding the parts or leaves G F from the position shown in Figs. 1 and 2 the leaf F is steadily swung upward until its curve *b* strikes the stop *f* of the leaf G, until then the leaf G not being moved, because of the shape of its slot *b*, when, on the further turning of the said king-bolt H, the two leaves are raised together into the box E above the keel D. In lowering the said center-board, by turning the king-bolt H by means of the lever H′ the leaf F is first unfolded and turned down,

because of the shape of the slot *c*, into which the flattened shank of the king-bolt H exactly fits, while the leaf G is not moved until the king-bolt H is turned diagonally in the slot *d* of the said leaf G. The leaf F hangs perpendicularly down, because it is cut away at its upper front edge to form the square shoulder *a*, and to thereby clear the end of the box E, while the leaf G is held at the angle shown in Figs. 1 and 2, because of the shape and position of the slot *d*.

This center-board may be held in any position by tightening the nut I on the king-bolt H, and is adjusted more readily by means of the lever H′ than it could be by chain or rope. The king-bolt H being placed near the upper end of said center-board, and the front edge of the leaf F being cut away to form the shoulder, admits of the greater portion of the said board being lowered below the keel.

The center-board box E is kept water-tight by placing the washers I′ I′ about the bolt H and against the sides of said box, so that when the nut I is firmly turned down the said washers are so compressed to fill the joints that there can be no leak about said bolt.

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

1. The herein-described center-board, consisting of the leaf F, provided with the rectangular slot *c*, the shoulder *a*, and the inclined and curved edge *b*, the leaf G, provided with the double-fan-shaped slot *d* and the stop *f*, and the flattened king-bolt H, passed through the slots of the said leaves and provided with the lever-handle H′, substantially as shown and described.

2. In a center-board, the combination, with the leaf F, provided with rectangular slot *c*, rectangular shoulder *a*, and inclined and curved edge *b*, of the leaf G, provided with double-fan-shaped slot *d* and stop *f*, substantially as herein shown and described.

3. In a center-board, the combination, with the center-board box E, the leaf F, provided with the rectangular slot *c*, the shoulder *a*, and the inclined and curved edge *b*, and the leaf G, provided with the double-fan-shaped slot *d* and the stop *f*, of the flattened king-bolt H, provided with the lever-handle H′ and the nut I, substantially as and for the purpose set forth.

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Witnesses:
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