# D. McAllaster,

## Miter Box.

No. 104,975. Patented July 5. 1870.

Fig. 1

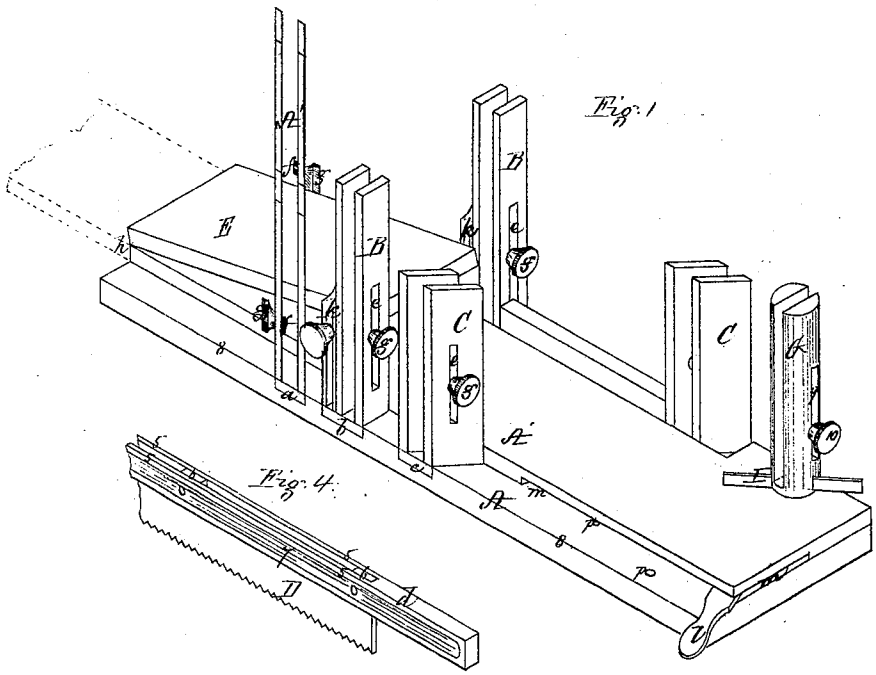


Fig. 4.



Fig. 2.

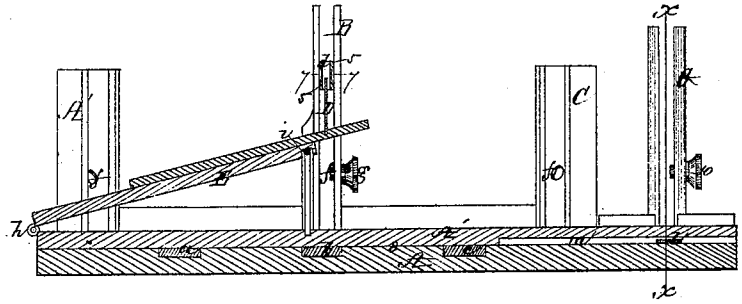
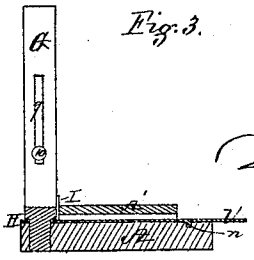


Fig. 3.



Witnesses,
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# United States Patent Office.

DANIEL McALLASTER, OF MALDEN, MASSACHUSETTS.

*Letters Patent No.* 104,975, *dated July* 5, 1870.

## IMPROVEMENT IN MITER-BOXES AND MITER-SAWS.

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, DANIEL MCALLASTER, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Miter-Boxes and Miter-Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of my improved miter-box.

Figure 2 is a longitudinal section through the center of the same.

Figure 3 is a transverse section on the line *x x* of fig. 2.

Figure 4 is a perspective view, showing the construction of my improved saw.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing—

A is the bottom or base, in which are formed three rectangular recesses or openings for the reception of correspondingly-formed pieces, *a b c*, from each end of each of which rise a pair of standards, A' B C, of the form shown, and being only separated from each other by a narrow space, the width of which is just equal to the width of the back or frame *d* of a saw, D, which moves in it, the standards serving as guides to prevent any lateral motion from the angular line on which the stock is to be sawed and united.

The back of the saw is composed of two parallel strips, 5, united by connecting-blocks 6, (see fig. 4,) and extending longitudinally with the blade, the outside of each strip 5 being grooved out, as seen at 7, fig. 2, by which construction the friction of the saw within its standards is materially reduced, and the back is made hollow, and is consequently light and easily handled.

The line passing through the center of the openings between the two pairs of standards A', is situated at exactly 45° (forty-five degrees) to the left of the horizontal line 8, forming the front of the base A, whereby a miter of 45° (forty-five degrees) may be cut.

The two pairs of standards B are directly opposite each other, and the line extending centrally from the opening between one pair and to that between the other pair forms an angle of just 90° (ninety degrees) with the horizontal front line 8 of the base, by which means a right-angular or square cut may be obtained.

The line passing from the center of the opening between one pair of standards C to that between the other pair of standards C, forms an angle to the right of exactly 45° (forty-five degrees) with the horizontal front line 8 of the base, so that, when a molding has been mitered by the saw in the standards A', it will unite and snugly and truly fit a miter cut in the standards C, and form a right angle as required.

One standard of each pair is provided with a slot, *e*, extending through it, in which a pin, *f*, may be raised or lowered, and clamped in place at the required height by turning a screw-nut, *g*, the said pin *f* serving as a stop to arrest the frame or back of the saw, and prevent the blade from entering the base A after having cut off the molding or other stock upon it, and the stop also regulates the distance or depth which the blade is to cut into the thickness of the article to be cut, when not required to be cut through, the stop being carefully set at such a height that, when the bottom of the frame or back touches it, the saw will have entered the precise depth previously determined on. The stop is made to project into the space between two standards of a pair only far enough to arrest the frame, but not to come in the path of the blade of the saw.

When the stock is not to be cut perpendicularly through its depth or thickness, that is to say, at an angle other than a right angle to its sides, the following device is employed.

E is a rectangular piece of board, hinged at *h* to one end of the base A of the miter-box.

*i* is a rod extending transversely across the box, and passing through slots *k* in two opposite standards B.

This rod is moved up and down within the slots, and, when adjusted to the proper height to cut the bevel required, the piece serving as a false bottom, E, is thrown over and supported by the rod, when the stock to be beveled is laid on the piece E, which thus serves as a false bottom, (see fig. 2.)

G G are a pair of standards rising from the back only of the base of the miter-box, and one of them is provided with a slot, 9, and stop 10, to arrest the progress of the saw lower than the point determined on.

Surrounding the bottom of these standards G is a metal ring or plate, H, from which extends an arm, *l*, which is free to swing around in a horizontal plane to angles of various inclinations other than 45°, (forty-five degrees,) the bottom of the base being recessed at *m* to allow of the traverse of the arm *l*, the under side of the outer end of which is provided with a pin, *n*, which enters a series of holes, *p*, made at fixed points in the base A.

In the same piece with the metal ring, and projecting slightly above the base A of the miter-box, is an extended guide-plate or "fence," I, which, on moving the arm *l*, is swung about so as to afford a rest or guide against which to place the stock when it is to be cut at a different miter than 45°, (forty-five degrees,) for instance, at an angle of thirty or sixty degrees, the "fence" being securely held in position by the pins *n* entering the holes *p*, whose position, with

respect to the stationary standards and revolving fence, is such as to enable the operator to cut the angle required.

The back or frame of the saw may be solid, if desired, and made of metal, but I prefer to make it hollow and of wood, in order to lessen its weight and reduce the labor of using it.

By the application of my improvements the saw is prevented from having any lateral motion, and the cut in or through the stock is made smooth, straight, and true, so that, when two miters of symmetrical angles are matched together, the joint formed by their union is perfect.

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

Two or more pairs of standards, A' B C, rising from the base A, and provided with slots *e* and stops *f*, the whole constructed, arranged, and operating substantially as and for the purpose set forth.

Also, the guide-plate or "fence" I, revolved around a pair of standards, G, substantially as and for the purpose described.

Also, a hollow or solid back-saw, D, provided with a groove, 7, on one or both sides, in combination with a pair of standards, as and for the purpose specified.

Witness my hand this 6th day of May, A. D. 1870.

DANIEL McALLASTER.

Witnesses:

N. W. STEARNS,

W. J. CAMBRIDGE.