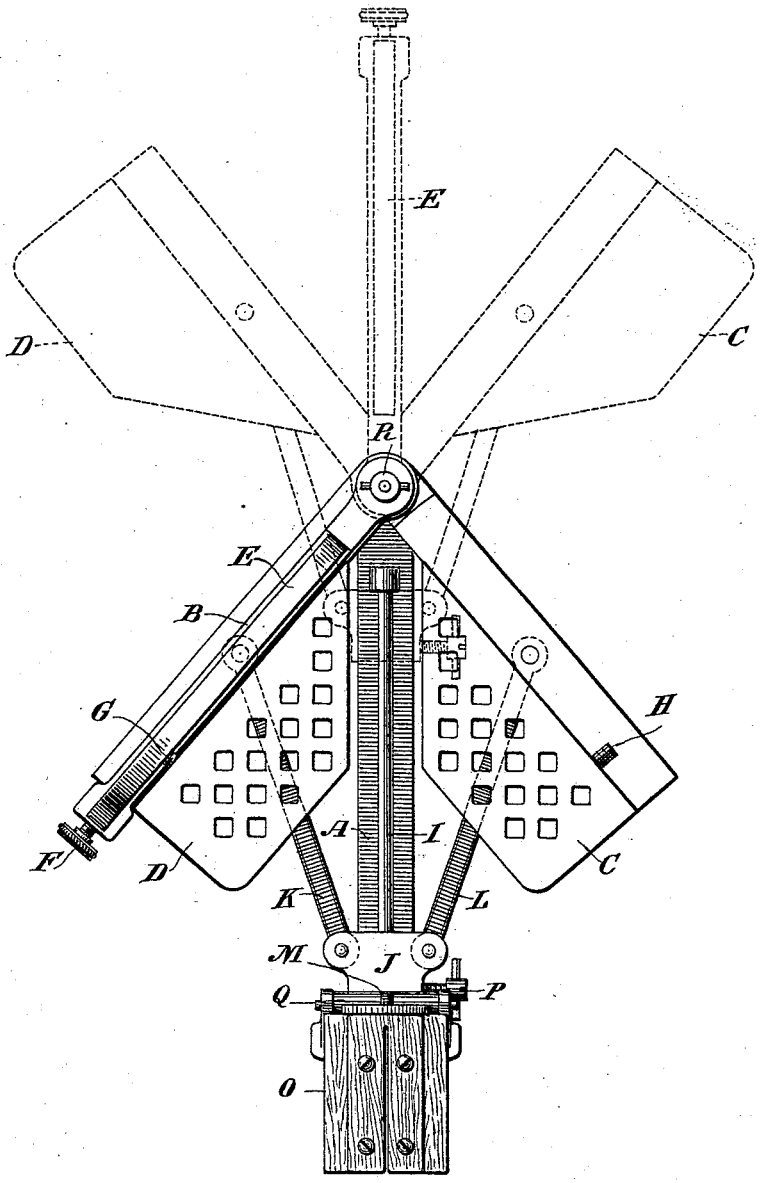
(No Model.) 2 Sheets—Sheet 1.

J. J. GREEN.

MITER BOX.

No. 522,591. Patented July 10, 1894.

Fig. 1.



Witnesses
C. E. Ashley
H. W. Lloyd.

Inventor
John J. Green
By his Attorneys
Popkin & Rogers

(No Model.) 2 Sheets—Sheet 2.

J. J. GREEN.

MITER BOX.

No. 522,591. Patented July 10, 1894.

Fig. 2,

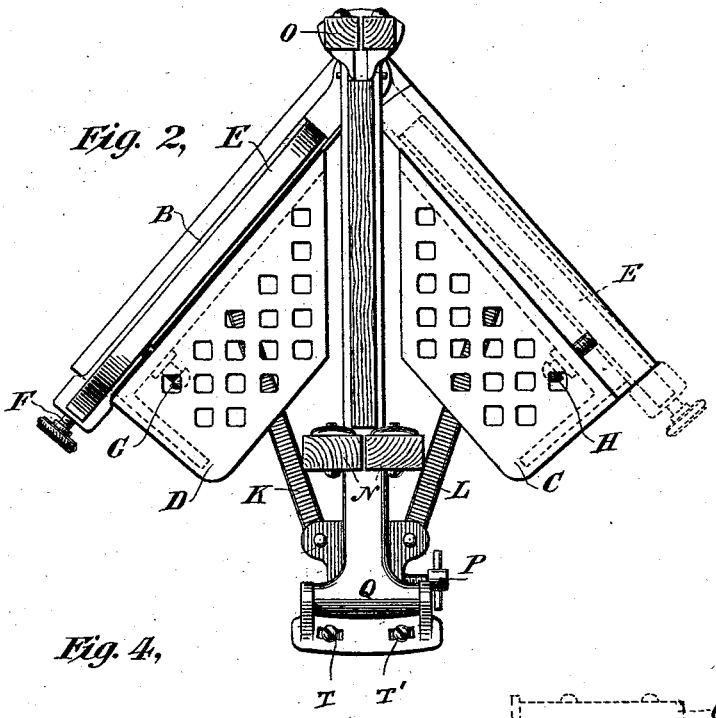
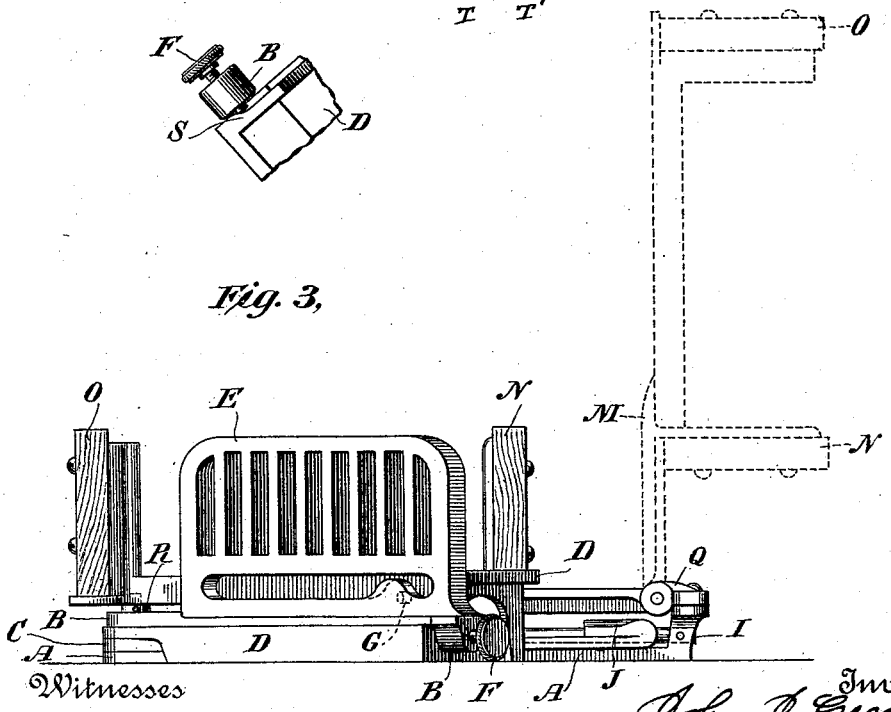


Fig. 4,

Fig. 3,



Witnesses

C. E. Ashley

H. W. Lloyd.

Inventor

John J. Green

By his Attorneys

Pope Read & Rogers

UNITED STATES PATENT OFFICE.

JOHN JAY GREEN, OF BOONTON, NEW JERSEY.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 522,591, dated July 10, 1894.

Application filed October 26, 1893. Serial No. 489,170. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAY GREEN, a citizen of the United States, residing in Boonton, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a specification.

The object of this invention is to produce a self-measuring miter box cheap and simple in construction, which will admit an accurate bisection of any angle at which a mitered joint is desired by direct application of the miter box to the corner for which the mitering is to be done. Miters are ordinarily made by first determining the angle and then selecting the nearest angle in a box provided with a number of saw guides, or setting an adjustable instrument to the determined angle. By my invention, however, the miter box may be applied directly to the corner to get the true angle, and thus errors in determination of the angle are avoided and much time is saved.

In the accompanying drawings which illustrate the invention, Figure 1 is a plan view of a miter box showing the frame which carries the saw guides thrown back upon its hinge, and indicating two positions, one in full and the other in dotted lines, of the guides for the material. Fig. 2 is a plan view of the miter box in position for use. Fig. 3 is a side elevation of Fig. 1; and Fig. 4 is a bottom plan view of a portion of the guide for the material.

A represents a suitable stock upon the front end of which is pivoted three castings B, C, D, one of these, B, having formed integral therewith an upright work-guide E. The faces of the castings C and D form shelves or tables upon which the material to be mitered rests, one acting as a support on the right side and the other on the left side of the box. The castings are preferably formed in skeleton shape so as to reduce the weight to a minimum. Each of the castings C and D is formed of a thin shelf, as indicated, provided with a rib underneath at the end and bending downwardly and outwardly on the outside, forming a ledge on which the arm B slides, as indicated in dotted lines in Fig. 2, and in full lines in Fig. 3. The rib serves to give strength and also to form an abutment for a binding-screw F, which locks the adjustable arm B, and also as a support for set-screws G, H. The adjusting screws G, H act as fixed stops for the swinging arm B, and permit the latter which carries the work-guide to be brought into accurate alignment with the outer edges of the tables C, D which determine the angle when the box is applied to a corner. Moreover, it is sometimes desired to have the sides of the joint spread somewhat from the meeting edge, as in cases where only one edge of the joint will be exposed to view, thus permitting a close junction to be made at that edge without additional cutting; in such cases adjustment of the screws G, H permit the material to be sawed so that the sides of the joint will slope away from the meeting edge. With a fine saw, however, the cuts will be clean and the angle accurately bisected so that the edges will fit closely together along the whole line of the joint, and in such cases the screws G, H will be set to bring the work-guide in accurate alignment with the outer edges of the tables C, D which determine the angle. The lower flange of the tables C, D is provided with a beveled shoulder indicated at S, which permits the swinging arm B to be firmly locked at any point determined by the set-screws G. H.

Upon the stock A is mounted a rod I which serves as a guide for slide J connected by rigid links K, L with the two tables of the miter box. At the rear end of the stock A is pivotally mounted an arm M formed of a light stiff casting, in which is provided brackets for blocks N, O, containing the saw kerfs suitable holes being tapped in the brackets for the reception of screws to fasten the blocks. The bracket or plate in which the arm M is journaled is provided with slots T, T′ which permit it to be shifted to bring the saw kerfs accurately on the line bisecting the angle; and the top of the pin R projects to form a bearing for a recess or socket formed on the under side of the free end of arm M, as indicated in dotted lines, Fig. 3, so that when the arm M is adjusted by means of the slots T, T′ the free end will swing upon a center accurately on the bisecting line.

The saw guides will of course with advantage be placed a considerable distance apart—the farther the more accurate will be the

cut—and I prefer in order not to unnecessarily increase the weight of the apparatus to permit the outer saw guide O to project beyond the pivot R; and to enable it to be removed when the box is applied to a corner to measure the angle, the arm M is journaled as already described. Thus it may be tilted back as indicated in dotted lines, Fig. 3, when the angle is measured, and the outer edges of the tables C, D may be brought against the sides of the corner.

The slide J is provided with a set-screw P by which it may be locked in position on the rod I.

The arm M is provided with a projection Q which serves as a stop when the kerfs are raised from their normal position to the position indicated in Figs. 1 and 3.

The castings are all preferably formed of malleable iron. The parts B, C, D are pivoted upon an upright post R at the forward end of the miter box. The arm B which carries the work-guide E is mounted so that it may be swung into operative relation to either of the tables C, D, and the ribs on the lower part of these tables are provided with a shoulder, as indicated at S, provided with an inclined side, by which the binding-screw F may firmly lock the arm B in position.

The guides or kerfs for the saw are preferably made in blocks of hard wood which are secured to the casting by screws so that they may be renewed when worn out.

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

1. A miter box comprising two arms, means for adjusting them into contact with the sides of a corner inside or outside to measure its angle, and a saw guide lying on a line bisecting the angle.

2. A miter box comprising two arms adjustable to various angles, a saw guide lying on a line bisecting any angle formed by the arms, and an adjustable work guide adapted to be brought into operative relation to either arm.

3. A miter box comprising two pivoted tables or guides for the work, rigid links connecting said guides with an adjusting slide, means for locking the slide in different positions of adjustment, a pivoted arm provided with a vertical wall adapted to be brought into cooperative relation to either table or guide, and means for locking said arm in position when set upon either guide.

4. A miter box provided with a stock to which are pivoted at the forward end two arms for measuring the angle, rigid links connecting the same with a slide, a rod mounted upon the stock as a guide for the slide, means for locking the slide in various positions of adjustment, and an arm carrying the guides for the saw, said arm normally projecting over the rod, for the purpose described, and adapted to be withdrawn when the angle is being measured.

In testimony whereof I have hereunto subscribed my name this 25th day of October, A. D. 1893.

JOHN JAY GREEN.

Witnesses:
ROBT. H. READ,
E. C. GRIGG.