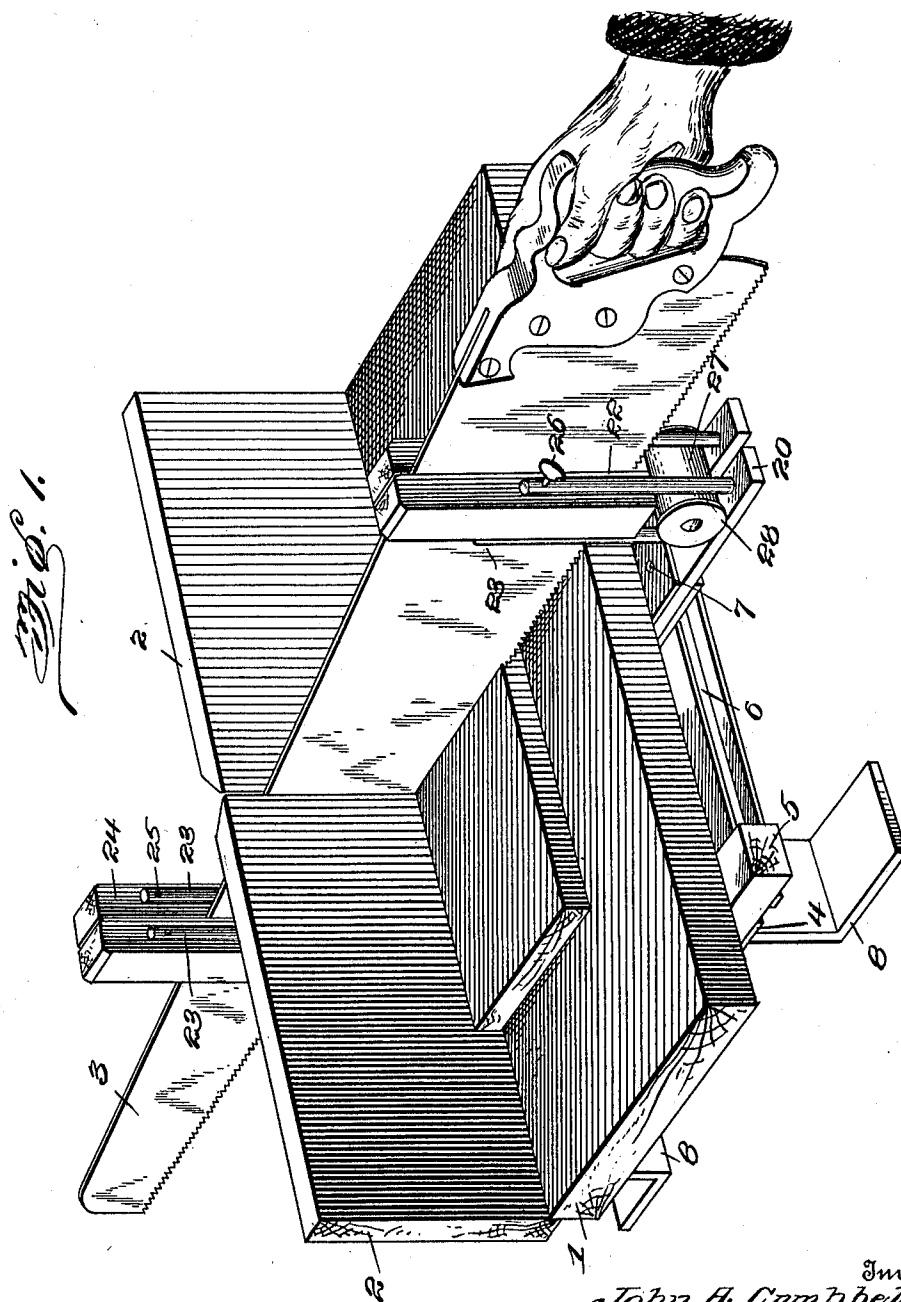


MITER BOX.

Patented May 9, 1911.

3 SHEETS—SHEET 1.

991,947.



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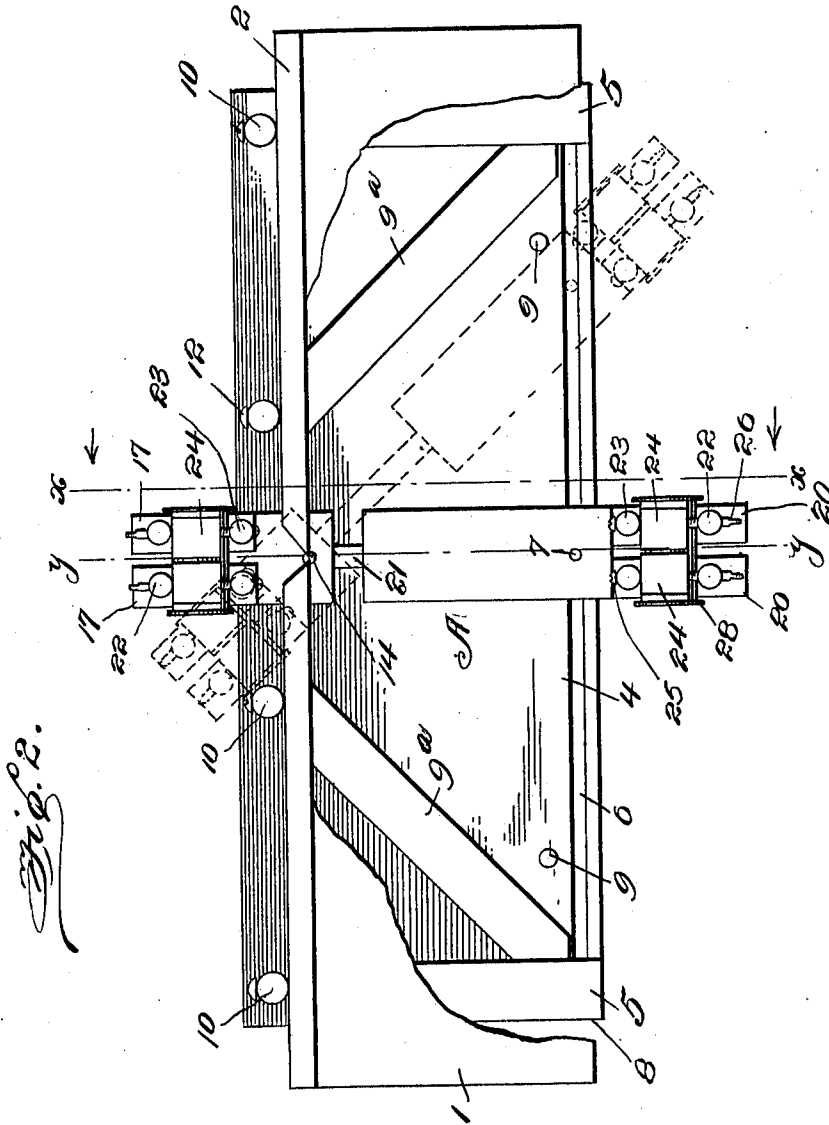
MITER BOX.

APPLICATION FILED AUG. 3, 1909.

Patented May 9, 1911.

3 SHEETS-SHEET 2.

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3 SHEETS—SHEET 3.

Fig. 3.

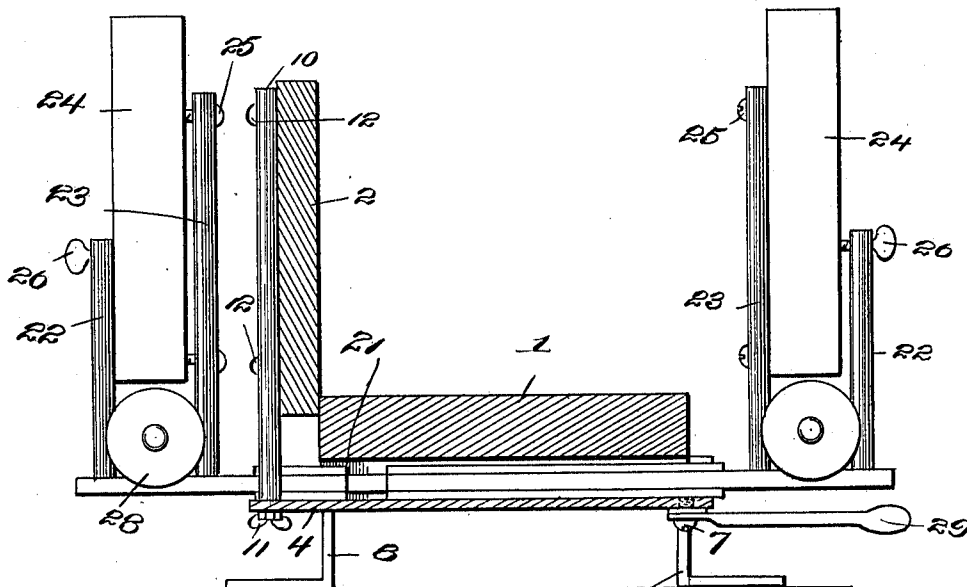
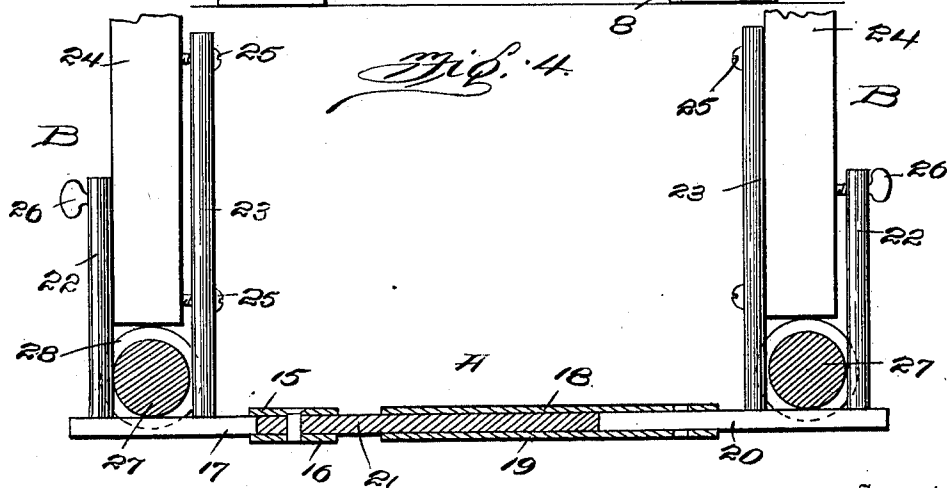


Fig. 4.



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MITER-BOX.

991,947.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed August 3, 1909. Serial No. 510,996.

To all whom it may concern:

Be it known that I, JOHN A. CAMPBELL, a citizen of the United States, residing at 231 Savin Hill avenue, Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Miter-Boxes, of which the following is a specification.

The purpose of the present invention is the provision of a miter box of novel formation, which may be readily adjusted with relation to any angle and which, when not required for immediate use, may be taken apart and reduced to a compact form to be conveniently stored in a box or other place, so as not to take up any very great amount of room.

A further purpose of the invention is to devise a miter box in which the parts susceptible to wear may be easily and economically replaced, and which will prevent injury either to the teeth or to the blade of the saw, the wearing parts being preferably of wood and adapted to be secured to the metal supports by machine screws, bolts or other fastenings, admitting of the parts being detached and easily replaced.

The invention also has for its object to supply a box which will admit of the usual carpenter's hand saw being effectively and advantageously used, and which will admit of the distance between the saw guides being varied according to the relative position of the saw guide, as a whole.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings and pointed out in the appended claims.

Referring to the drawings, forming a part of the specification:—Figure 1 is a perspective view of a miter box, constructed in accordance with and embodying the essential features of the invention. Fig. 2 is a top plan view of the miter box, a portion of the bottom being broken away, and the dotted lines showing the adjusted position of the saw guide. Fig. 3 is a transverse section on the line $x-x$ of Fig. 2, looking in the direction of the arrows. Fig. 4 is a transverse section on the line $y-y$ of Fig. 2.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The miter box comprises a bottom 1 and a wall 2, the latter being arranged at one side of the bottom and turning vertically therefrom, and having a cut intermediate of its ends for the passage of the saw 3. The bottom 1 and the wall 2 may be of any material, wood being preferred because of its cheapness and its lightness. Beneath the bottom 1 is located a plate 4, said plate being spaced from the bottom by means of strips 5. The plate 4 is preferably of metal, because of the strength and rigidity required to support the sustaining parts. A longitudinal slot 6 is provided in the plate 4 near its outer or front edge and forms a guide to receive the fastenings 7, by means of which the saw guide is held in the required adjusted position. The plate 4 is elevated a distance to prevent the fastening means cooperating therewith from resting upon the bench, table or other support, upon which the miter box may be placed when in use. Legs 8 are applied to opposite ends of the plate 4 to support the same in elevated position, and may be of any construction best adapted for the purpose, according to the finish of the box. Stops 9 are secured to the plate 4 and, as shown, consist of screws although any means may be provided which will attain the same result, namely, to limit the extreme movement of the saw guide, when adjusted, to an angle of 45 degrees. Rods 10 are secured at their lower ends to the rear portion of the plate 4 and support the wall 2. The lower ends of the rods 10 are reduced and threaded and forced into corresponding threaded openings formed in the plate 4, and their projecting ends receive thumb nuts 11. It is not absolutely necessary to thread the lower ends of the rods 10 into the plate 4, since the shoulders, at the bases of the reduced parts, form stops which engage the upper side of the plate 4, the thumb nuts 11, when screwed home upon the projecting threaded ends, serving to clamp the rods in place. Screws or fastenings 12 serve to connect the wall 2 to the rods or posts 10, thereby admitting of the wall 2 being easily replaced, when required.

The saw guide is pivoted to the miter box at 14, in line with the vertical cut in the wall 2. The saw guide comprises an arm A and guides B and is mounted so as to be adjustable to any relative angle that may be required. The arm A is extensible,

to be lengthened or shortened as indicated by the further and dotted lines in Fig. 2. When the saw guide is moved to a position at a right angle to the length of the box, the arm A may be shortened when the saw guide is moved to an angular position as indicated by the dotted lines in Fig. 2, the arm A is required to be lengthened. The rear section of the arm A comprises upper and lower plates 15 and 16 and spaced bars 17, the latter being secured between the plates 15 and 16. The front section of the arm A comprises upper and lower plates 18 and 19 and spaced bars 20, the latter being secured between the plates 18 and 19. A bar 21, secured at one end between the plates 15 and 16, is adapted to operate in the space formed between the plates 18 and 19 and the bars 20, thereby admitting of the arm A being lengthened or shortened. A pair of posts 22 and 23 are secured to the outer ends of each of the bars 17 and 20 and receives between them wooden strips or blocks 24, which are spaced apart a distance corresponding to the thickness of the saw blade, to admit of the latter having free movement without any appreciable lateral play. The posts 23 are located upon the inner side and are longer than the other posts 22, this being deemed necessary in order to provide a firm support for the wooden strips or blocks 24. The posts 22 and 23 may be secured at their lower ends in any substantial way to the respective bars. In the preferred construction, the posts are reduced and threaded and screwed into threaded openings in the bars, thereby admitting of the posts being removed when required for any purpose. The wooden strips or blocks 24 are secured between the posts of the respective pairs by suitable fastenings, such as machine screws 25 and thumb screws 26, the latter being threaded into the upper ends of the outer posts 22. It is to be understood that the projecting end of each bar 17 and 20 is provided with a pair of posts 22 and 23, and the wooden block or strip 24. The roller 27 is mounted upon the projecting ends of the bars 17 and 20 and is retained in place by the pairs of posts and the strips or blocks 24. The rollers 27 extend across the space formed between the bars 17 or 20 and the strips or blocks 24 and serve to limit the movement of the saw, after the latter has completed the cut. The diameter of the rollers 27 is such as to arrest the downward movement of the saw, when the work has been completely cut through, thereby preventing the cutting of the bottom 1. End pieces 28 are fitted to the rollers 27 and serve to retain the latter in place, by engaging with the bars and the posts extending upward therefrom.

The arm A of the saw guide is arranged

to operate in the space formed between the bottom 1 and the plate 4, and is of a length to admit of the saw guides being located beyond the longitudinal edges of the box or bottom 1. When the saw guide is moved to the desired position, it is made secure by a fastening 7 which may be operated in any manner and, for convenience, a lever 29 is provided and extends outward so as to be easily reached for loosening or tightening the fastening 7, as may be required. The fastening 7 is adapted to operate in the slot 6, hence it will be understood that the arm A lengthens or shortens without moving the same about the pivot fastening 14. When the saw guide is adjusted, the movement of the lever 29 serves to secure the same, as will be readily understood.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Strips 9^a are interposed between the bottom 1 and the plate 4 to supplement the action of the strips 5 and to strengthen the parts 1 and 4. It is observed that the strips or blocks 24 are designed to be placed in position between the posts 22 and 23 by means of a gage, thereby insuring accuracy when in place.

I claim:—

1. A miter box having a bottom and a back portion, and a pivoted saw carrier thereon, said saw carrier having renewable wood posts at its ends forming saw guides, said posts being square in cross-section and removably mounted on fixed pins on the saw carrier, and with stop means on the saw carrier to prevent the turning of the posts.

2. In a miter box, the combination of a support pairs of posts extending vertically from said support, saw guides secured between the posts of each pair and having their lower ends spaced from the support, and a roller mounted upon the support and retained in place by the pairs of posts and the said guides.

3. In combination with a miter box, a pair of transversely spaced bars, a pair of posts for each of the bars, a roller mounted upon the bars between the pairs of posts and saw guides secured between the upper ends of the posts of each pair and serving to retain said roller in position.

4. In combination with a miter box comprising a bottom and a back wall, a saw guide pivoted to the bottom and comprising pairs of upper and lower plates, pairs of
5 bars secured between said plates, saw guides supported upon the outer ends of said bars, and a single bar secured between one set of upper and lower plates and operating in the space formed between the upper and lower plates of the other set and between 10 the said bars secured thereto.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. CAMPBELL.

Witnesses:

HORATIO ALDEN ANDREWS,
MARY H. ANDREWS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
