

J. G. WORTHAM.
MITER BOX.

APPLICATION FILED NOV. 30, 1910.

1,003,310.

Patented Sept. 12, 1911.

3 SHEETS—SHEET 1.

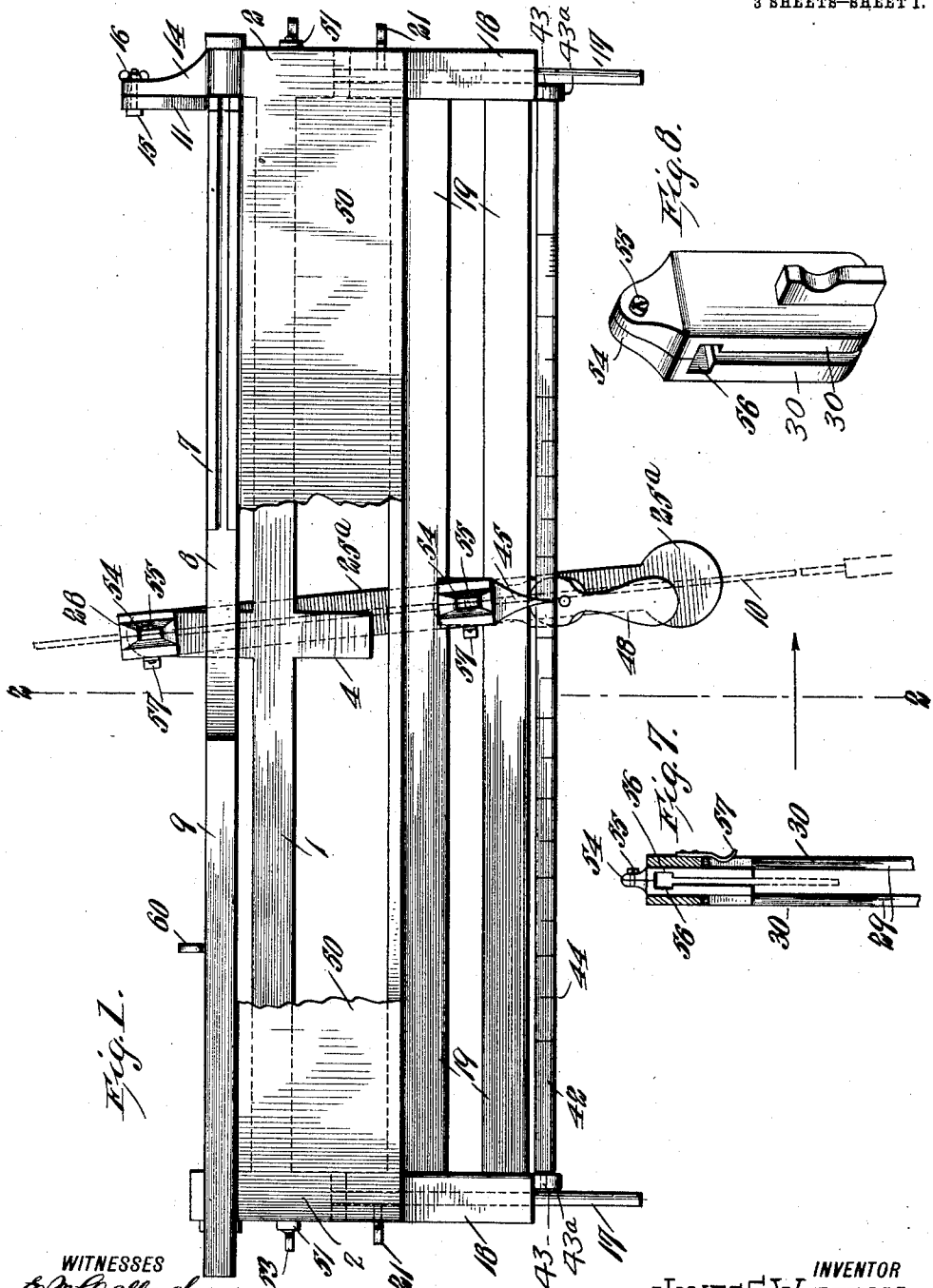


Fig. 1.

Fig. 8.

Fig. 7.

WITNESSES
C. M. Callaghan
C. E. Travis

INVENTOR
JAMES G. WORTHAM
BY *Munn & Co.*

ATTORNEYS

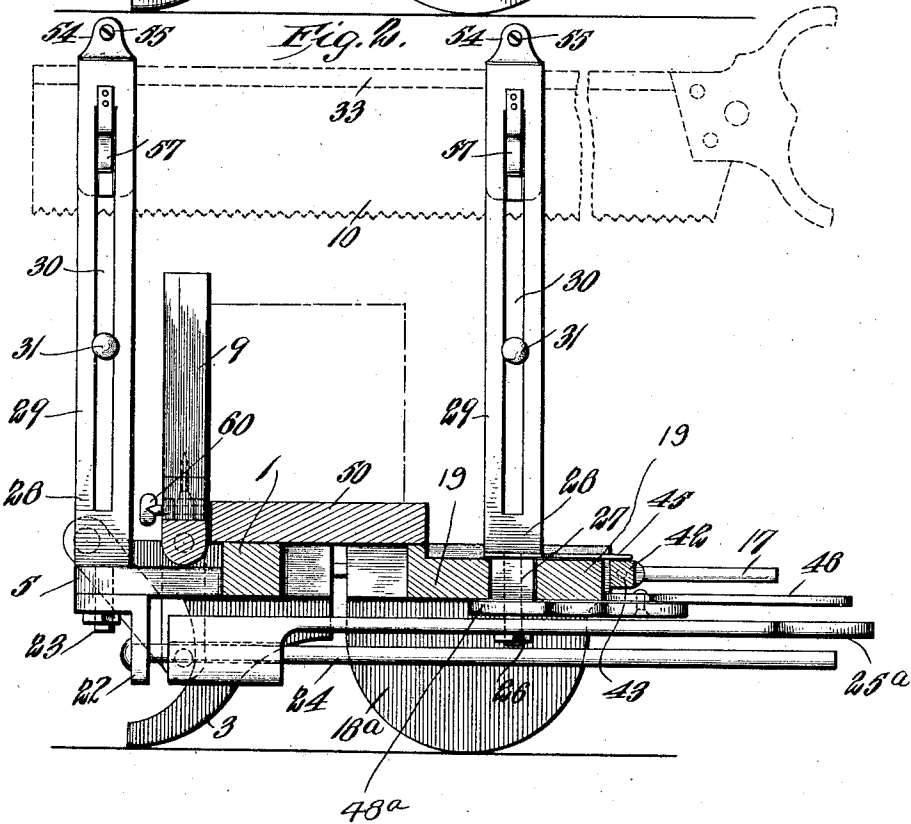
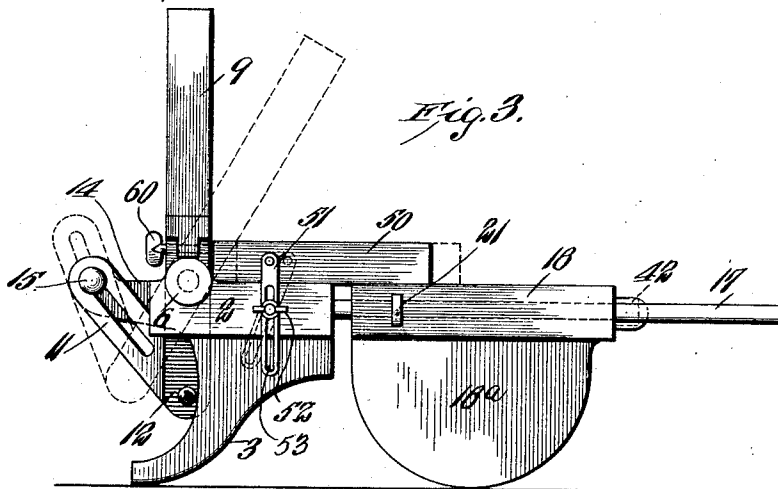
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3 SHEETS—SHEET 2.



WITNESSES
E. A. Callaghan
C. E. P. am or

INVENTOR
JAMES G. WORTHAM
BY *Munnich*

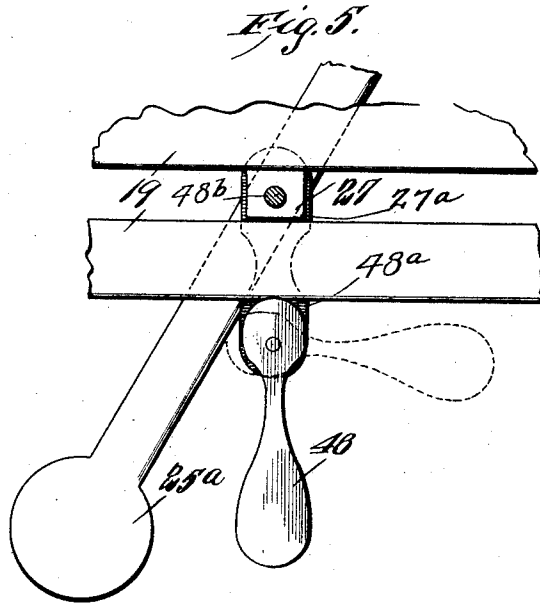
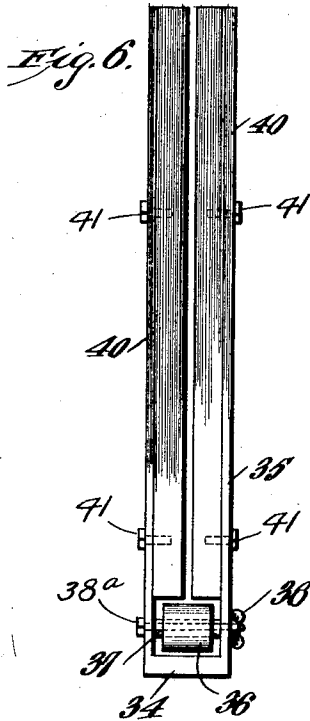
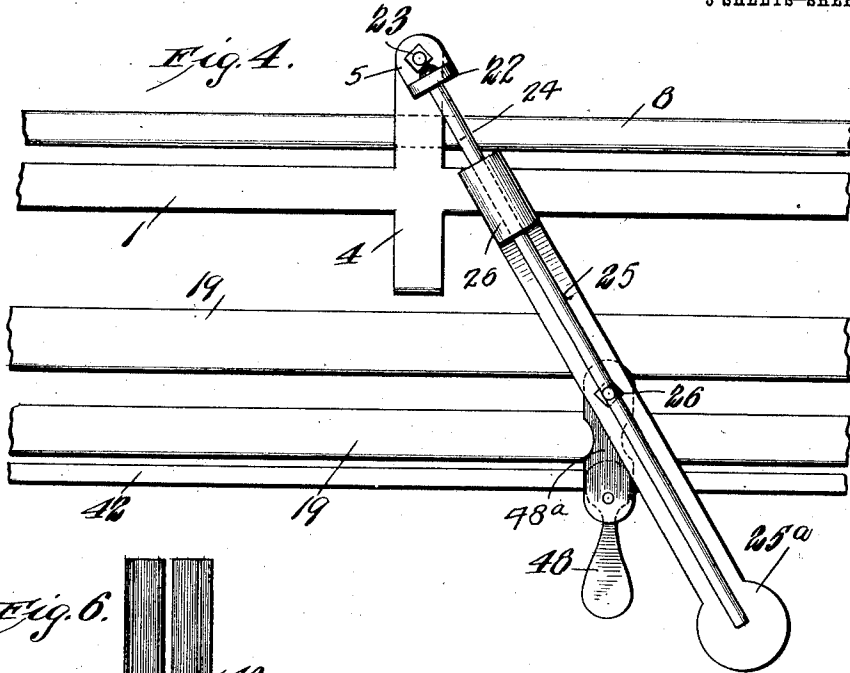
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3 SHEETS—SHEET 3.



WITNESSES
E. A. Callaghan
C. E. Frazer

INVENTOR
 JAMES G. WORTHAM
 BY *Mum & Co.*
 ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES GARFIELD WORTHAM, OF TULLAHOMA, TENNESSEE.

MITER-BOX.

1,003,310.

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Application filed November 30, 1910. Serial No. 594,876.

To all whom it may concern:

Be it known that I, JAMES G. WORTHAM, a citizen of the United States, residing at Tullahoma, in the county of Coffee and State of Tennessee, have made certain new and useful Improvements in Miter-Boxes, of which the following is a specification.

My invention is an improvement in miter boxes, and consists in certain novel constructions, and combination of parts, hereinafter described and claimed.

The object of the invention is to provide a miter box, consisting of a bed, which may be widened or narrowed to conform with the dimensions of the work, a swinging arm supporting and carrying the saw guide, and capable of being lengthened and shortened, to correspond with the positions of the bed sections, and an adjustable back, together with a scale for indicating the angles assumed by the arm.

Referring to the drawings forming a part thereof Figure 1 is a plan view of the improved box, Fig. 2 is a section on the line 2-2 of Fig. 1, Fig. 3 is an end view, Fig. 4 is a bottom plan view of the swinging arm and the connections, Fig. 5 is a partial top plan view of the arm, Fig. 6 is a front view of one form of saw guide, Fig. 7 is a partial longitudinal section of the other form of guide, and Fig. 8 is a perspective view of a portion of the same.

The embodiment of the invention shown in the drawings, consists of a base bar 1, having at each end a cross head 2, provided with a foot 3. The base bar is also provided at its center with a cross head 4, and the rear end of the said cross head is provided with a vertical bearing 5. Each of the cross heads 2 is provided in its rear end with a transverse bearing, all of the bearings being in alinement, and a bar 6 is provided with rounded portions journaled in the bearings. The bar 6 is provided in its upper face with guideways 7, one at each end and in alinement, and the adjacent ends of the guideways are spaced apart as at 8. A plate 9 is slidable in each of the guideways, the two plates forming the rear wall of the box, and the saw 10 is received between their adjacent ends, the space between the plates having at approximately its center the cross head 4. The bar is revoluble in the bearings, and is retained in its adjusted position by means of a slotted link 11, pivoted by one end to a depending integral

arm 12 on the bar, the slot registering with an opening in an arm 14 extending rearwardly from the adjacent cross head, and a bolt 15, is passed through the slot and the opening and is engaged by a wing nut 16. The base bar is provided at its ends with forwardly extending rods 17, upon which are slidable sleeves 18, having at their outer ends feet 18^a and connected with the ends of longitudinal bars 19, the bars and sleeves forming a frame, which is one section of the other wall of the box, the other section consisting of the base bar and cross heads, and the sections are movable toward and from each other, the whole constituting an expansible and contractible wall, or bed for the box. Each of the rods is rigidly connected with the front end of the adjacent cross head, and the sleeves are retained in adjusted position by set screws 21, which traverse the sleeves and engage the rods. A bracket 22 is pivoted in the vertical bearing of the rear extension from the central cross head, by means of a bolt 23, and a rod 24 extends forwardly from the bracket. An arm 25 is provided with a sleeve slidable on the rod and the free end of the arm is provided with a handle 25^a. A screw 26 passes through the outer section of the arm, and extends upwardly between two of the longitudinal bars, and a block 27 is journaled on the screw and arranged slidably between the bars, the upper face of the block having superimposed thereon a pointer 45 for a purpose to be presently described, and a saw guide to be also presently described, is engaged by the free end of the screw. A cam lever 48 is pivoted to the outer end of a bar 48^a, whose inner end is pivoted to a support 27, and the cam portion of the lever is adapted to engage the front face of a longitudinal bar 19 to lock the arm 25 in its adjusted position. A saw guide is pivoted to the outer section of the arm, on the vertical axis 27, the guide shown in Fig. 2 comprising a base 28, and upright parallel standards 29 spaced apart from each other, to secure the saw there-between. Each standard is longitudinally slotted as shown at 30, and a bolt 31 is arranged in each slot, the bolt forming a stop for a purpose to be presently described, and adjustable in the slots.

The above described form or guide is for use with stiff back saws, that is for saws provided with a reinforcing bar 33 on their

backs, and the said bar engages the stops to limit the depth of the saw cut.

For use with flexible saws, the construction shown in Fig. 6 is made use of. The said guide comprises a base 34 which may be pivoted to the swinging arm in the same manner as the base 28, and parallel spaced longitudinally slotted standards 35 extend upwardly from the base. A roller 36 is journaled on a sleeve 37, arranged between the standards, and a bolt 38^a passes through openings in the standards and the sleeve, and is provided on its threaded end with a nut 38. By tightening the nut the standards are clamped between the ends of the sleeve and the nut and bolt head respectively, but the sleeve is of greater length than the roller, so that the said roller is free to rotate, regardless of the clamping action on the sleeve. A pair of arms 40 are secured adjustably on the inner faces of the standards by screws 41, and the saw is secured therebetween, they forming a guide for the saw. By adjusting the roller in the longitudinal slots, the depth of the saw cut may be varied. A bar 42 square in cross section, and provided with rounded ends 43, has its said ends journaled in bearings 43^a in the outer ends of the sleeves, and upon each face of the bar is a degree scale 44, and the pointer 45, before mentioned, coöperates with the scale. The scale indicates the angle of the arm or saw, to a transverse line perpendicular to the scale, and a plurality of scales is provided for the different positions assumed by the outer section of the bed with respect to the inner. The bar is rotatable in the bearings, thus permitting any of the scales to be brought into coöperative relation with the pointer.

It will be evident from the description, that the bed of the box, composed by the sections of the wall may be widened or narrowed to conform with the dimensions of the work, and that the rear wall of the box, or back, may be adjusted from the perpendicular to any required angle with respect to the bed, by loosening the wing nut and rocking the bar 6.

The swinging arm which carries the saw guide also lengthens and shortens, to correspond with the width of the bed, and a scale is provided for a plurality of positions assumed by the sections of the bed with respect to each other. The sections of the rear wall of the box are adjustable toward and from each other and are retained in adjusted positions by set screws 60. The swinging arm consists of two sections, a fixed section pivoted to the fixed section of the bed, and a movable section movable with the movable section of the bed. A plate 50 rests upon the base bar 1, and one of the longitudinal bars 19, and to each end thereof is pivoted one end of a link 51, having a lon-

gitudinal slot 53, which is engaged by a set screw 52, threaded into the cross head 2. When the back of the box is tilted, the set screws are loosened, so that the plate may follow the movement of the back.

The arms 30 before mentioned, are each provided with a lug 54, through which passes a bolt 55 for securing the arms together, and each arm is provided on its inner face with a transverse recess 56 in which is received the reinforcing bar 33 of the saw. A spring hook 57 is connected with the upper end of one of the standards, and is adapted to engage the arms to retain the saw in inoperative position.

I claim—

1. A miter box comprising a bed composed of fixed and movable sections, the fixed section being provided with transversely projecting rods, and the movable section with sleeves sliding on the rods, means for fixing the sections with respect to each other, a bar journaled in the bed at the rear thereof and provided on its upper face with longitudinal alined guideways, means for retaining the bar in adjusted position, plates slidable in the guideways, means for fixing the plates, an arm comprising a fixed section pivoted to the fixed section of the bed at the center thereof, and a movable section having a handle and movable on the fixed section, a saw guide carried by the arm, the movable section of the bed being provided with a longitudinal guideway in which the guide is movable, means for fixing the arm with respect to the movable section, a bar square in cross section journaled on the movable section of the bed and provided on each face with a scale, and a pointer on the arm coöperating with the scales.

2. A miter box comprising a bed composed of fixed and movable sections, the fixed section being provided with transversely projecting rods, and the movable section with sleeves sliding on the rods, means for fixing the sections with respect to each other, a bar journaled on the bed at the rear thereof and provided on its upper face with longitudinal alined guideways, means for retaining the bar in adjusted position, plates slidable in the guideways, means for fixing the plates, an arm comprising a fixed section pivoted to the fixed section of the bed, and a movable section slidable on the fixed section, a saw guide carried by the arm, and a guideway on the movable section of the bed in which the guide is movable.

3. A miter box comprising a bed composed of fixed and movable sections, the fixed section being provided with transversely projecting rods, and the movable section with sleeves sliding on the rods, means for fixing the sections with respect to each other, a bar journaled on the bed at the rear thereof and provided on its upper face with longitudinal

alined guideways, means for retaining the bar in adjusted position, plates slidable in the guideways, means for fixing the plates, an arm comprising a plurality of sections
 5 movable longitudinally of each other pivoted to the fixed section of the bed, and a saw guide carried by the arm.

4. A miter box comprising a bed composed of fixed and movable sections, the fixed section being provided with transversely projecting rods, and the movable section with sleeves sliding on the rods, means for fixing the sections with respect to each other, a bar journaled on the bed at the rear thereof and provided on its upper face with longitudinal
 10 alined guideways, means for retaining the bar in adjusted position, plates slidable in the guideways, means for fixing the plates, a swinging arm pivoted to the fixed section of the bed and provided with a movable sec-
 15
 20

tion moving with the movable section of the bed, and a saw guide on the arm.

5. A miter box comprising a bed composed of fixed and movable sections, the fixed section being provided with transversely projecting rods, and the movable section with sleeves sliding on the rods, means for fixing the sections with respect to each other, a bar journaled on the bed at the rear thereof and provided on its upper face with longitudinal
 25 alined guideways, means for retaining the bar in adjusted position, plates slidable in the guideways, means for fixing the plates, a swinging arm pivoted to the fixed section of the bed, and a saw guide carried by the arm. 35

JAMES GARFIELD WORTHAM.

Witnesses:

F. K. WILLIAMS, Jr.,
 J. F. BOYD.

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