

A. F. SCHADE.

MITER BOX.

APPLICATION FILED JUNE 6, 1912.

1,042,976.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.

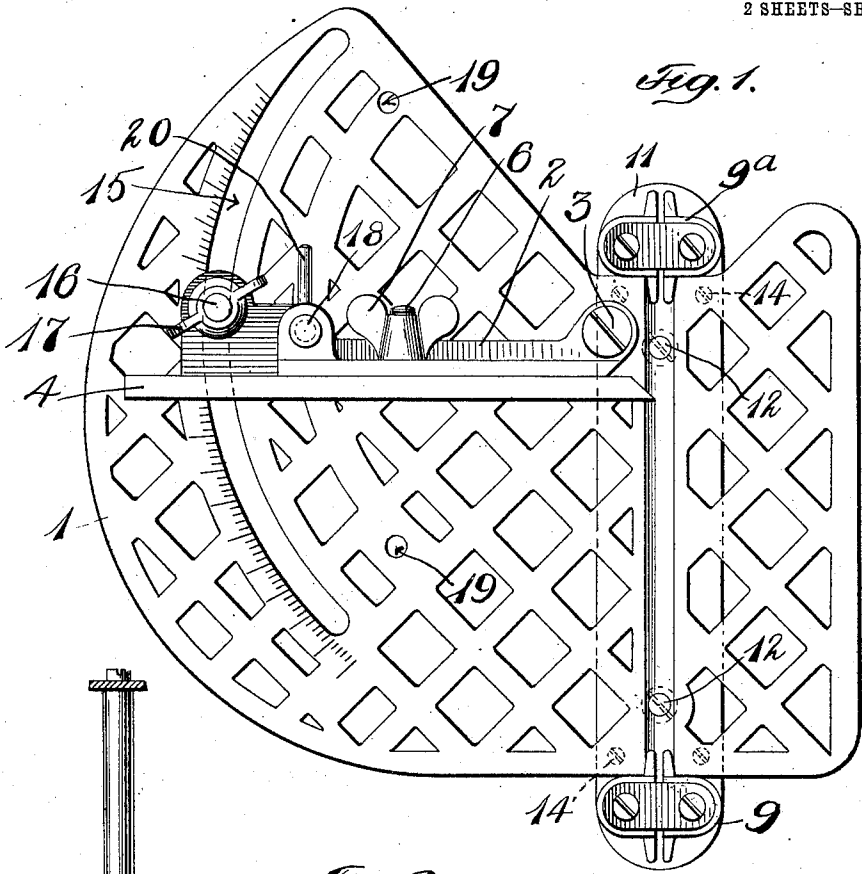


Fig. 1.

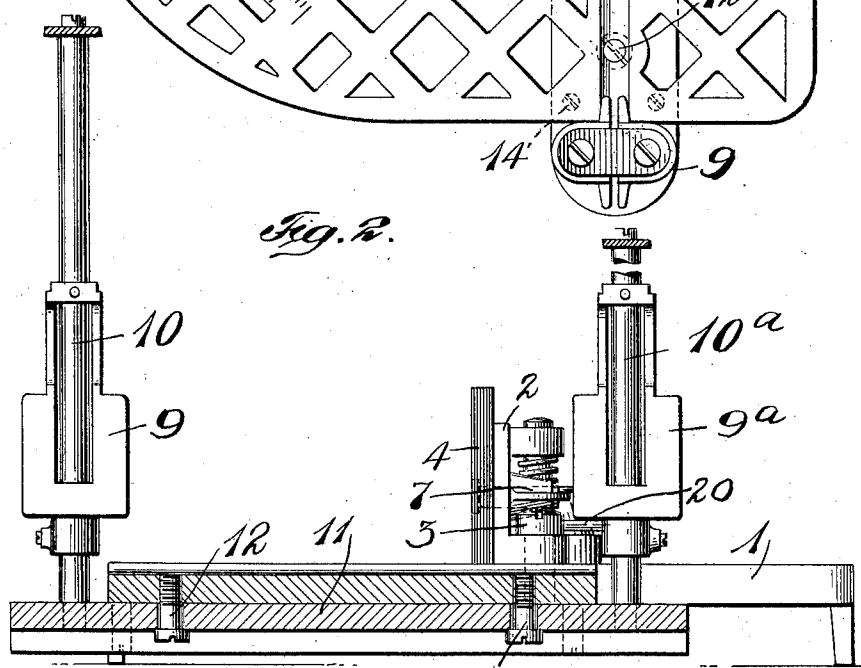


Fig. 2.

WITNESSES:

Chas. Beard
Ida McNeungbert

INVENTOR

A. F. SCHADE

BY

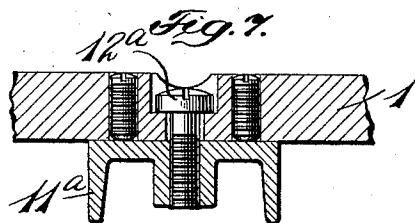
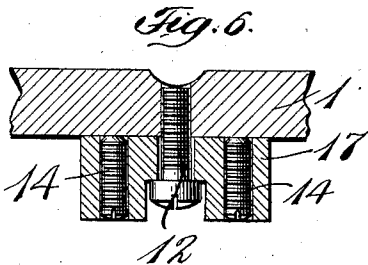
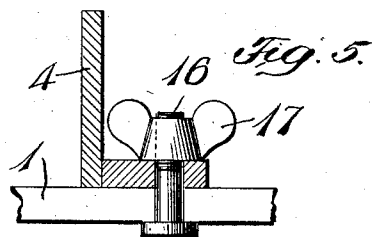
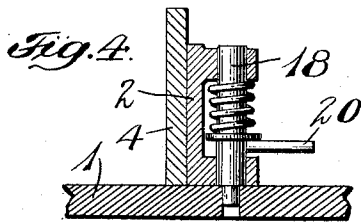
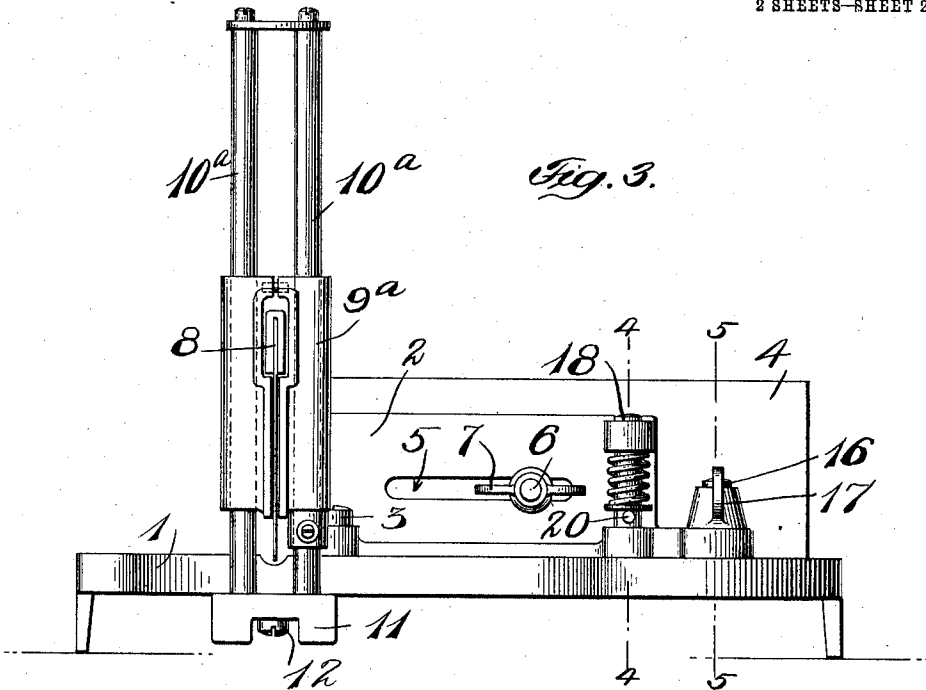
Ramsey Dimes Wheeler
ATTORNEYS

A. F. SCHADE.
 MITER BOX.
 APPLICATION FILED JUNE 6, 1912.

1,042,976.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 2.



WITNESSES:

Chas. A. Baird
Ida M. Nungesser

INVENTOR

A. F. SCHADE

BY

Robert Bruce Mitchell
 ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT F. SCHADE, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE STANLEY
RULE & LEVEL COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF
CONNECTICUT.

MITER-BOX.

1,042,976.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed June 6, 1912. Serial No. 701,958.

To all whom it may concern:

Be it known that I, ALBERT F. SCHADE, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a full, clear, and exact description.

My invention relates to an improved miter box construction, and among the objects of the invention is to provide an exceedingly simple and compact structure in which the adjustment of the various parts is effected in novel and advantageous ways hereinafter described, and in which the miter box back is adjustable not only in its relatively angular position to the saw, but is also adjustable so as to back up the work close to the saw to thereby prevent splintering.

In the foregoing as well as many other respects, the new construction disclosed herein will be found to possess many advantages over the ordinary or conventional miter boxes now in general use and well known.

In the drawings: Figure 1 is a plan view of a complete box, the saw being absent. Fig. 2 is a vertical section on the plane of the line of the saw. Fig. 3 is a rear end elevation of the parts shown in Fig. 1. Fig. 4 is a cross section of a detail on the line 4—4 of Fig. 3. Fig. 5 is another cross section showing another detail, said section being on the line 5—5 of Fig. 3. Fig. 6 is a cross sectional view through certain adjusting devices. Fig. 7 is a similar view of a modification.

1 represents a stationary work table which is preferably made in skeleton form for lightness and to also make it easy to clean the surface whereby the work will rest directly thereon.

2 is a frame pivoted to the work table at 3, said frame constituting a swinging support for the back 4 which acts as a guide or rest for the work and positions it at the desired angle relative to the line of saw cut, which angle is determined by the adjustment of the frame. The back 4 is secured to the back frame 2 in such a manner that it may be adjusted horizontally of the table and longitudinally of the frame. In the preferred construction, the swinging frame 2 is provided with a longitudinal slot 5 to

receive a bolt 6 which may be provided with a clamping wing nut 7. The bolt 6 is suitably connected to the back 4 so that by loosening the wing nut 7, the back 4 may be adjusted as aforesaid to the proper position and there locked by screwing up on the said wing nut. Suitable means is provided to lock the back frame 2, and hence back 4, at various angular positions relatively to the cutting line of the saw, which will be fully described later.

An end elevation of the saw is indicated in position at 8, Fig. 3. This saw 8, in its preferred form, is mounted in two sliding carriers 9—9^a, which carriers slide up and down on guide posts 10—10^a. The guide posts 10^a are mounted at the front and back of the box upon a supporting bar 11 which extends horizontally under the box so as to be out of the way. This guide post supporting bar 11 is connected to the under side of the table 1 in any suitable way, as by screws 12—12 (Figs. 1, 2 and 6), which screws may pass up through the bar 11 and screw into threaded holes in the under side of the table 1, or the position of said screws may be reversed, as shown in Fig. 7, in which 12^a represents the screw which passes freely down through a counterbored opening in the table and screws into the bar 11^a.

To correct any slight manufacturing inaccuracy and to guarantee the absolutely correct positioning of the saw guide posts 10—10^a, I provide at or near each end of the bar 11 suitable adjusting means, for example, as shown in Fig. 6, in which 14—14 represent adjusting screws arranged on each side of the clamping screw 12 and threaded in suitable passages in the bar 11. By moving one or the other, or both, of these screws longitudinally, the vertical angular position of the bar 11 relative to the work table may be adjusted so that the saw guide posts 10—10^a will assume a position perpendicular to a plane represented by the supporting face of the table 1. This adjustment is to counteract or adjust a saw that "runs." If desired, these adjusting screws 14—14 may be carried by the table 1, as shown in Fig. 7, instead of by the bar 11, as shown in Fig. 6.

For side or lateral adjustment of one end or the other, or both, of the bar 11, I provide suitable means which, in the particular instance shown in the drawings, may com-

prise widening the passage in the bar 11 through which the screw 12 passes so that before the screw 12 is clamped down on the bar 11, the correct side position of said bar may be determined, in which position it will be held as soon as the screw 12 is screwed tightly home. In Fig. 7 it is the passage in the table 1 through which the screw 12^a passes that is slightly enlarged to give suitable side play to the bar 11^a for the purposes of adjustment. The range of adjustment which it is desirable to provide need be but a small fraction of an inch, because the parts, as produced, may be made with such care as to guard against everything but slight variations which are sometimes bound to occur even in spite of the greatest manufacturing precaution.

It is understood, of course, that the saw 8 moves in the carriers 9—9^a transversely of the work table and has a definite line of transverse cut determined by the relative position of the bar 11 to the table 1.

The preferred means for holding the back 4 at the desired angle relatively to the cutting angle of the saw is such as will enable the user to secure any desired adjustment within the full range of the instrument. Such an adjustment may be secured by such means as illustrated in Fig. 1 in which 15 represents an arc-shaped slot having the center of its radius coincident with the pivot 3. The back frame 2 is provided with a clamping screw 16 having a wing nut 17, said clamping screw passing through the slot 15 as well as through a part of the frame 2, so that by screwing down the wing nut 17, the back frame 2 may be clamped at any angle. The edge of the slot 15 may be provided with a graduated scale to facilitate setting the back 4 at any desired angle. In conjunction with this form of adjustment, I have provided means whereby the back 2 may be quickly positioned and automatically locked at such angles as are most commonly used. One convenient means for securing this quick positioning and automatic locking of the back comprises a spring pressed plunger or latch 18 carried by the back frame 2 and pressing toward the table 1, in the surface of which may be holes 19—19 positioned to receive the end of the plunger, as shown in Fig. 4, and lock the back at a plurality of definite points representing the most commonly used angles of cut. A handle 20 may be provided on the plunger or latch 18, said handle being of any suitable form to facilitate withdrawing said plunger to unlock the back frame so as to permit the back to be shifted to another angle marked by one of the other holes 19. The arc-shaped slot 15 and clamping screw 16 may be utilized to position the back 2 at any intermediate angle or at angles other than those automatically secured through

the spring pressed plunger 18 and holes 19—19, these latter means rendering it unnecessary to use the slot 15 and screw 16 for such standard or commonly used angles.

When the back frame 2 has been set at the proper angle, it may prove that the end of the back 4, which is adjacent to the cutting plane of the saw, either projects across said plane or is located too remote from that plane. If that is found to be the fact, the operator merely releases the wing nuts 7 and shifts the back 4 horizontally until its end adjacent to the saw is correctly positioned so as to support the work close up to the saw cut, thus preventing all danger of splintering.

What I claim is:

1. In a device of the character described, in combination, a stationary work table, a saw guiding frame mounted thereon and extending transversely thereof and adapted to guide a saw along a line of definite transverse cut, and means for laterally adjusting one end of said frame independently of the other end relative to said table, to adjust the angle of transverse saw-cut and a work positioning guide mounted on said base adjacent said saw guiding frame.

2. In a device of the character described, in combination, a stationary work table, a frame secured to the under side and extending transversely thereof, saw guides carried by and extending from said frame and adapted to guide a saw along a line of definite transverse cut, means for effecting vertical adjustment of one end of said frame independently of the other end relative to said table, and a work positioning guide mounted on said base adjacent said saw guides.

3. In a device of the character described, in combination, a stationary work table, a frame secured to the under side and extending transversely thereof, saw guiding means carried at the ends of said frame and adapted to guide a saw along a line of definite transverse cut, means for effecting lateral and vertical adjustment of one end of said frame independent of the other end relative to said table, and a work positioning guide mounted on said base adjacent said saw guiding frame.

4. In a device of the character described, in combination, a stationary work table, a saw guiding frame carried thereby comprising a supporting bar extending transversely of and beneath said table and secured thereto, standards supported by said bar adjacent each end thereof extending above said table, and saw-guides slidably mounted on said standards; a work guide mounted on said table; and means cooperating with said bar and table adapted to permit lateral adjustment of one end of said bar and its associated parts independent of the other end

relative to said stationary table and to fixedly maintain said parts in their adjusted position.

5. In a device of the character described, in combination, a stationary work table; a saw-guiding frame carried thereby comprising a supporting bar secured to and extending transversely of and beneath said stationary table, standards supported by said bar adjacent each end thereof extending above said table, saw-guides slidably mounted on said standards, a work guide mounted on said table; means cooperating with said bar and table adapted to permit lateral adjustment of one end of said bar and its associated parts independent of the other end relative to said table and adapted to clamp said parts in such laterally adjusted position; and means whereby one end of said bar may be moved vertically independent of the other end relative to said table and may be fixedly held in vertically adjusted position.

6. In a device of the character described, in combination, a stationary work table, a saw-guiding frame carried thereby adapted to guide a saw along a line of definite transverse cut, a frame pivotally mounted on said table and swinging relative to the line of transverse saw cut, a work positioning guide secured to and extending longitudinally of said frame and longitudinally adjustable thereon, a latch carried by said frame, and a plurality of locking apertures formed in said stationary table and extending in the arc of movement of said latch when said frame and guide is swung on its pivot, said locking apertures cooperating with said latch and being engaged thereby to position said frame and guide in a plurality of definite angular positions relative to the line of saw cut.

7. In a device of the character described, in combination, a stationary work table, a saw guiding frame carried thereby adapted to guide a saw along a line of definite transverse cut, a frame pivotally mounted on said table and swinging relative to the line of transverse saw cut, a work positioning guide secured to and extending longitudinally of said frame and longitudinally adjustable thereon, a spring pressed plunger carried by said frame, a plurality of locking apertures formed in said stationary table and extending in the arc of movement of said plunger when said frame is swung on its pivot, said locking apertures cooperating with said plunger and being automatically engaged thereby to position said frame in a plurality of standard angular positions relative to the line of saw cut, and manually con-

trolled means cooperating with said frame and table for effecting other angular adjustments of said guide.

8. In a device of the character described, in combination, a stationary work table, a saw guiding frame carried thereby adapted to guide a saw along a line of definite transverse cut, a frame pivotally mounted on said table and swinging relative to the line of transverse saw cut, a work positioning guide secured to and extending longitudinally of said frame and longitudinally adjustable thereon, a spring pressed plunger carried by said frame, a plurality of locking apertures formed in said table and extending in the arc of movement of said plunger when said frame is swung on its pivot, said locking apertures cooperating with said plunger and being automatically engaged thereby to position said work guide in a plurality of standard angular positions relative to said line of saw cut, and manually controlled means cooperating with said frame and table for effecting intermediate angular adjustments of said guide, said means comprising an arcuate slot in said table, a bolt guided in said slot and carried by said frame, and a clamping nut on said frame engaging said bolt.

9. In a device of the character described, in combination, a stationary work table, a saw guiding frame carried thereby adapted to guide a saw along a line of definite transverse cut, a frame mounted on said table and angularly adjustable relative to the line of transverse saw cut, and a work positioning guide secured to and extending longitudinally of said frame and adjustable longitudinally thereof and relative to the line of saw cut to support and back the work adjacent the line of saw-cut.

10. In a device of the character described, in combination, a stationary work table, a saw guiding frame carried thereby adapted to guide a saw along a line of definite transverse cut, a frame pivotally mounted on said table and swinging relative to the line of transverse saw cut, a work rest secured to and extending longitudinally of said frame and adjustable longitudinally thereof and relative to the line of saw cut, to support and back the work adjacent the line of saw-cut and means cooperating with said table and work guide to position said guide at various definite angles relative to the line of saw cut.

ALBERT F. SCHADE.

Witnesses:

ROBT. M. PARSONS,
I. W. CHAPMAN.