

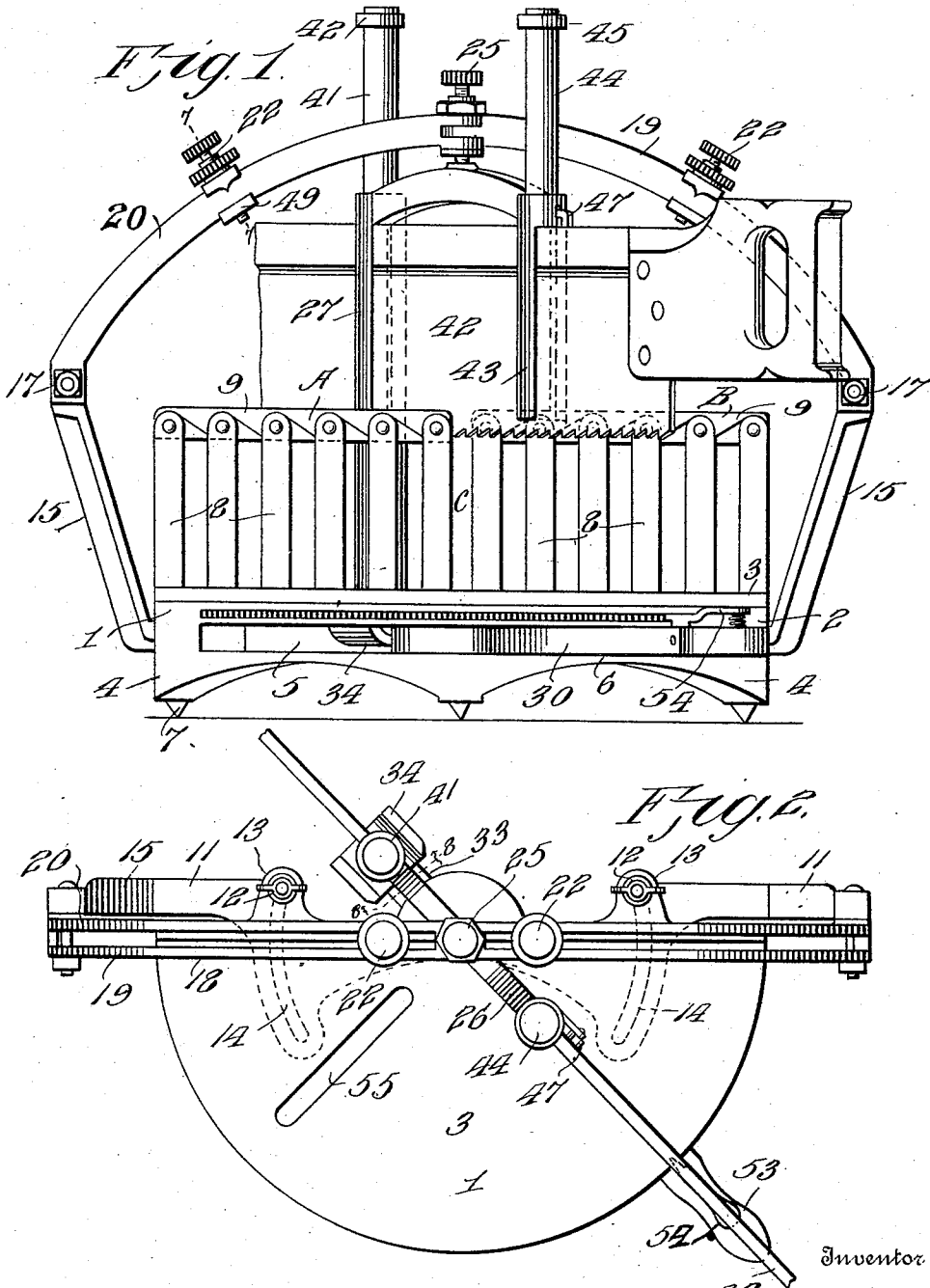
H. L. LOMONT.
MITER BOX.

APPLICATION FILED APR. 29, 1910.

Patented July 29, 1913.

3 SHEETS-SHEET 1.

1,069,018.



Witnesses
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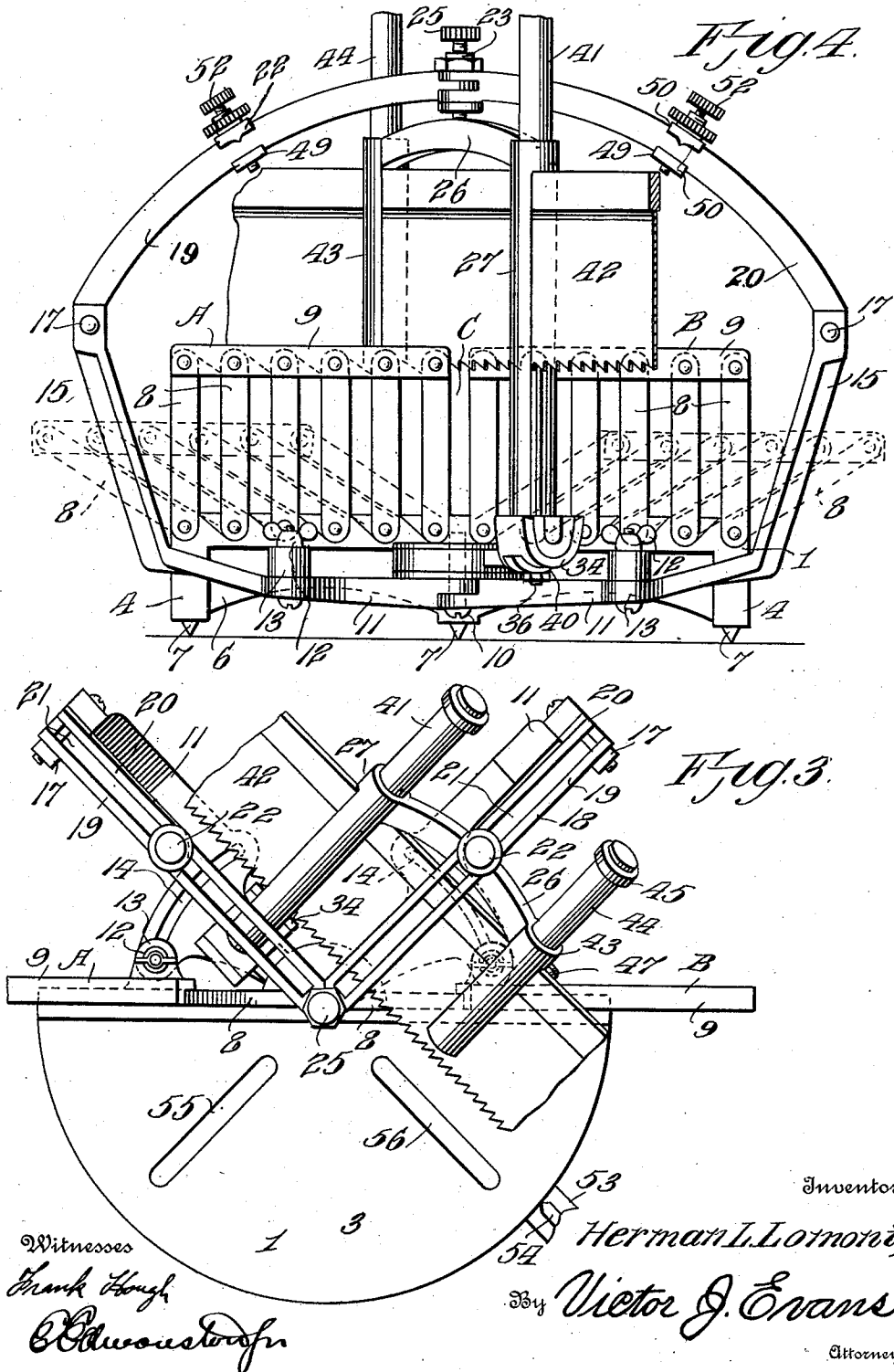
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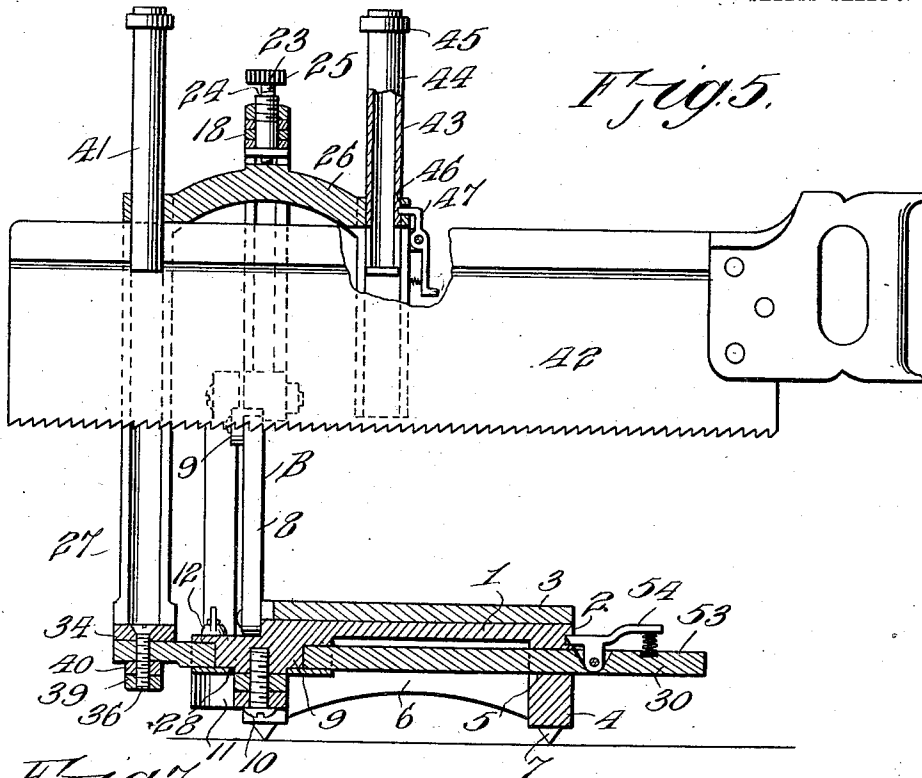


Fig. 5.

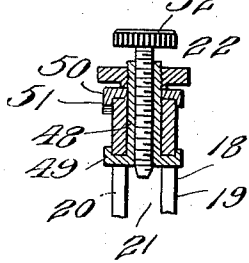


Fig. 6.

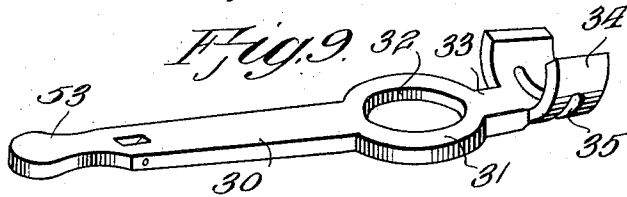


Fig. 7.

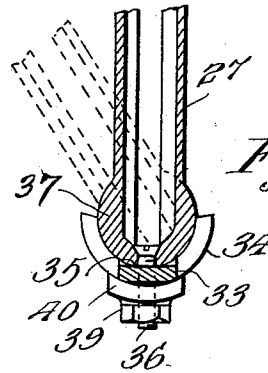


Fig. 8.

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UNITED STATES PATENT OFFICE.

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MITER-BOX.

1,069,018.

Specification of Letters Patent.

Patented July 29, 1913.

Application filed April 29, 1910. Serial No. 558,382.

To all whom it may concern:

Be it known that I, HERMAN L. LOMONT, a citizen of the United States, residing at New Haven, in the county of Allen and State of Indiana, have invented new and useful Improvements in Miter-Boxes, of which the following is a specification.

This invention relates to miter boxes and the object thereof is to provide a box of this character whereby ordinary and complicated miter cuts may be made without entailing the use of complicated mechanism.

A still further object of the invention is the provision of a miter box having means whereby the saw guide may be held in position for an undercut miter and still further means for adjusting the back of the device for any desired cut.

Another object of the invention is the provision of a saw guide having a free swinging end which does not interrupt or restrict the use of different sized material and still further means carried by the free swinging guide for holding the saw in inoperative position and for automatically releasing the same upon an operative movement of the saw.

Further objects of the invention will appear as the specific description which follows is read in connection with the accompanying drawings which form a part of this specification and in which:

Figure 1 is a front elevation showing the box set for a 45° miter cut. Fig. 2 shows a top plan view of the parts in the position shown in Fig. 1. Fig. 3 shows a similar view with the parts arranged for a 45° undercut miter. Fig. 4 is a rear elevation showing in full lines the position of the back for ordinary miter cuts and in dotted lines the position of the back when undercut miters are to be made. Fig. 5 is a central transverse sectional view with the parts shown in position for a square cut. Fig. 6 is a perspective view of one of the arch supporting arms. Fig. 7 is a detail sectional view on the line 7—7 of Fig. 1. Fig. 8 is a detail sectional view on the line 8—8 of Fig. 2, and Fig. 9 is a detail perspective view of the shifting lever.

Referring more especially to the drawings, 1 represents the base of the device, which is semi-circular in form and which comprises a metallic plate 2 and the wood reinforcing therefor, 3. The standard 4 which supports the base is provided with a

slot 5 and its separate feet are connected together at their lower ends by bridge pieces 6. Each separate foot of the standard is provided with a pointed projection 7 which engages the bench or other surface upon which the box is being used. Pivoted to the back of the plate 2 are a series of vertical slats 8 which are pivotally connected at their upper ends by a bar 9 in a manner similar to a parallel ruler whereby the bar 9 will maintain its parallelism with the base at all times. These slats are secured in sets A and B and are separated by a slot C in the center of the machine through which the saw is adapted to pass in making the necessary cuts. In practice, these sections of the back are held in their respective positions by friction at their pivotal point and can assume any of the several positions indicated in Fig. 4 whereby different degrees of undercut miters may be obtained.

In the center of the base adjacent its rear side I provide a depending boss 9' which has a central screw 10 passing therethrough, in order that the arch supporting arms 11 may be pivotally connected to the frame for swinging movement. These arms are supported intermediate their length by set screws 12 mounted in lugs 13 projecting rearwardly from the base and which pass through suitable slots 14 formed in an arc shaped intermediate portion of the arms. The set screws not only support the arms but hold them in adjusted position. The outer positions of the arms 11 project vertically or substantially so as at 15 and in their extremities are provided with apertures 16 to receive the connecting bolts 17 of the arch 18. This arch comprises separate members 19 and 20 both of which are slotted as at 21 to adjustably receive the saw frame holding members 22. The members 19 and 20 are hinged together at a central point by means of a bolt 23 which is provided with a central channel 24 adapted to receive a set screw 25 which is adapted to engage the connecting arm 26 of the saw guiding frame 27. The bolt or set screw 25 acts in the same capacity as do the holding members 22 for square and straight miter cuts.

The lower end of the boss is reduced as at 28 to receive a wear plate upon which the lever 30 is journaled. The lever extends through the slot 5 between the base 1 and the standards 4 and is provided with a cir-

cular enlargement 31 apertured as at 32 to surround the boss 9 and extending rearwardly from this bearing portion is an operating arm 33 on the end of which is formed a semi-circular cup 34 slotted at its bottom as at 35 to receive the connecting bolt 36 carried at the end of the main member of the saw frame 27. The lower end of this main member is formed circular as at 37 to engage the cup 34 and oscillate back and forth as shown by dotted lines in Fig. 8, to position the saw for suitable undercuts. A suitable nut 39 is mounted upon the end of the bolt 36 and a friction plate 40 is arranged between the nut and the cup and fits the latter so that wear may be taken up when necessary.

The saw frame comprises the main member 27 which is slotted throughout its length and of substantially tubular form so as to receive the saw guide 41 in which the saw 42 is adapted to travel. This saw guide is adapted for vertical reciprocation in the member 27 as is usual with such structures and has upon its upper end a limiting collar 42 which prevents the saw from cutting too far into the wooden surfacing 3. The upper end of the member 27 has extending outwardly therefrom the connecting arch 26 which has secured to its outer end and depending therefrom, the opposite member 43 of the saw frame which comprises a structure similar in all respects to the member 27 except that it is considerably shorter, its lower end being on a line with the top of the back. This member 43 also has slidably mounted therein a saw guide 44 which has a stop collar 45 on its upper end to limit its movement and the notch 46 adjacent its lower end which is adapted to be engaged by the spring-pressed pawl 47 carried upon the upper end of the member 43. When the saw 42 is raised to its full height, the pawl 47 will engage the notch 46 and lock the member 44 in elevated position thus holding the saw out of engagement with the work and permitting the operator to use both hands in inserting new work or removing old work. Upon the forward movement of the saw in the guides 41 and 44 the handle engages the pawl and releases the same thus permitting the saw to drop.

Each of the members 22 comprises a hollow bolt 48 which has its head flanged as at 49 to take over the sides of the arch member 18. The upper end of the bolt is threaded to receive a flange washer 50 whose flanges 51 extend over the upper edge of the member 18. A suitable lock nut secures the device in adjusted position and the bolt 52 passes through the bolt 48 and has a pointed arch engaging end to engage the arch 26.

The lever 30 is provided at its extremity with a handle 53 and immediately adjacent the handle is a locking pawl 54 which is

adapted to engage suitable notches in the face of the plate 1 so as to hold the saw frame in adjusted positions. The upper portion of the frame is slotted as at 55 and 56 in order to receive set screws which hold stops (not shown) in adjusted position whereby round work or molding may be secured upon the base in position to be acted upon by the saw.

It will be clearly understood how the saw frame is operated in order to make the ordinary miter cuts or square cuts and it therefore only remains necessary to describe the operation of the machine as regards undercut or complicated miters. When such a cut is desired, the arms of the arch are shifted say to the position shown in Fig. 3, the members of the arch hinge of course upon the bolt 24 so that they occupy a position resembling the outline of the letter V. When in this position, the frame comprising the members 26, 27 and 43 is moved laterally in its pivoted socket 24 until the bolt 52 is in position to engage the lug on the top of the arch 26. The bolt 52 is then screwed into position and the frame held in this diagonal adjustment. Prior to the pivotal shifting of the saw frame, the back is arranged as shown in dotted lines in Fig. 4 and the lever 30 is shifted so as to get the saw frame at the proper angle. When this is accomplished, the set screws 12 are tightened and the box is ready to be used for an undercut miter.

Having thus described the invention, what is claimed is—

1. A miter box comprising a work support, a horizontally movable lever pivoted thereto, a vertically movable saw frame carried by said lever, means to hold the lever in adjusted position, a horizontally swinging frame comprising hinged sections forming an arched body and movable independently of each other, said frame being pivoted to the work support at one of its hinges, and adjustable means slidably mounted upon said frame by which the saw frame may be adjusted in different angular positions.

2. In a miter box, a work support, a horizontally movable lever pivoted to said support, a saw frame comprising a pair of spaced vertically extending members, and an arch rigidly connecting said members, one of the said members being shorter than the other, the other member being pivoted to one end of said lever for oscillation in a vertical plane.

3. A miter box comprising a work support, a horizontally movable lever pivoted thereto, a saw frame comprising a pair of spaced members, one of said members being pivoted to said lever for movement in a vertical plane, an arch connecting said members to support the free member, an arched frame comprising hinged sections pivotally secured to said work support to swing hori-

zontally, and adjustable means carried by said frame for locking engagement with the arch of the saw frame.

4. A miter box comprising a work support, an angularly adjustable saw frame carried by the support, and a pair of back members carried by the support and providing a working slot therebetween, each of said members comprising a plurality of parallel slats pivoted to the rear edge of the support for movement in the vertical plane, and a cross bar pivotally connected to the free ends of said slats.

5. A miter box comprising a work sup-

port, a saw frame carried by the support and adapted to be adjusted angularly, and a pair of collapsible back members adjustably secured to said support and adapted for movement in a vertical plane to provide an angularly adjustable working slot for the saw.

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

HERMAN L. LOMONT.

Witnesses:

CHAS. PALMER,

JESSE KEFFLE.

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