

A. TURNBULL.
MITER BOX.

APPLICATION FILED DEC. 23, 1910.

Patented July 4, 1911.

3 SHEETS-SHEET 2.

997,221.

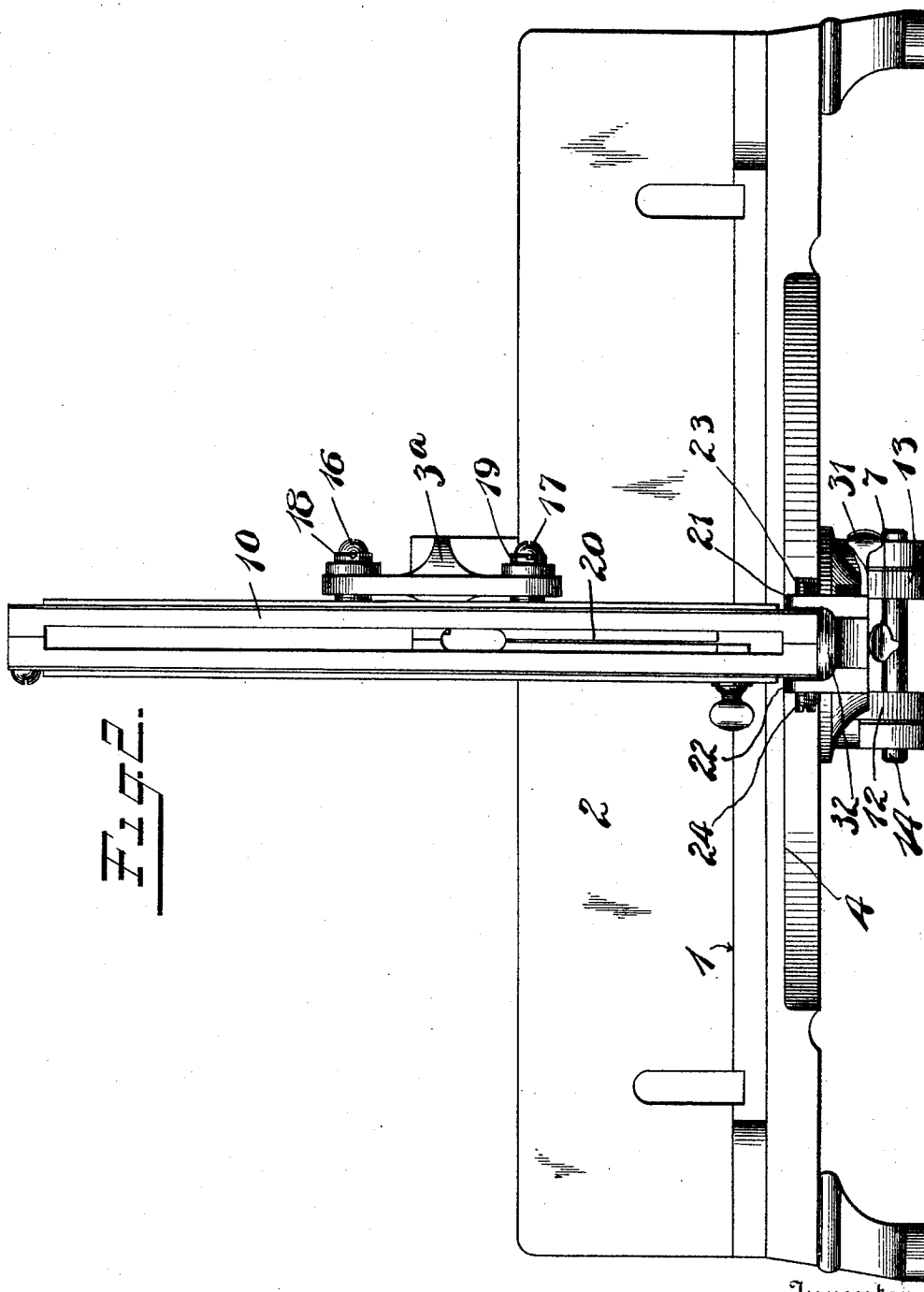


Fig. 2.

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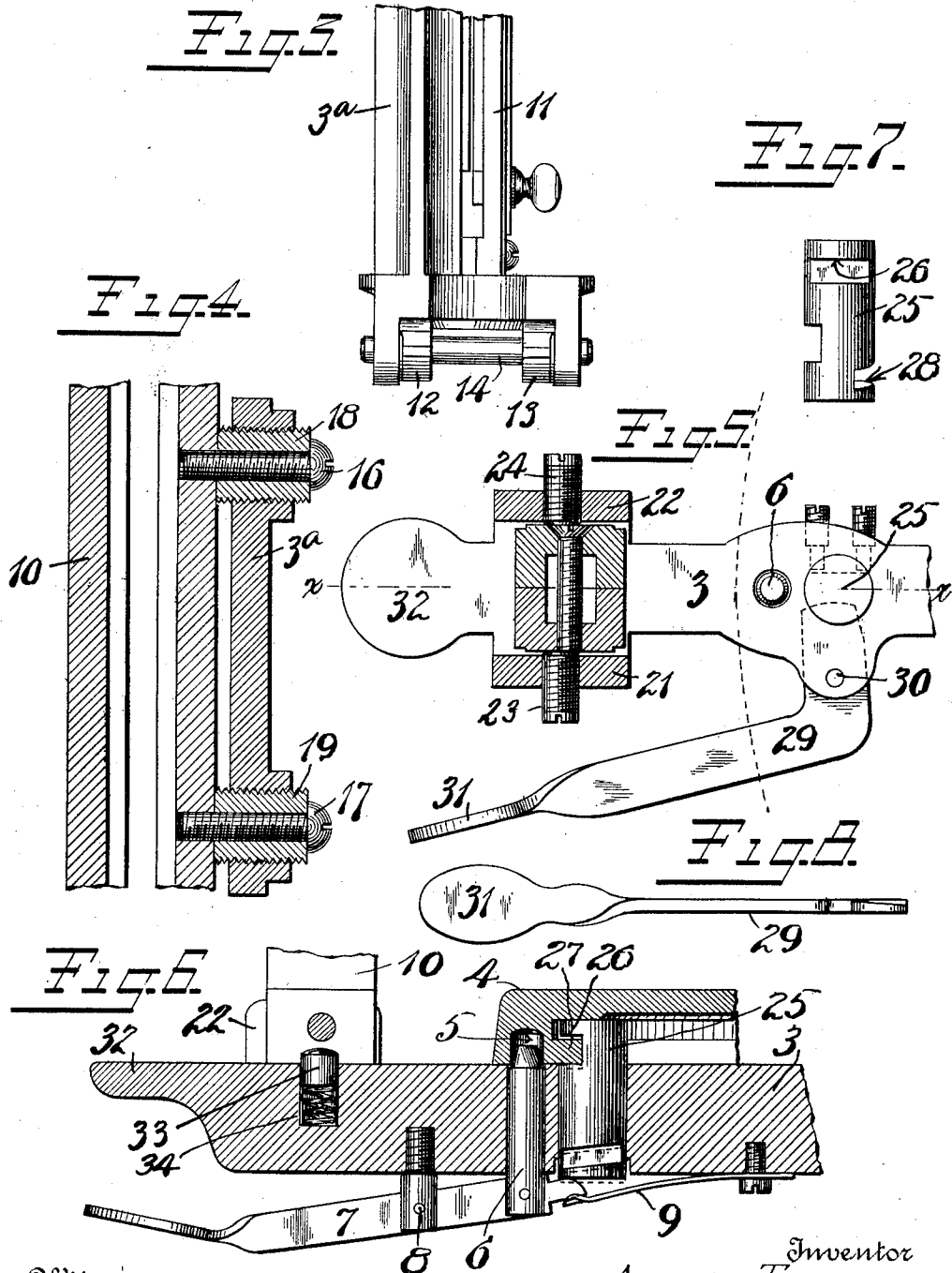
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UNITED STATES PATENT OFFICE.

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MITER-BOX.

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To all whom it may concern:

Be it known that I, ANDREW TURNBULL, 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 improvements in miter boxes, the same having several objects in view, including, among other features, the following:—the provision of an improved saw-carrying device, the provision of simple and effective adjusting means for said saw-carrying device, and the provision of a simple and improved locking device for the saw-carrier frame.

In the accompanying drawings, Figure 1 is an end elevation of a miter box constructed to embody my invention and shown on a relatively reduced scale. Fig. 2 is a front elevation thereof. Fig. 3 is an enlarged rear elevation of certain details. Fig. 4 is a vertical section of part of one of the saw-carriers or guides illustrating details of an adjustment. Fig. 5 is a top plan view, partly in section, of the outer end of the arm carrying the saw-guide, illustrating certain details, including a lock. Fig. 6 is a section of the parts shown in Fig. 5 on the plane of the line $x-x$, Fig. 5. Figs. 7 and 8 are detail views of detached parts.

1 represents the table of a miter box upon which the work to be sawed is placed.

2 represents the back having the usual slot for the saw (not shown).

3 represents a lever arm which carries the saw-guides, said lever being pivoted centrally with the slot in the back 2 in the usual manner, whereby said arm may be swung at different angles relatively to the back so that the desired cutting angle may be obtained.

At the front of the box is an arc-shaped scale 4 concentric with the pivotal mounting of the arm 3. This arc-shaped scale 4 may have the usual graduations (not shown). On the under side of the arc-shaped scale 4 are the usual locking recesses 5 located at suitable spaced intervals.

6 is a bolt which may be projected into the recess 5 to hold the arm 3.

7 is a finger lever pivoted at 8 and suitably engaged with the bolt 6 and spring-pressed as by a spring 9, said parts being arranged whereby the spring 9 operates to hold the

bolt in the locking position, the latter being capable of being withdrawn by the lever 7.

Thus far described parts are well known. The improvements in the saw-carrier proper will now be described. The saw-carrier comprises two guide members 10—11 carried by a goose neck 3^a, the latter being hinged or pivotally mounted on the rear end of the lever arm 3, said lever arm being extended rearwardly beyond its own pivotal mounting on the main frame of the miter box and there bifurcated to provide the two widely spaced bearings 12—13 to give a solid support for the goose neck. 14 is a pivot for securing the rear bifurcated end of the goose neck 3^a to the bearings 12—13 whereby said goose neck 3^a may be tilted from the position shown in solid lines Fig. 1 to the position shown in dotted lines in said figure to facilitate the placing of the piece to be sawed upon the table. 15 is a stop abutment to limit the rearward rocking of the goose neck 3^a. It will be sufficient to describe the novel method employed in securing one of the saw-guides to the goose neck 3^a, since the same method is employed for both saw-guides 10—11.

Referring particularly to Figs. 2 and 4, it will be seen that the saw-guide 10 is held to the goose neck 3^a by means of two screws 16—17. These screws 16—17 each pass through adjustable bushings 18—19 respectively, which threadably engage offsets from the goose neck 3^a. The inner end of each of the bushings 18—19 serves as an abutment to receive the adjacent side of the guide 10, whereby it will be seen that if the bushing 18 or 19 is moved to or fro in its mounting in the goose neck 3^a, it will shift the abutment end thereof to a corresponding extent in one direction or the other. By shifting these abutment bushings 18—19, the adjustment of the guide 10 can be varied to a nicety. When the desired adjustment is secured, the screws 16—17 may be set up tightly, at once locking the guide 10 to the goose neck 3^a and at the same time so clamping the bushings 18—19 as to prevent dislodgment of the same.

Each saw-guide comprises a slotted upright member, the slot being usually occupied by a secondary slide member 20 which may move up and down with, and which slide has a slotted passage which approximately fits the cross-section of, the saw.

The lower end of the forward saw-guide 10, when the same is in operative position, rests between two abutments 21—22 on the arm 3, which are preferably provided with adjustment screws 23—24 respectively, which
5 may be readily shifted to guarantee a proper slide support for the lower end of the guide 10 in any of its various positions of adjustment effected through the medium of the
10 abutment bushings 18—19 previously referred to.

Should it be desired to lock the arm 3 at some other angle than that provided for by the predetermined positioning of the recesses 5, for example, at some point between
15 any two of said recesses, the bolt 6 could not be relied upon to effectively perform that function, consequently, I provide a supplemental friction locking bolt 25 carried
20 by the arm 3, which bolt has an overhanging portion 26 which stands above an inwardly directed arc-shaped ledge 27. The draw bolt 25 has an inclined recess 28 in one side which provides a cam shoulder or
25 wedge incline. Projecting into this recess is the end of a bell-crank lever 29 pivoted at 30 and provided with a finger engageable handle 31 conveniently located adjacent to the outer gripping end 32 of the arm 3.
30 When, as above suggested, it is desired to locate the arm at an angle in which the bolt 6 will stand between any two locking recesses 5, it is possible for the operator to securely lock said arm in said position by
35 means of the bolt 25, it being possible to draw the same down into tight engagement with the ledge 27 by means of the bell-crank lever 29, the finger pressible end 31 thereof being at such time drawn toward the handle end 32, see Fig. 5. If desired, a buffer
40 may be provided between the abutment shoulders 21—22 to receive and cushion the descent of the guide 10 as the goose neck is swung down. Such a buffer is shown at
45 33, said buffer being supported by a light spring 34 which is not sufficient to lift the guide 10 from its seat, but which is just sufficient to cushion the descent.

What I claim is:

50 1. In a miter box, a horizontal table, a slotted back, an arm pivotally mounted under the table for movement in a horizontal plane, a goose-neck pivotally mounted at the rear of said arm and overhanging said
55 table, two saw-guides carried by said goose-neck, and means for adjusting laterally the upright position of one of said saw-guides relative to said goose-neck.

60 2. In a miter box, a horizontal table, a slotted back, an arm pivotally mounted under the table for movement in a horizontal plane, a goose-neck pivotally mounted at the rear of said arm and overhanging said
65 table, two saw-guides carried by said goose-neck, and means for adjusting laterally the

upright position of both of said saw-guides on said goose-neck independently.

3. In a miter box, a horizontal table, a slotted vertical back, an arm pivotally mounted under the table for a horizontal
70 swinging movement, a goose-neck pivotally connected to said arm at or near its rear end, a stop for limiting the rearward swinging movement of said goose-neck, two saw-guides carried by said goose-neck and ad-
75 justable relatively thereto, an adjustment for one of said saw-guides comprising a bushing threadably connected with part of said goose-neck, and a screw passing through
80 said bushing and threadably connected with said saw-guide.

4. In a miter box, a horizontal table, a slotted back, an arm pivotally mounted under the table for movement in a horizontal
85 plane, a goose-neck pivotally mounted at the rear of said arm and overhanging said table, two saw-guides carried by said goose-neck, and means for adjusting laterally the upright position of one of said saw-guides,
90 and a buffer at the forward end of said arm for receiving the lower end of the forward saw-guide.

5. In a miter box, a horizontal table, a slotted vertical back, an arm pivotally mounted under the table and adapted to
95 swing in a horizontal plane, saw-guides operatively connected to said arm, an arc-shaped member at the front of said table, the arc of said member being concentric with the pivot for said arm, an arc-shaped
100 ledge on the under side of said arc-shaped member, a bolt carried by said arm and extending over said ledge, an inclined slot in said bolt and means comprising a bell-crank
105 lever operating in said slot for manually operating said bolt to draw it into engagement with said ledge to lock said arm, independent means of adjustment for one of said guides to vary its upright position.

6. In a miter box, a horizontal table, a
110 slotted vertical back, an arm pivotally mounted under the table and adapted to swing in a horizontal plane, saw-guides operatively connected to said arm, an arc-shaped member at the front of said table,
115 said arc being concentric with the pivot for said arm, an arc-shaped ledge on the under side of said arc-shaped member, a bolt carried by said arm and extending over said ledge, and having an inclined shoulder and
120 means for manually operating said bolt to draw it into engagement with said ledge to lock said arm, said bolt-operating means comprising a lever pivotally mounted on
125 said arm and bearing on said shoulder.

7. In a miter box, a horizontal table, a slotted back, an arm pivotally mounted under the table for movement in a horizontal
130 plane, a goose-neck pivotally mounted at the rear of said arm and overhanging said

table, two saw-guides carried by said goose-neck, means for adjusting the upright position of both of said saw-guides independently, and adjustable abutment devices on the forward part of said arm arranged to stand on opposite sides of the lower end of the forward saw-guide.

8. In a miter box, a horizontal table, a slotted back, an arm pivotally mounted under the table for movement in a horizontal plane, a goose-neck pivotally mounted at the rear of said arm and overhanging said table, two saw-guides carried by said goose-

neck, means for adjusting the upright position of both of said saw-guides independently, and adjustable abutment devices on the forward part of said arm arranged to stand on opposite sides of the lower end of the forward saw-guide, said abutment devices including oppositely facing horizontally arranged screws.

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