

No. 770,834.

PATENTED SEPT. 27, 1904.

J. A. TRAUT.
MITER BOX.

APPLICATION FILED APR. 24, 1903.

2 SHEETS—SHEET 1.

NO MODEL.

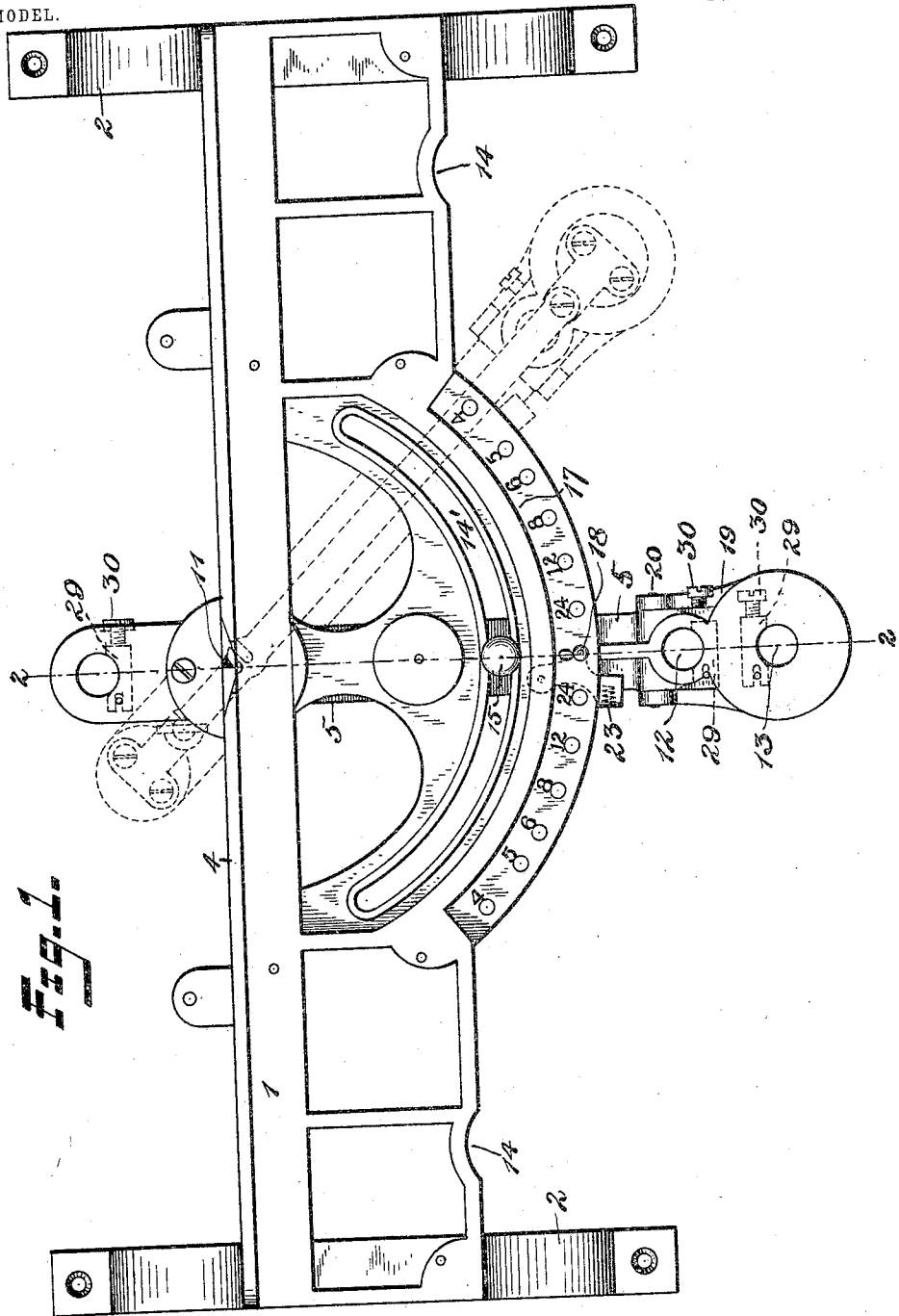


Fig. 1.

WITNESSES:

Geo. V. Rasmussen
Robt. S. Allen

INVENTOR

JUSTUS A. TRAUT

BY

R. A. Rasmussen

ATTY

No. 770,834.

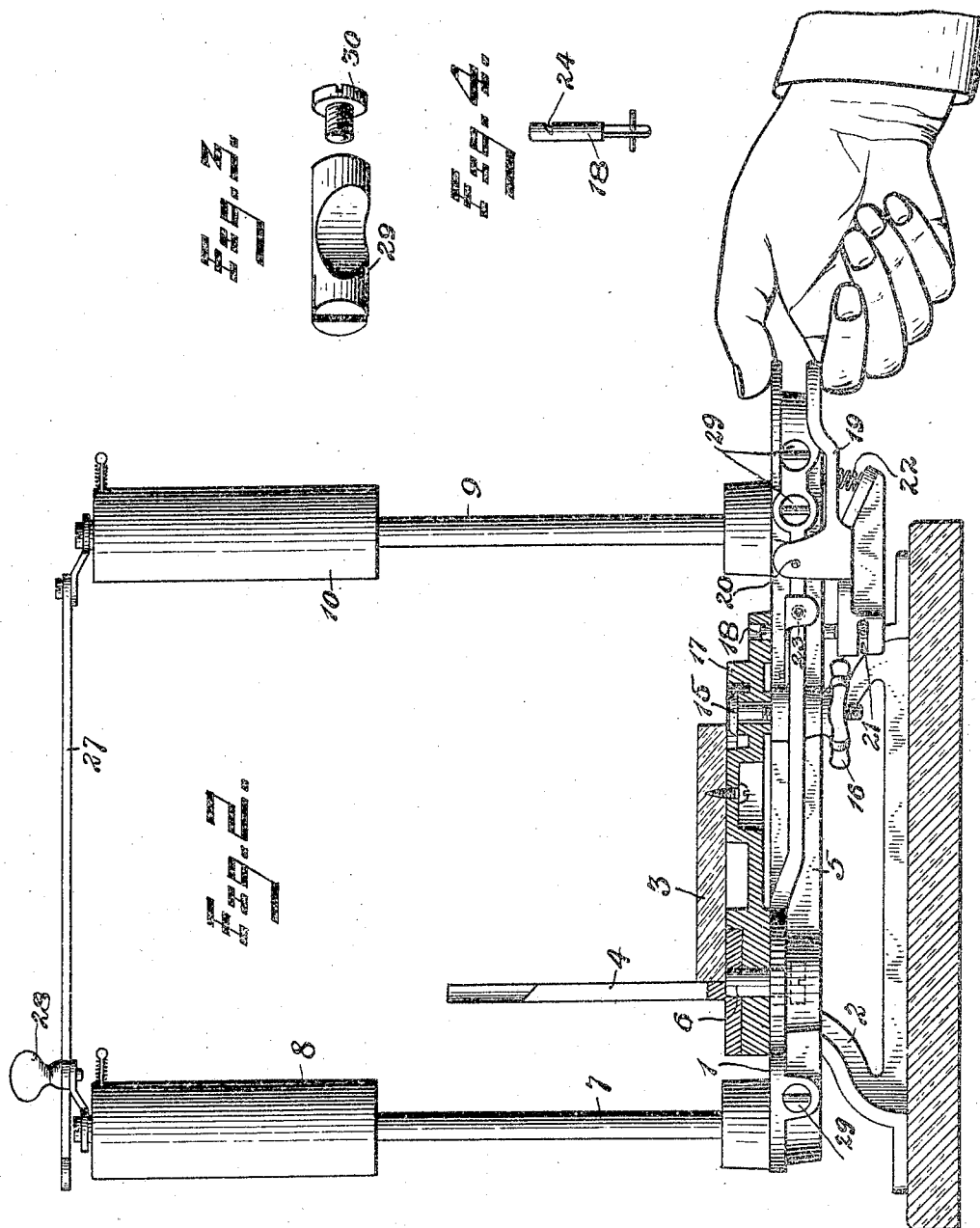
PATENTED SEPT. 27, 1904.

J. A. TRAUT.
MITER BOX.

APPLICATION FILED APR. 24, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

Geo. V. Rasmussen
J. R. S. Allen

INVENTOR

JUSTUS A. TRAUT
BY
R. R. S. Allen
ATTORNEY

UNITED STATES PATENT OFFICE.

JUSTUS A. TRAUT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE STANLEY RULE & LEVEL COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 770,834, dated September 27, 1904.

Application filed April 24, 1903. Serial No. 154,051. (No model.)

To all whom it may concern:

Be it known that I, JUSTUS A. TRAUT, a citizen of the United States, residing at New Britain, Hartford county, 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 miter-boxes.

In the accompanying drawings, Figure 1 is a plan view of the frame and other portions of a miter-box, certain parts being removed for the purpose of illustration. Fig. 2 is a side elevation, partly in section, taken on the line 2 2 of Fig. 1. Figs. 3 and 4 are illustrative of details of construction.

1 is the main frame or body. 2 2 are suitable legs therefor. 3 is a table mounted on frame 1. 4 is a back. These parts may be arranged substantially as in the ordinary miter-box.

5 is a swinging arm pivoted to the frame, as at 6.

7 is a rear saw-guide suitably mounted on the rear end of the arm 5.

8 is the saw-carrier, which is slidably mounted on the guide 7.

9 is a saw-guide arranged to be carried near the front end of the arm 5, and 10 is a saw-carrier carried by the guide 9.

The back 4 is provided with a saw slot or passage 11, Fig. 1. The rear saw-guide 7 is ordinarily stepped at the same place on the rear of the arm 4; but the front saw-guide 9 is arranged to be stepped in different positions. To that end, therefore, I provide a plurality of steps 12 13 in the forward part of said swinging arm. To this construction is due an advantage hereinafter mentioned. The frame 4 is preferably notched at 14 14, so that a greater latitude of swing is possible of the arm 5 when the guide 9 is stepped at 13.

15 is a locking-bolt carried by the arm 5 and projecting through a slot 14' in the rack 17. The head of bolt 15 stands above said rack, and the lower end is provided with a set-nut 16. This provides one means for adjusting the swinging arm 5 to any angle. Another

adjustment is provided for locking the arm at predetermined angles. This adjusting mechanism comprises a locking-stud 18, carried by the arm 5 and controlled by means of a peculiarly-formed operating-lever 19. This locking-stud is arranged to take into perforations or notches in the rack 17. These perforations are graduated. The lever 19 is pivoted at 20 to the arm 5. The handle portion of the lever 19 is in the form of a yoke underlying the forward end of the arm 5 and shaped substantially to correspond therewith, so that at whatever angle the arm 5 is set at the user may have ready access to said lever to rock it on its pivot 20 and release the locking-stud 18 from the rack 17. This locking-stud 18 has a pin arranged transversely of it, taking into a slot 21 in the lever 19. This slot permits sufficient freedom of play to prevent binding of the parts.

22 is a spring normally tending to swing the lever 19 in such a way as to throw the locking-stud 18 into any one of the perforations in the rack 17. When the set-nut 16 is loose on the locking-bolt 15, the operator may by moving the lever 19 and withdrawing the locking-stud 18 swing said arm 5 to any one of the angles indicated by the graduations, and at any one of these angles the said arm is automatically locked by releasing said lever 19. The graduated openings are provided to care for all of the angles ordinarily employed in sawing miters. Since it is seldom that a miter is to be made which will not be in keeping with one of said graduations, it will be seen that ordinarily the adjustment is effected by operating the lever 19. Inasmuch as there are some instances wherein a miter of an unusual angle is to be cut, I have provided the secondary locking mechanism previously referred to and by which the arm can be locked at any angle whatever within its full swing. I have provided a means whereby although the locking-stud 18 is normally thrown into the operative position it may be held out of that position mechanically to permit the operator to readily adjust the arm 5

to any angle, usual or unusual, without the necessity of using both hands. This mechanism comprises a latch 23, pivoted on the arm 5. This latch 23 is normally inactive, being held in said inactive position by a light spring. The nose of the latch 23 projects through a groove in the side of that portion of the arm 5 bearing the locking-stud 18. In the side of said stud there is a notch 24, adapted to receive the nose on the locking-lever when the said locking-stud is fully retracted. When the operator presses the lever 19 so as to entirely withdraw the stud 18 from the rack 17, he then may press the locking-latch 23, so that its nose will enter the aforesaid notch in the side of the locking-stud. Upon releasing the lever 19 the spring tends to throw it back, whereupon the side of the notch in said stud frictionally engages the nose of the locking-latch 23, which then holds it out of engagement with said rack 17. The operator is then free to swing the arm to any angle, as before stated, and set it wherever he pleases by means of the bolt 15 and set-nut 16. In the preferred construction I provide a plurality of steps at the forward end of the arm 5 to receive the saw-guide. For example, the saw-guide 9 (shown in Fig. 2) is mounted in the forward step 12. It will be apparant that when so mounted the said saw-guide will encounter and be checked by the frame 1 more quickly than would be the case if the guide 9 were mounted in the step 13. It is most desirable to have the saw-guide 9 as near to the work as possible, since it gives an added steadiness thereto. In case a more acute angle is to be sawed the guide 9 may be stepped at 13.

27 is a coupling-link arranged at the upper ends of the saw-guides 7 and 8 and preferably pivoted to one and perforated or notched so as to be detachably engaged with the other. This is best seen in Fig. 2.

28 is a set-nut by which the user can readily adjust said coupling-link 27. Obviously when the saw-guide 9 is moved from one step 12 or 13 to the other the link 27 must be loosened. When the parts are assembled, the coupling-link 27 aids substantially in steadying the saw-guides, so as to prevent undue vibration and unnecessary friction. In Fig. 3 I have shown a detail of construction by which the saw-guide 9 may be conveniently locked in either step. This means comprises a sliding wedge 29, mounted in a suitable bearing arranged transversely of and intersecting the step 12, the side of the wedge being cut away to correspond with the side of the lower end of the guide 9. When the guide 9 is stepped and the wedge is moved longitudinally, it tends to clamp and bind the saw-guide in place. A screw 30, carried by the arm 5 and bearing against the end of the wedge 29, may operate the latter. A similar wedge device may be

employed for the step 13, as well as for the step in which the saw-guide 7 is mounted.

The many advantages of this box will be apparent to the mechanic skilled in these devices. For example, it has been my purpose to provide a construction which is simple and compact, which provides a large range of action, which facilitates the ready adjustment to the usual or unusual angles, and which makes it possible to have the saw-guides placed as close to the work as practicable, so that the saw may be properly steadied.

What I claim is—

1. In a miter-box, the combination of a rack, an arm pivotally mounted beneath said rack, saw-guides carried by said arm, an operating-lever pivoted to said arm, a pin having a close-fitting guideway in said arm and adapted to coact with a series of recesses in said rack, means of connection between said operating-lever and said pin whereby the operating-lever may have a swinging movement and the pin maintain a reciprocatory movement, means for normally holding said parts so as to lock the arm in place relatively to said rack, frictional clamping means for said arm independent of said pin, and manually-controlled means opposed by a spring for locking said pin in its retracted position when the frictional clamping means is to be operated.

2. In a miter-box, in combination, a frame having a series of recesses on the under side thereof arranged on the arc of a circle, an arm pivotally mounted at the center of said circle, a pin carried by said arm and having a guideway therein, a spring for normally pressing said pin upward, an operative lever pivotally carried by said arm, means of connection between said operating-lever and said pin whereby when said lever is swung on its pivot, said pin will be moved, frictional clamping means for said arm for holding it in positions intermediate the recesses; and manually-controlled means operable when said frictional clamp is being operated for locking said pin in its retracted position and opposed to the action of the spring.

3. In a miter-box, the combination of a frame, an arm pivoted thereto, saw-guides carried by said arm, a pin carried by said arm and having a guideway therein, said pin being adapted to coact with said frame to lock said arm, a frictional clamp, an operating-lever pivoted to said arm having one end projecting forward for manual engagement and the other end projecting to the rear, said rear end having a slotted portion engaging with said pin, a spring for normally holding the parts with the pin engaging said frame, and a swinging lock adapted to engage said pin to hold it retracted from said frame when said clamp is to be operated.

4. In a miter-box the combination of a rack,

an arm pivotally carried thereby, said rack
having a series of recesses therein, a positive
manually-operable bolt-locking device adapt-
ed to coact with the recesses in said rack. for
5 locking said arm in position, frictional means
for locking said arm in position at points in-
termediate said recesses and means for hold-
ing said bolt-locking device out of engagement

with said rack when said friction locking
means is to be actuated. 10

Signed at New Britain, Connecticut, this 3d
day of April, 1903.

JUSTUS A. TRAUT.

Witnesses:

ROBERT N. PECK,
E. G. HOFFMAN.