No. 661,444. Patented Nov. 6, 1900.

J. H. COY.

MITER BOX.

(Application filed May 9, 1900.)

(No Model.) 2 Sheets—Sheet 1.

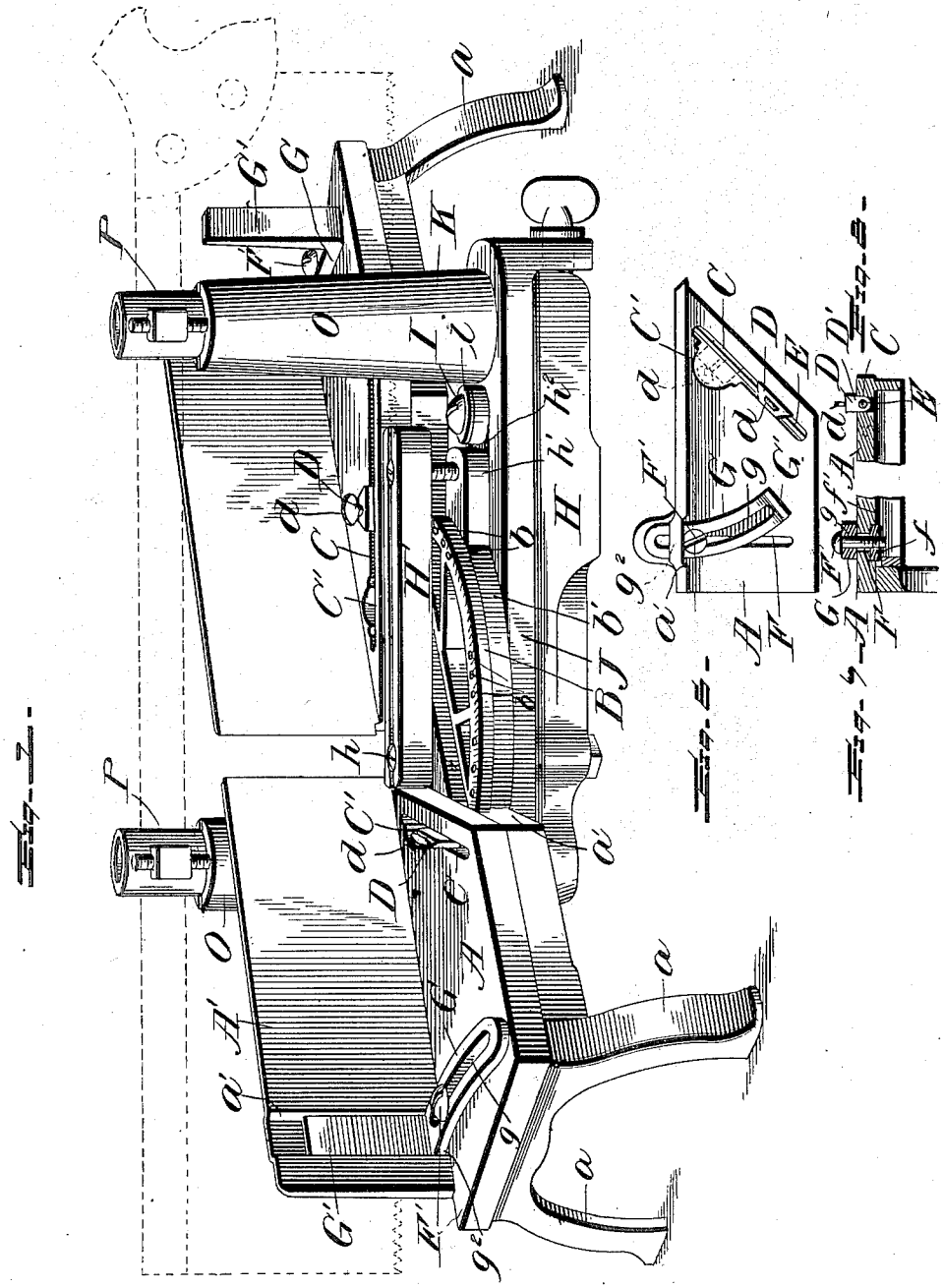


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES:

L. C. Hills.

Chas. L. Wallace.

INVENTOR

John H. Coy

BY Stanton Weaver

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

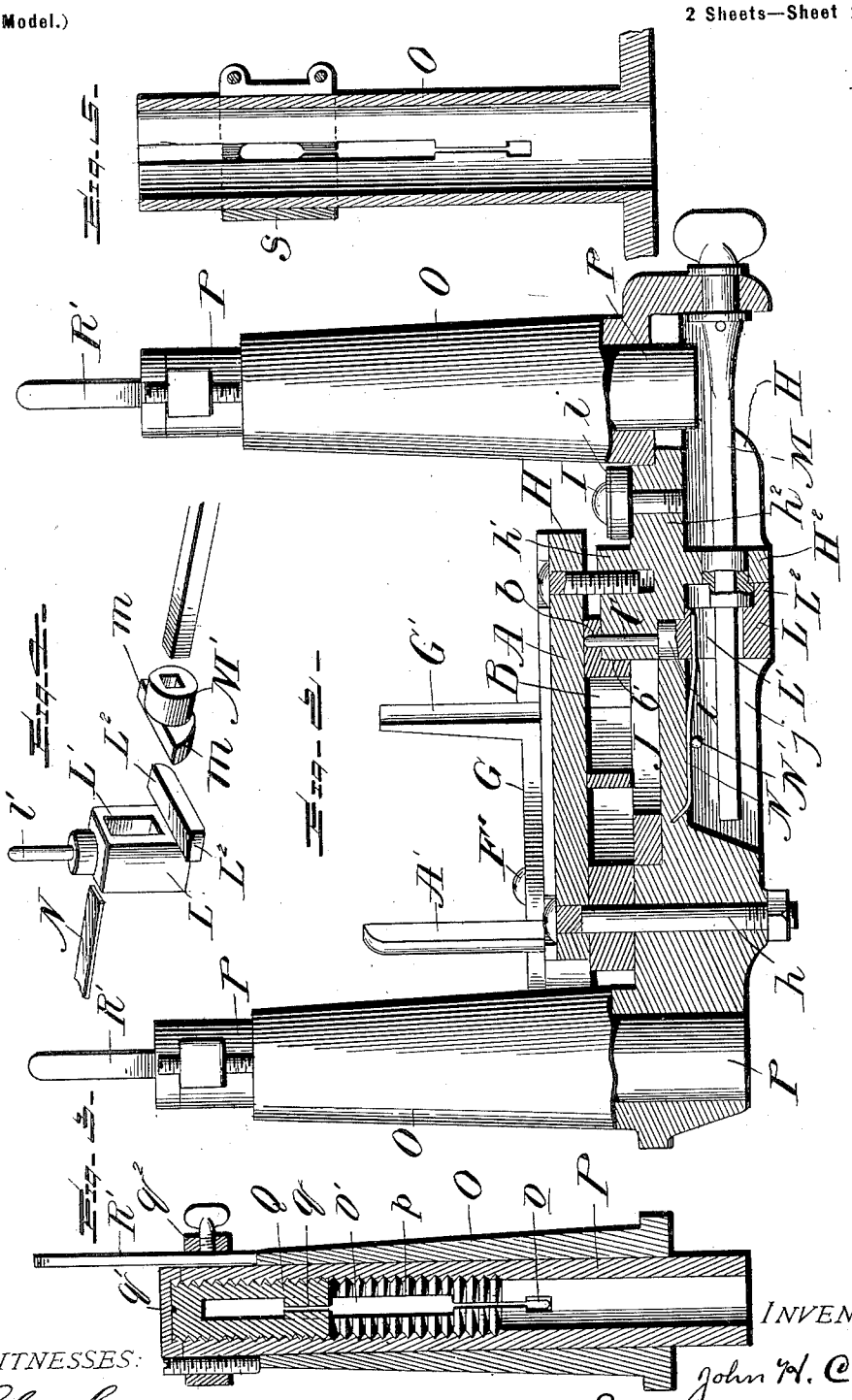
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John H. Coy

BY Stanton Weaver

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN H. COY, OF SALEM, OHIO.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 661,444, dated November 6, 1900.

Application filed May 9, 1900. Serial No. 16,076. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. COY, a citizen of the United States, residing at No. 468 East High street, in the city of Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a specification.

This invention relates to certain new and useful improvements in miter-boxes of that class in which the saw-carriage is mounted to swing about a fixed center and means are provided for locking the same in either of its adjusted positions.

The invention is designed as an improvement upon this class of miter-boxes; and it has for its objects, among others, to provide more efficient, yet easily-operated, means for locking the swinging carriage in either of its positions and to provide a novel form of saw-guide which will serve to keep the saw from springing, and to adapt the box for cutting circular miters and sprung moldings I employ a mold-stop adjustable to accommodate the varying forms of moldings.

I aim, further, at improvements in the details of construction whereby I am enabled to provide a more efficient miter-box which shall be simple and cheap in its construction, adapted for all the uses to which a device of this character may be put, easily operated, and not easily broken or the parts thereof deranged.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention in its preferred form is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of a miter-box constructed in accordance with my invention. Fig. 2 is a vertical cross-section through the same. Fig. 3 is a vertical section, on an enlarged scale, of one form of saw-guide. Fig. 4 represents, in perspective, details of the carriage-locking mechanism. Fig. 5 is a sectional detail of another form of saw-guide post. Fig. 6 is a detail perspective of one end of the frame. Fig. 7 is a vertical sectional detail through one of the stops. Fig. 8 is a vertical section through one of the mold-stops.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the frame, mounted upon suitable legs or supports *a*, the base being cut away, as shown at *a'*, in the usual manner, and bridging this cut-away portion is the segmental bar B, the upper face of which may be graduated, as shown. This segmental bar is provided with suitable openings *b*, as shown, into which is designed to engage the locking-pin (soon to be described) for locking the saw-carriage in its adjusted positions. The base is provided upon opposite sides of the cut-away portion with the inclined slots C, in which are adjustably mounted the mold-stops D. These stops are so mounted that they may be readily thrown up into operative position, but easily thrown down out of the way when desired. For this purpose the slots C are formed at their rear ends with the enlargements C', as shown, and the stops have their guide portions D' rotatably mounted upon the guide-rods E, so that when brought coincident with the said enlargements and the set-screws *d* turned in the proper direction the stops may be easily turned down into the position in which that on the right is illustrated in Fig. 6. Near each end the base is formed with the slots F, in which are adjustably mounted the screws F', having the nuts *f* upon their lower ends, which work in the grooves *f'* in the under side of the base or bed of the device, as shown. These screws pass through the curved slots *g* of the stops G, which are thus adjustable in any desired direction and are employed for mitering circular work, and they are provided with the vertical arm or extension G', which may serve as a stop for cutting the molding. These stops work through slots g^2 in the back A', as indicated in the drawings. They may be reversed when desired, so as to present either a convex or a concave face to the molding. The back is shown as provided with the vertical grooves *a'*, into which the vertical extensions G' may be received to steady the stops.

H is the saw-carriage. It may be of any

suitable construction and is pivotally mounted upon a vertical pivot h, held in the base at the rear side thereof. Upon its upper face it carries a bar H′, which rides over the segmental bar B, and beneath this bar H′ is a block h', which works in the rabbet b' of the said bar upon the under side thereof. This serves to guide and steady the carriage in its movements. This block h' has an extension h^2 forward, in which is secured the screw I, upon which is a washer i, which is adapted to bear upon the upper face of the adjustable arm J, which carries the front saw-guide and post. By loosening this screw the said arm may be moved inward or outward, as circumstances may require, and then held in its adjusted position by the pressure of the washer upon the upper face as the screw is turned down. The under face of the under portion of the carriage is recessed to receive the lower end of the front post K, as shown, and further recessed to receive the locking mechanism by which the carriage is held in its adjusted positions in the arc of a circle. This locking mechanism is constructed as follows: Seated in a suitable socket j in the under face of the lower portion of the saw-carriage is a block L, having an upward extension l and the upper end of this extension carrying a pin l', which is adapted to engage in either of the holes in the segmental bar B to lock the carriage in either of its positions. This block is recessed vertically, as seen at L′, and in this recess works the inner end of the locking-pin M. The block is provided at its front end with the flanges or extensions L^2, which are adapted to be engaged by the wings m of the cam M′, which has a rectangular or polygonal opening therethrough to receive the correspondingly-shaped locking-pin M, which has a suitable bearing in the diaphragm H^2 of the lower portion of the saw-carriage. This locking-rod is held against displacement in any suitable manner and the turning thereof will force the block and its pin downward, so that the latter will be withdrawn from its engagement with the hole in the segmental bar B in a manner which will be readily understood. The block is normally held in its uppermost position, so as to retain the pin in its engagement in the hole of the segmental bar, by a spring N, suitably secured within the recess in the under face of the lower portion of the saw-carriage and its other end acting upon the block, being seated in the recess thereof, as shown. A transverse pin N′ keeps the spring in position and allows of its ready removal when necessary. It will be readily understood that a turning of the locking-pin, which is provided at its outer end with a suitable wheel or thumb-piece for that purpose, will cause the arms or wings of the cam to bear down upon the block by engagement with the flanges or extensions thereof, and thus draw the pin out of its engagement in the hole of the segmental bar, so the carriage may be readjusted, and then by removing pressure from the rod or pin the spring will force the pin upward into its engagement with the new hole opposite which it has been brought by the adjustment of the carriage.

The saw-guide posts, of which there are two, one at the front and one at the rear, are constructed as follows, and as they are alike in all respects in their construction and operation a description of one will suffice for both: The post proper, O, is rigid with the swinging saw-carriage frame and is provided at front and rear with the vertical slots o, the upper ends of which are enlarged, as seen at o'. These posts are hollow to receive the tubular portions P, which are provided at opposite sides with the vertical slots p, as shown, which slots, however, are closed at their upper and lower ends. The upper end of this tubular portion is interiorly screw-threaded, as shown, and adapted to receive the threaded plug Q, which is thereby vertically adjustable therein, its lower end being slitted, as seen at q, and its upper end adapted to receive some suitable means whereby it may be turned. In this instance I have chosen to show it as provided with a slot q' to receive a screw-driver; but it is evident that other means may be employed for adjusting this plug. As seen in Fig. 3, this plug may be covered by a cap, and the tubular portion is provided with the lugs or ears, in one of which is mounted the horizontally-disposed set-screw, which serves to hold in its adjusted position a stop R′ for gaining. This stop is designed to engage the upper end of the post proper, as will be readily understood from the drawings.

In Fig. 5 is shown another form of post adjustment, which is substantially the equivalent of that just described, except that it embodies a split post and a clamping-collar S, having suitable means for clamping the same when desired, or the post might be composed of two like parts held by the clamping-collar.

The operation will be readily understood from the foregoing description when taken in connection with the annexed drawings, and a further detailed description thereof does not seem necessary.

From the foregoing it will be seen that I have devised a novel and efficient miter-box; but while the structural embodiment herein illustrated and described is believed at this time to be preferable I do not intend to limit myself thereto, but reserve the right to effect such changes, modifications, and variations in detail as may come properly within the scope of the protection prayed.

What I claim as new is—

1. A miter-box having its base provided with inclined slots with enlargements at their ends, and stops adjustable and rotatable in said slots and mounted to be turned down into said enlargements as and for the purpose specified.

2. A miter-box having a base provided with inclined slots, with enlargements at their in-

ner ends, stops rotatably mounted and adjustable in said slots, and means whereby the stops may be turned down in said enlargements below the plane of the base, as set forth.

3. A miter-box provided with a base having slots with enlargements, rods disposed lengthwise of said slots, and stops rotatably mounted upon said rods and adjustable lengthwise of the slots, as and for the purpose specified.

4. A miter-box provided with a base with inclined slots with enlargements and stops rotatably and adjustably mounted therein, and independent stops at the ends of the base for circular moldings, as set forth.

5. A post, having vertical slots, a tubular portion with vertical slots, and a plug adjustable within the tubular portion and slotted substantially as shown and described.

6. A post, a tubular portion therein, each slotted vertically, a plug adjustable within the tubular portion, and a stop carried by the tubular portion, as shown and described.

7. A post, a tubular portion therein, each vertically slotted, a plug adjustable within the tubular portion and slotted, a stop adjustably mounted in the tubular portion, and a gaining-stop also adjustable in the tubular portion, all as and for the purposes specified.

8. The combination with the frame and the swinging saw-carriage, of a locking-pin for locking the carriage in its adjusted positions, and a cam and actuating means for moving said pin to unlock the carriage, as set forth.

9. The combination of the frame, a swinging saw-carriage and a locking-pin, of a cam and actuating means, and a spring acting in opposition thereto, as and for the purpose specified.

10. The combination of a frame, a swinging saw-carriage, a locking-pin, a block carrying the same, a spring acting upon said block to force it in one direction, and a cam acting upon the block to move it in the opposite direction, as set forth.

11. The combination of a frame, a swinging saw-carriage, a locking-pin, a recessed block carrying the same, a spring disposed within the recess of the block to keep the pin normally upward, a cam acting on the block to force it in opposition to the spring, and a rod acting to move the same, as set forth.

12. The combination of the frame, the swinging saw-carriage, the recessed block, the spring acting thereon, the block being provided with extensions, a cam having wings to engage said extensions, and a rod having a polygonal portion engaging a correspondingly-shaped opening in the cam, as and for the purpose specified.

13. The combination with the frame and the saw-carriage having its lower portion recessed, of the post and its support adjustable therein, means for holding the same in its adjusted position, and a locking-rod carried by the adjustable support and having a portion to engage a cam for locking the saw-carriage in its adjusted position, as set forth.

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

JOHN H. COY.

Witnesses:
C. F. LEASE,
WM. HENSHILLWOOD.