

2 Sheets—Sheet 1.

No. 414,544.

Patented Nov. 5, 1889.

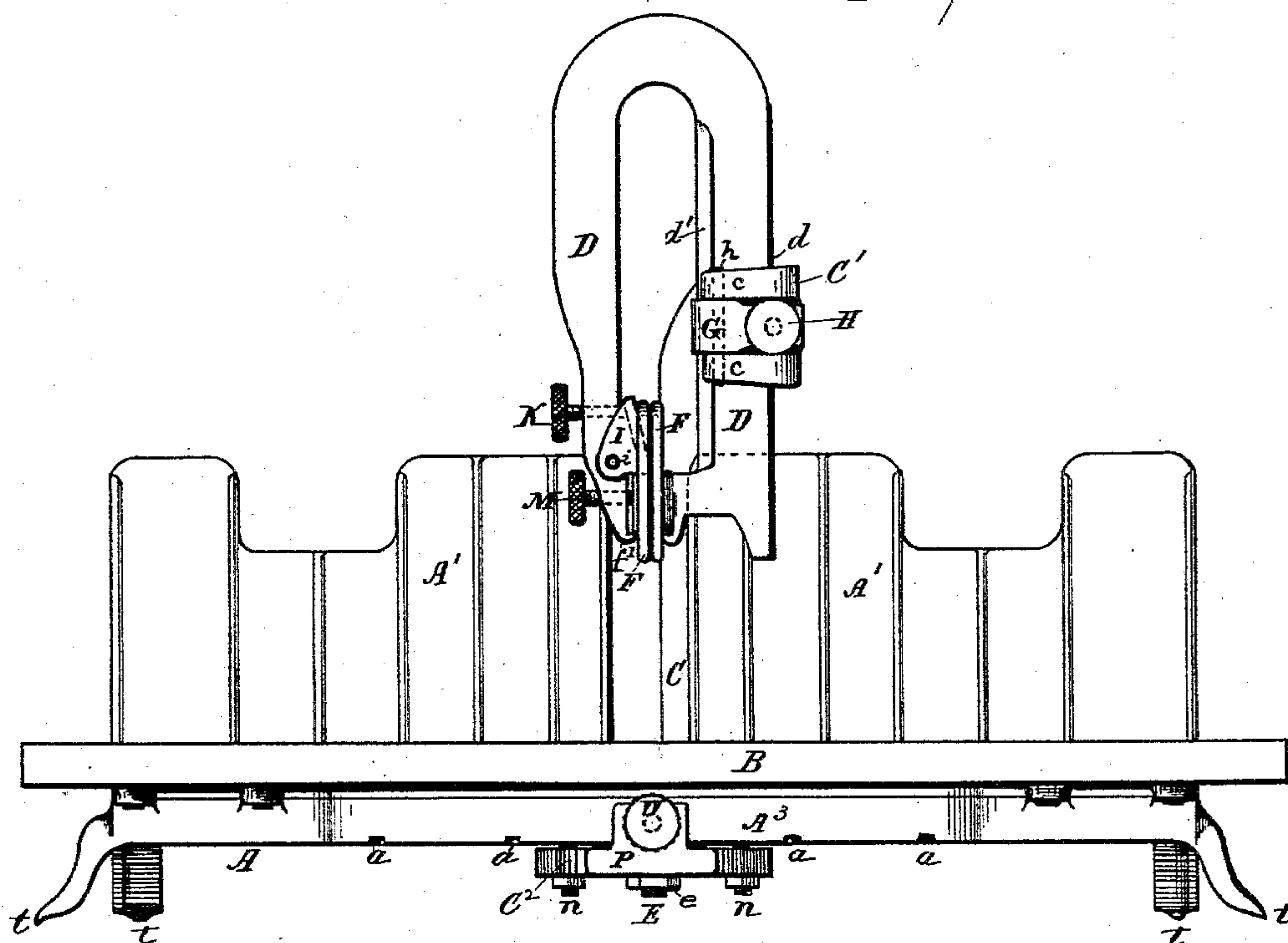
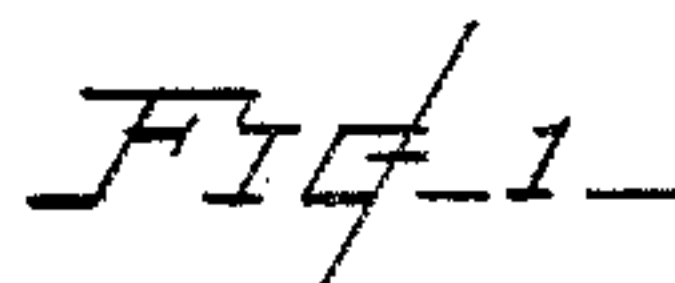


FIG 2

INVENTOR—

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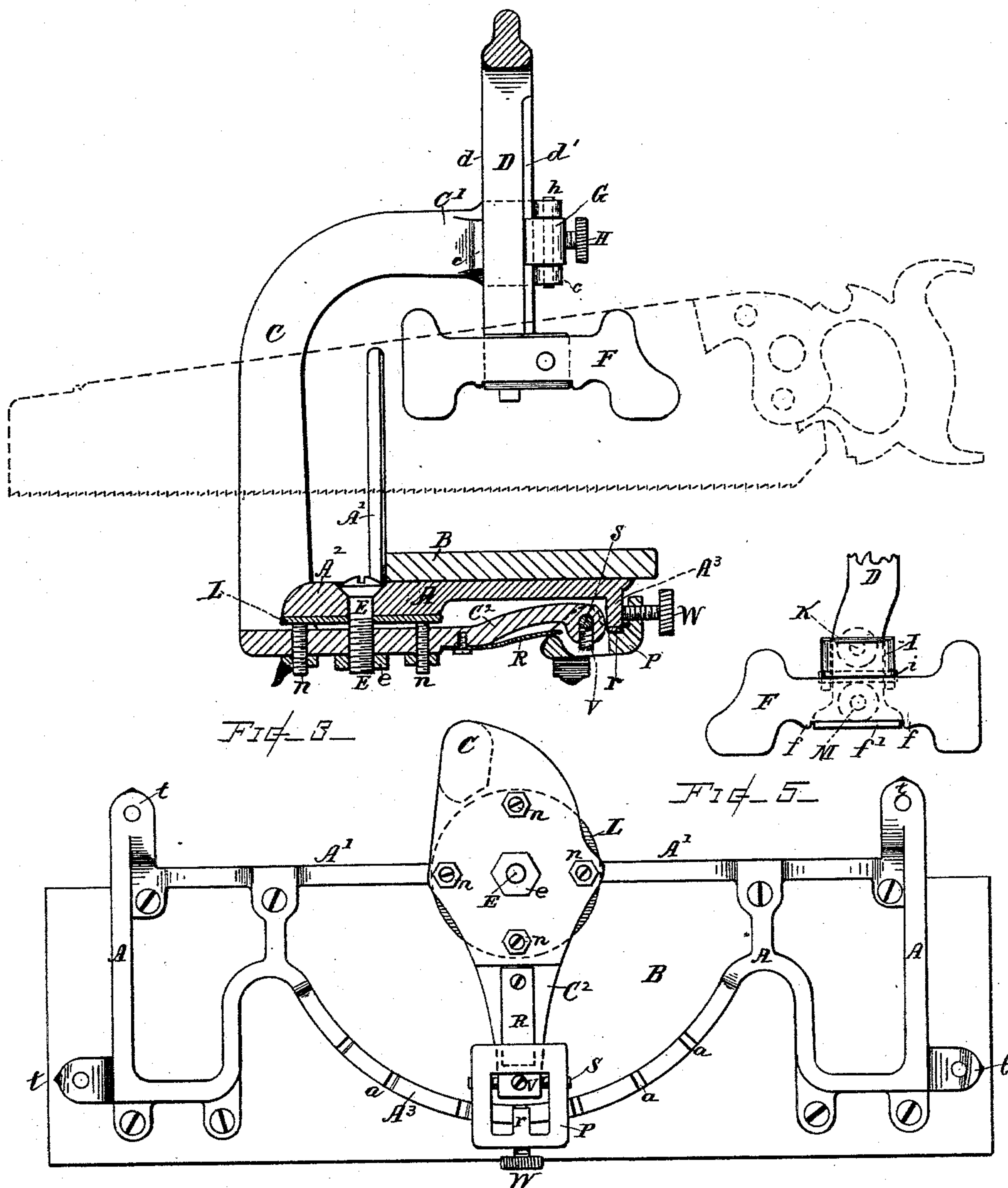
(No Model.)

2 Sheets—Sheet 2.

L. W. JACOBS.
MITER BOX.

No. 414,544.

Patented Nov. 5, 1889.



WITNESSES

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Fig. 4

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UNITED STATES PATENT OFFICE.

LUMAN W. JACOBS, OF WARREN, MASSACHUSETTS.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 414,544, dated November 5, 1889.

Application filed February 21, 1889. Serial No. 300,710. (No model.)

To all whom it may concern:

Be it known that I, LUMAN W. JACOBS, a citizen of the United States, residing at Warren, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Miter-Boxes, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide a miter-box which shall be practically efficient for the purposes intended and conveniently adjustable for cutting different angles and for varying and gaging the action of the saw as required in different classes of work, and which can be manufactured economically.

Another object is to provide a miter-box adapted for use with the ordinary different kinds of saws commonly used by carpenters in general work, and in which coarse or fine saws can be employed with equal facility.

These objects I attain by mechanism the nature and operation of which is explained in the following description, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a plan view of my improved miter-box. Fig. 2 is a front view of the same. Fig. 3 is a transverse vertical section on the line $x x$. Fig. 4 is a bottom view, and Fig. 5 is a view showing the clamp for holding the adjustable saw-guide.

In referring to parts, A denotes the supporting-frame; A', the upright back plates, which are preferably formed integral with said frame A; and B the bed or work-table, formed of wood or other suitable material and attached to said frame by screws.

C indicates an adjustable overhanging arm or guide-standard, the foot of which is connected to a boss A² on the rear of the frame A by means of a pintle-stud E, on which the standard can turn laterally to accommodate the various adjustments for right and left miters and other cuts.

D indicates a vertically-adjustable guide-carrier attached to the overhanging arm C' of the standard C, which arm is provided with jaws that embrace and support said carrier,

the latter being fitted with suitable bearing-surfaces $d d'$. The carrier is retained rigidly in position in connection with the arm C' by a suitable clamping device G and carries at its lower end the guide-plates F, between which the saw is guided and supported while in use.

The carrier D is best made in the form of an inverted loop, having on one of its arms the guiding-surfaces $d d'$, that fit within the jaws c to adjust up and down therein, and adapted to be held at any position of adjustment by the clamp G, which clamp, in the present instance, consists of a bar or lever pivoted on a fulcrum-pin h and with a thumb-screw H fitted therein, as indicated, whereby said lever can be actuated to grip the carrier between it and the opposite jaw, and thus confine the same in place.

The saw-guiding plates are formed as shown, one of them being rigidly fixed to the supported arm of the carrier D, while the other is adjustably retained in connection with the free leg of the carrier D, it being confined by lugs f from endwise displacement, and retained vertically by a lip f' on the end of the carrier-leg and a swinging clamp I, pivoted on the carrier-arm at i , and adapted to be forced down upon the top edge of the guide-plate by a thumb-screw K for holding the plate firm. A thumb-screw M is arranged at the back of the plate F for pressing it with greater or less force against the saw-blade, as desired. This device affords facility for using a wide or narrow saw and accommodating thick or thin work. The guides serve as a stop for a back-saw when doing dado work, and may be adjusted at such point as to gage the depth of the dado. A spring may be arranged for pressing the saw-guides together at the position of the thumb-screw M.

The foot of the standard C is disposed beneath the supporting-boss A², and the pintle-stud E passes through an opening in said boss, and is fitted with a screw-thread through an opening in the foot of the standard, and a jam-nut e is arranged on its lower end to prevent the stud becoming loosened therein.

A seat-plate L is introduced between the boss A² and foot of the standard to form a bearing therefor. A series of screw-studs n

are fitted in threaded openings through the foot, the ends of which studs rest against the bearing or seat plate near its periphery, drawing the pivot-stud firmly into its seat and closing the bearing, so as to prevent any backlash or looseness in the connecting-joint. The studs *n* also afford facility of adjusting the standard *C* in relation to its axis by turning one or more of said studs inward and others outward, so as to slightly tip the foot relatively to the bearing-plate *L* and boss *A*². The advantage of this construction will be obvious to any person skilled in the use of miter-boxes, as it affords facility for the squaring up, both sidewise and from front to rear, of the upright guide-supporting arm, to bring the guides into proper relation as regards the axial center of the adjusting-arm, and so that the saw will stand at right angles to the bed at all positions of adjustment. This arrangement of studs also permits of adjustment away from square position, so that the saw can be made to cut joints slightly inclined or undercut, or for giving draft on pattern-work. The studs *n* and plate *L* also serve to take up any backlash in the center stud occasioned by wear or otherwise.

The central part of the frame *A* is made with a circular flange or segment *A*³, fitted with recesses or notches *a*, that correspond with the principal positions of adjustment at which the saw-guides are set for use, and the foot of the adjustable standard *C* is made with a forwardly-extended arm *C*², that carries at its forward end a latch-piece *P*, having a lug *r*, that engages with the recesses in said segment *A*³ for retaining the standard *C* and saw-guides *F* at their positions of angular adjustment in relation to the table and back plates. The latch is best connected to the ends of the arms *C* by a long hinging-pin *S*, which affords lateral adjustment of the latch in relation to the lever or arm *C*². This hinge-pin is headed or fitted at its ends to prevent the latch from sliding laterally thereon, while allowing the free swinging movement of the latch, and the pin is confined in the arm *C*² by means of a set-screw *V*, as indicated. Thus, when it is necessary or desirable to slightly vary the relative adjustment of the latch on the arm, to bring the overhanging arm *C*¹ and saw-guides *F* more or less to the right or left, it can be done by loosening the set-screw *V*, slipping the hinge-pin *S* endwise in the end of the arm, and then retightening said set-screw *V*. A spring *R* is attached to the under side of the arm *C*², which acts against the latch-piece *P*, and thereby forces the latch-lug up into the notch *a* of the segmental flange and retains the parts in engagement. A thumb-screw *W* is arranged in the front of the latch, which screw turns in against the face of the flange *A*³ and serves for binding the adjustment at any particular notch when desired, and also for retaining the arm *C*², standard *C*, and saw-guides *F* at any special adjustment intermediate of the

respective notches. The supporting-frame is preferably provided with feet that terminate in pointed or wedge-shaped toes *t*, that prevent the apparatus from slipping on the bench when used. The two rear toes are directed backward and those of the front feet to the right and left, respectively, as indicated.

I am aware that miter-boxes have heretofore been constructed wherein the adjustment to various angular positions is retained by means of a notched segment and a latch or dogging device. Hence I do not broadly claim such feature; but in all former instances, so far as I am aware, the construction is essentially different from that herein defined and claimed.

What I claim as my invention, to be secured by Letters Patent, is—

1. In an adjustable miter-box, a standard at the rear of the bed, having its foot pivotally attached to the frame, and its upper part extended forward by an integral overhanging arm, in combination with saw-guides supported on the depending ends of a two-armed carrier that is vertically adjustable on said overhanging arm, the work-supporting table and back plates, a stop for retaining the carrier and guides in their vertical adjustment, and a fastening for holding said standard with the saw-guides at their positions of radial adjustment in relation to the work-table, all substantially as set forth.

2. In an adjustable miter-box, the combination, substantially as described, of the bed-frame, the upwardly-projecting overhanging standard pivoted thereto by a vertical axial stud, a latch or dog for retaining said standard at positions of radial adjustment, the saw-guide carrier vertically adjustable on said overhanging standard, and saw-guiding plates attached to the lower ends of said carrier, all arranged for operation as and for the purposes set forth.

3. The combination of the vertically-adjustable slide or carrier having the saw-guides attached thereto, and overhanging support having jaws that embrace said carrier, the clamping-dog *G*, and thumb-screw *H*, substantially as and for the purpose set forth.

4. The saw-guiding plates *F* *F*, one rigidly attached and the other movably retained on the opposite arms of the vertically-adjustable carrier, and the adjusting-screw *M*, fitted in the carrier-arm for pressing inward said movable guide-plate, in combination with the vertically-adjustable carrier, an overhanging carrier-support, and a work-table, substantially as shown and described.

5. The overhanging standard carrying saw-guides located above the work-table, and provided with a radial adjusting-arm disposed beneath the work-table, the pivot-stud *E*, the radial-arm latch *P*, the segment-flange, and the thumb-screw *W*, fitted in said latch, all combined substantially as and for the purpose set forth.

6. The combination, with the frame having

the segmental flange, the guide-supporting standard, and its radial retaining-arm, of the latch P, provided with the long pivot S for affording lateral adjustment of said latch in
5 relation to the arm, and the set-screw V, fitted in the radial arm for retaining said pivot therein, substantially as set forth.

7. The combination, with the saw-guide carrier and the saw-guides, one of which is rigidly attached to and the other adjustable on
10 said carrier, of the hinged clamp I, the lip *f'* on the carrier, and the thumb-screw K for pressing said clamp to hold said adjustable saw-guide rigid when adjusted against the
15 saw, substantially as set forth.

8. In an adjustable miter-box, the combination, with the frame, the saw-guide-supporting standard and its pivot, of a series of adjusting-screws *n*, arranged at different sides
20 of the pivot for effecting inclined adjustment

of the standard in relation to the plane of the bed, substantially as described.

9. In an adjustable miter-box, the combination, with the supporting-frame and saw-guide-supporting standard having a base or
25 foot that is pivotally connected with the frame, of a bearing-plate disposed between the frame and standard-foot, and a series of adjusting-studs at intervals about the central pivoting and connecting stud for sustaining the stand-
30 ard-foot against said bearing-plate and adjusting the same in relation thereto, substantially as and for the purpose set forth.

Witness my hand this 16th day of February, A. D. 1889.

LUMAN W. JACOBS.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.