

No. 630,994.

Patented Aug. 15, 1899.

J. SKINNER.
SASH COPING MACHINE.

(Application filed Oct. 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

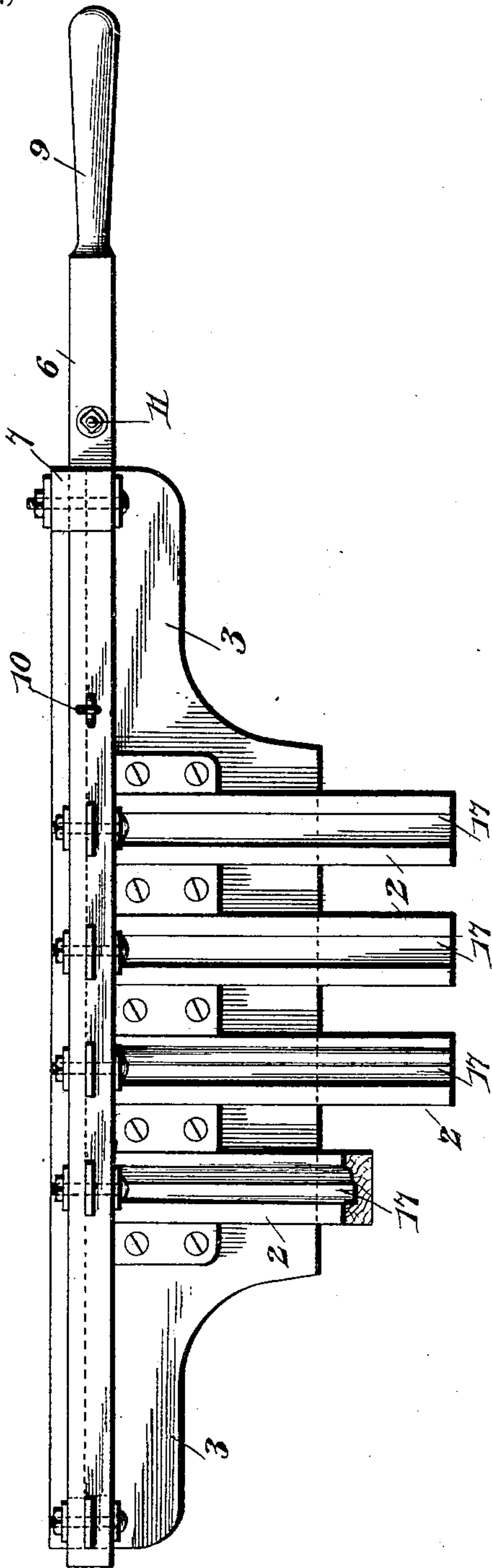
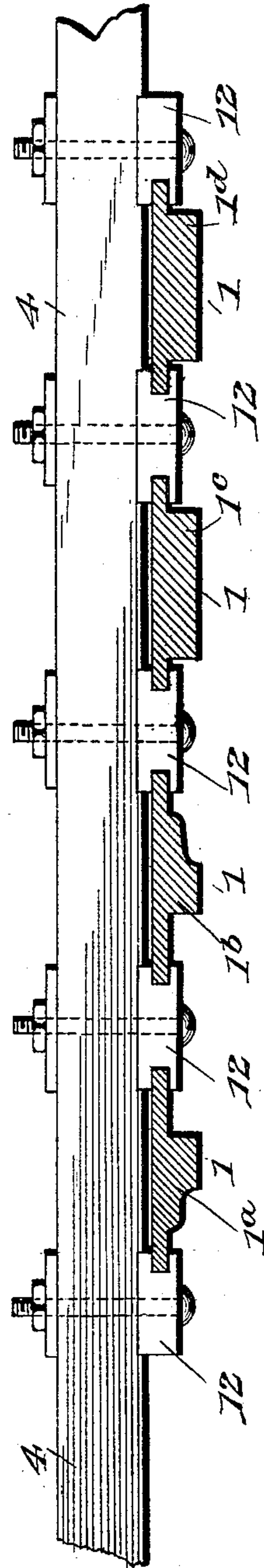


Fig. 4.



Witnesses

Jas. K. McLaughlin
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By *his* Attorneys,

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No. 630,994.

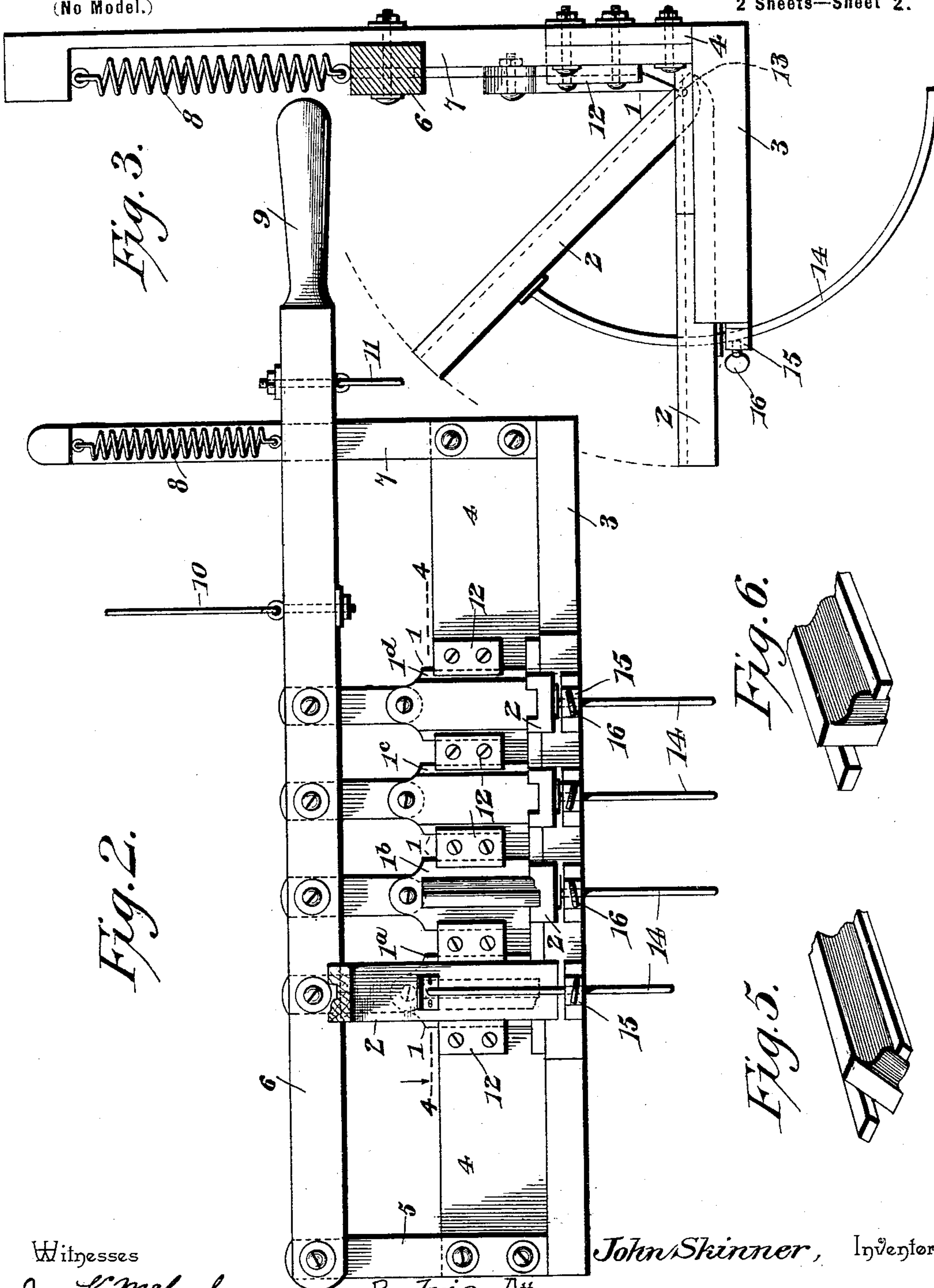
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2 Sheets—Sheet 2.



Witnesses

James K. McLachlan

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JOHN SKINNER, OF COLORADO SPRINGS, COLORADO.

SASH-COPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 630,994, dated August 15, 1899.

Application filed October 11, 1898. Serial No. 693,249. (No model.)

To all whom it may concern:

Be it known that I, JOHN SKINNER, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented a new and useful Sash-Coping Machine, of which the following is a specification.

My invention relates to a sash-coping machine designed for beveling or mitering the extremities of window bars or muntins in the construction of diamond or other angle-paned window-sashes. The expense incident to the construction of window-sashes having panes of irregular shapes is due to the fact that in the ordinary practice the bars or muntins are terminally beveled or mitered by hand or separately by the aid of a fret-saw; and it is the object of my invention to provide a machine adapted to hold and simultaneously cut a plurality of bars or muntins at the desired angle, whereby the operation of constructing sashes of the class named may be simplified.

Further objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a machine constructed in accordance with my invention. Fig. 2 is a front elevation of the same. Fig. 3 is an end view. Fig. 4 is a horizontal section on the plane indicated by the line 4 4 of Fig. 2. Figs. 5 and 6 are detail views of bars or muntins of which the extremities have been coped or cut by means of a machine constructed in accordance with my invention.

Similar numerals of reference indicate corresponding parts in the figures of the drawings.

The essential features of my coping-machine consist of a plurality of knives or cutters 1, mounted in suitable guides for reciprocation in fixed paths, in connection with bead or strip holding tables 2, mounted for angular adjustment with relation to the paths, respectively, of the blades or cutters and adapted to form rests for the bars or muntins during operation of said blades or cutters.

In the construction illustrated I employ a supporting-frame having a base 3 and a ver-

tical back 4, a standard 5 being arranged at one end of the frame to form a support for the pivoted end of the operating-lever 6, and another standard 7 being arranged at the opposite end of the frame to form a guide for the free end of said lever, a suitable yielding device, such as a spring 8, being connected with the operating-lever to normally hold the same in an elevated position. Any suitable means for communicating motion to this lever may be employed, a grip 9 being illustrated at the free end thereof when the lever is to be operated manually, and upwardly and downwardly extending links 10 and 11 also being shown, whereby connection may be made with either a counter-shaft or a foot-treadle, neither of which, however, is illustrated in the drawings, as the application of such means of operation will be readily understood by those skilled in the art to which my invention appertains.

The guides in which the blades or cutters 1 are mounted consist, in the construction illustrated, of opposite clip-plates 12, secured to the upright portion or back 4 of the frame, and the blades or cutters, which are preferably beveled at their cutting edges, as shown in Fig. 3, are of different cross-sectional contours to suit the cross-sectional shapes of the bars or muntins which are to be coped thereby. For instance, the blades 1^a and 1^b in the construction illustrated are of beaded or irregular contour, while the blades 1^c and 1^d are flat-faced to provide for cutting those ends of the bars or muntins which are to be arranged in contact with the frame-bars of the sash or those bars which are not beaded. The work holding or supporting tables 2 are pivoted, as at 13, to the frame of the machine, are parallel to each other, and extend in the same general direction away from the vertical back of the supporting-frame, one of said tables being employed in connection with each blade or cutter and in a common transverse vertical plane therewith, and attached to each table is a segmental holding-rod 14, extending through a clamp 15, having a suitable set-screw 16, adapted to impinge against the rod, and thereby secure the table 2 at the desired inclination to the plane of movement of its cooperating blade or cutter. The pivots 13 are located in the vertical planes, respectively,

of the knives or cutters which coöperate with the tables, and said pivots are arranged adjacent to the work-supporting surfaces of said tables, and hence in varying the angular positions of the tables to suit the angles at which the work supported thereby is to be cut no transverse adjustment of the tables or movement thereof horizontally toward and from the vertical wall 4, upon which the knives are mounted, is necessary.

When it is desired to cope a bar or muntin to fit a certain position in the sash, the angle of the proposed bar or muntin is obtained by means of any suitable instrument, such as an angle-gage of any of the well-known constructions in use by workmen in this class of devices. Having obtained the angle of the proposed bar or muntin, the gage is applied to the coping-machine and the work-holding table 2 of one of the blades is adjusted and secured at the angle corresponding with the gage. Having accomplished this adjustment, the bars or muntins to be coped are placed in the seat or rest 17 of the adjusted table and the operating-lever is depressed to bring the cutting edge of the blade or knife into contact with the bar or muntin. It will be seen that several bars or muntins may be mitred simultaneously and that a series of bars or muntins may be successfully mitred at the same angle and that the angle at which the cut is made is fixed positively, so as to avoid the necessity of experimenting in the operation of preparing the parts which are to constitute the sash.

Furthermore, it will be seen that the construction of a machine embodying my invention is simple, the same involving a small number of parts, all of which are exposed, whereby access may be had thereto for cleaning, repairing, sharpening, &c., and, furthermore, it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim is—

1. In a machine of the class described, the combination of a supporting-frame having a

base and a vertical back, a plurality of cutters supported to have vertical reciprocating movement parallel to each other and to the vertical back, a plurality of work-holding tables pivoted respectively at their inner ends in the transverse planes of the respective cutters, said tables being parallel to each other and extending in the same general direction, and means for adjusting the angle of inclination of each table independently, and means for operating the cutters simultaneously, substantially as and for the purpose set forth.

2. In a machine of the class described, the combination of a supporting-frame having a base and a vertical back, a plurality of cutters supported to have vertical reciprocating movement parallel to each other and to the vertical back, a plurality of work-holding tables pivoted respectively at their inner ends on pivots arranged in the plane of movement of the cutting edges of the blades, said tables being parallel to each other and extending outwardly from their pivots in the same general direction, means for adjusting the angle of inclination of each table independently, and means for operating the cutters simultaneously, substantially as and for the purpose set forth.

3. In a machine of the class described, the combination of a supporting-frame having a base and a vertical back, a plurality of spaced grooved or channeled guides secured to said back, reciprocatory blades or cutters having their side edges mounted in said guides, means to operate the blades simultaneously, a plurality of work-holding tables pivotally mounted upon the supporting-frame with their inner ends adjacent to the vertical back, and means for adjusting the inclination of the tables relatively to the plane of movement of the cutters, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN SKINNER.

Witnesses:

NELS JOHNSON,
HARLAN P. SICKLER.