

No. 702,044.

Patented June 10, 1902.

J. T. ZIKA.
COPING MACHINE.

(Application filed Dec. 9, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

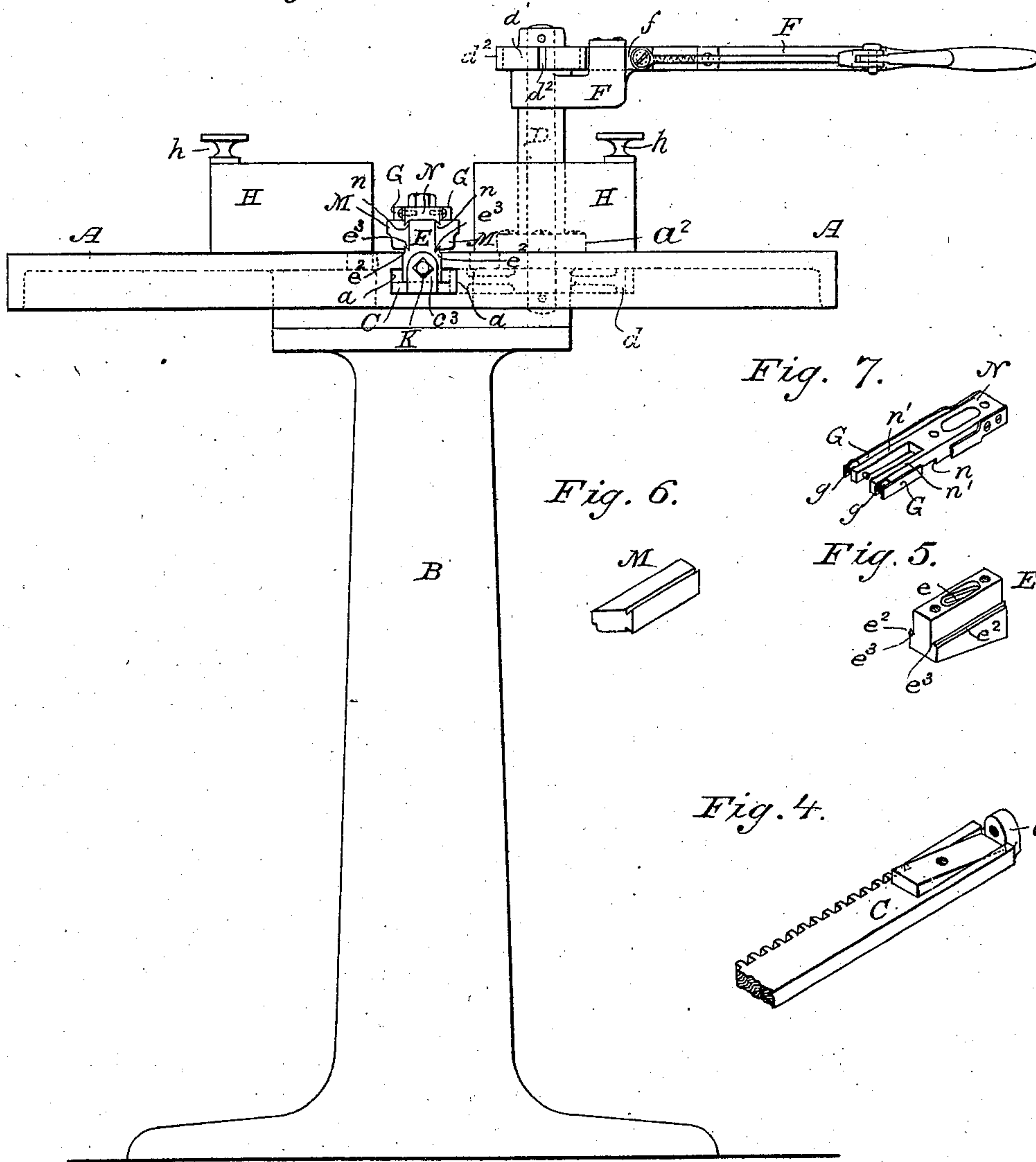


Fig. 7.

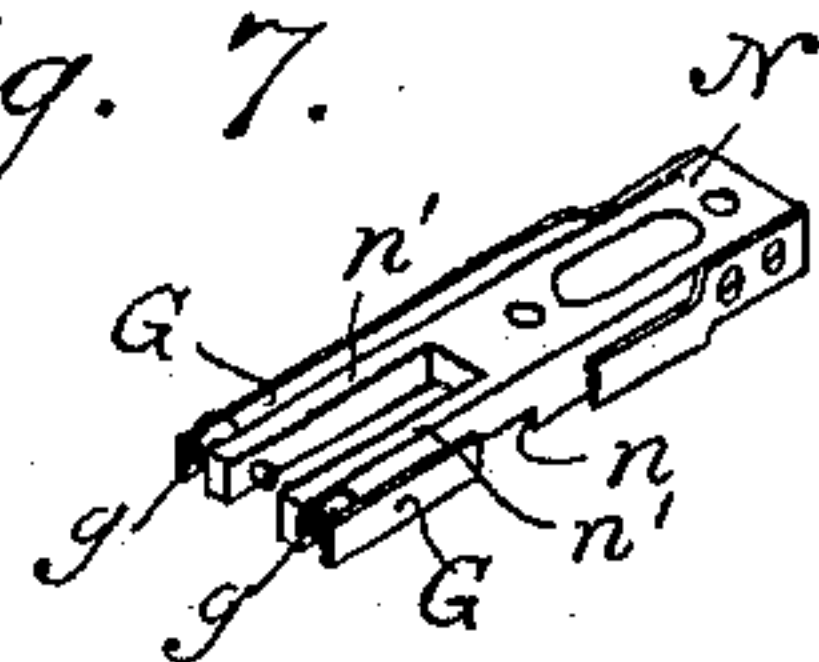


Fig. 6.

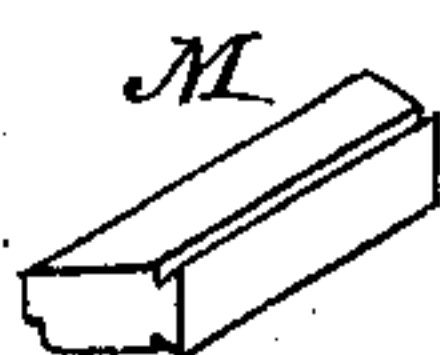


Fig. 5.

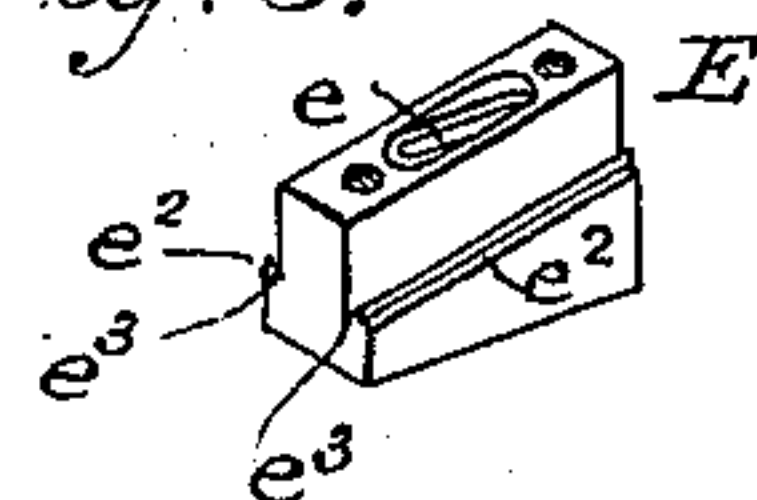
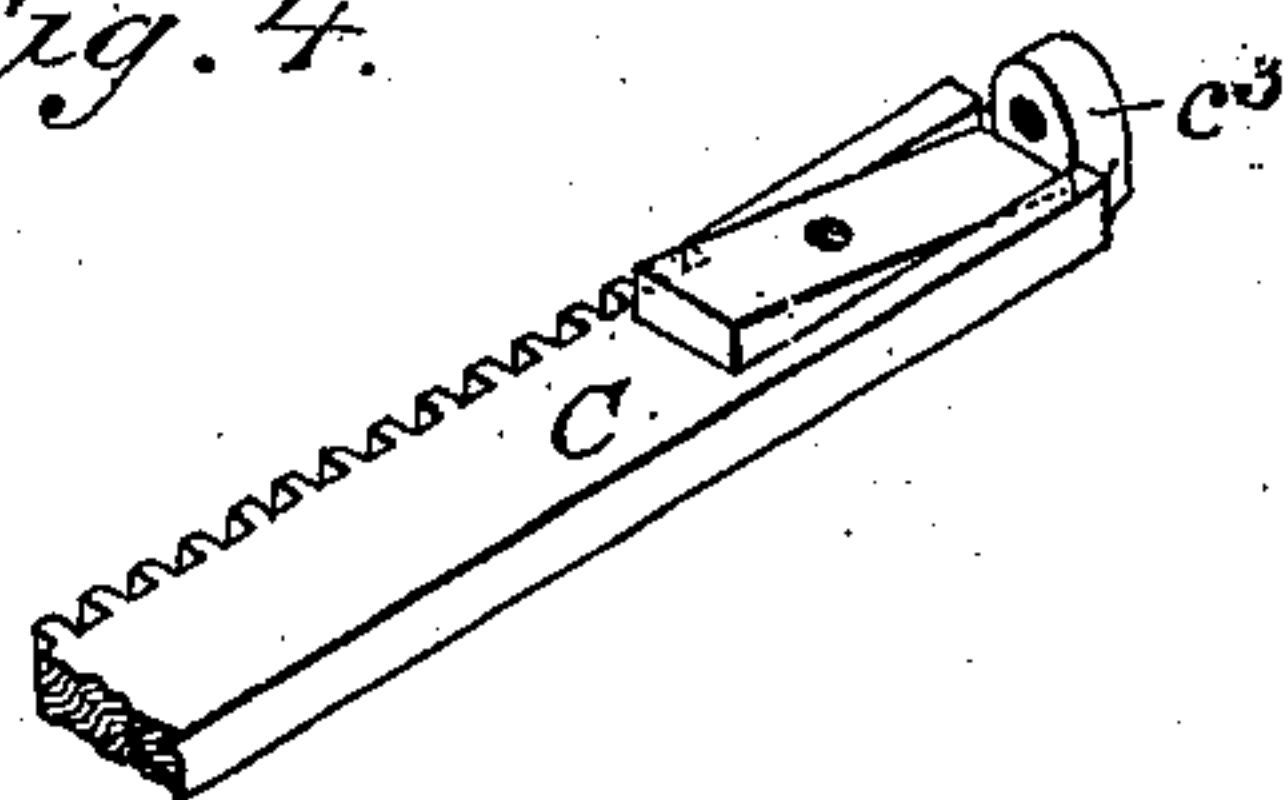


Fig. 4.



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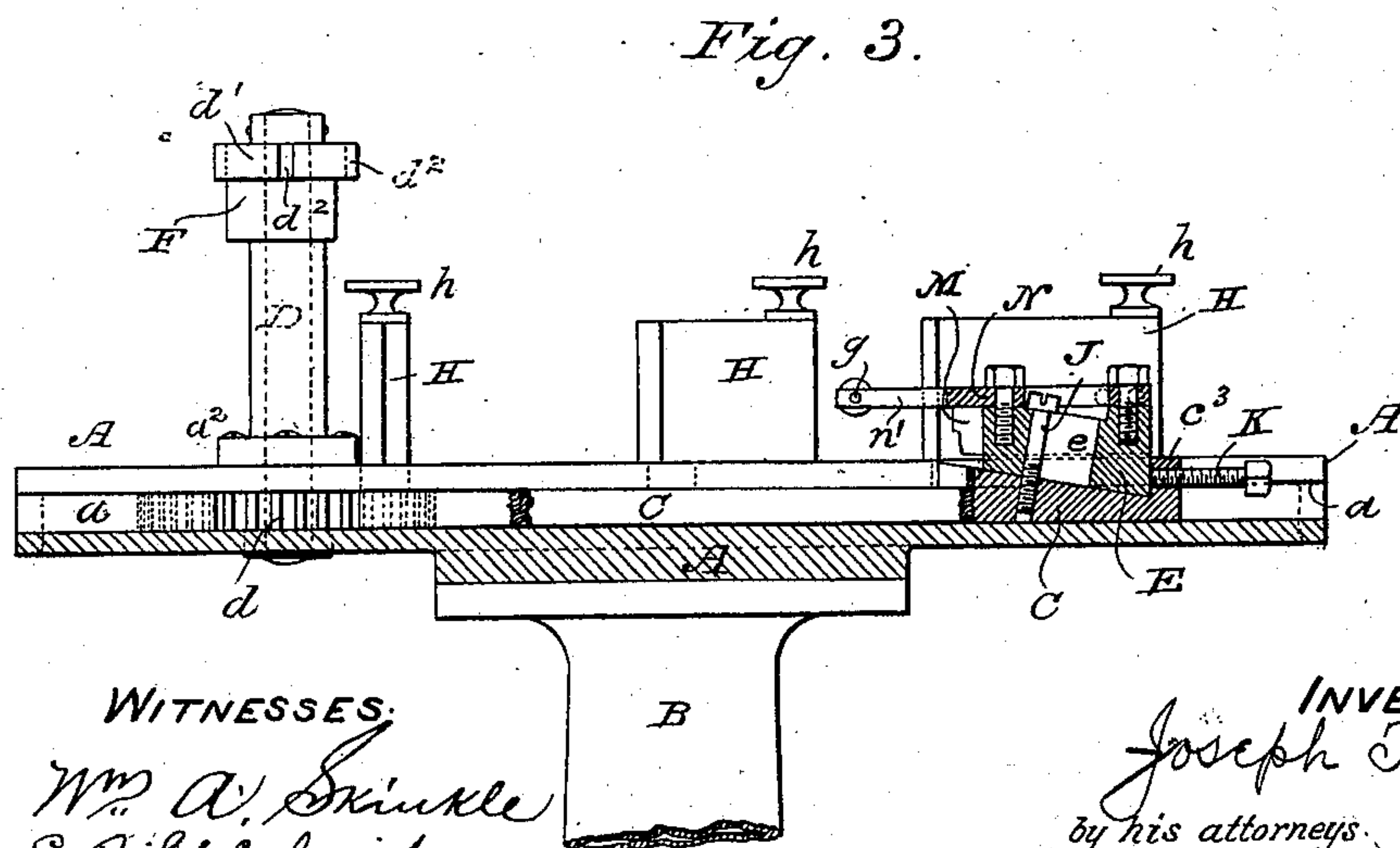
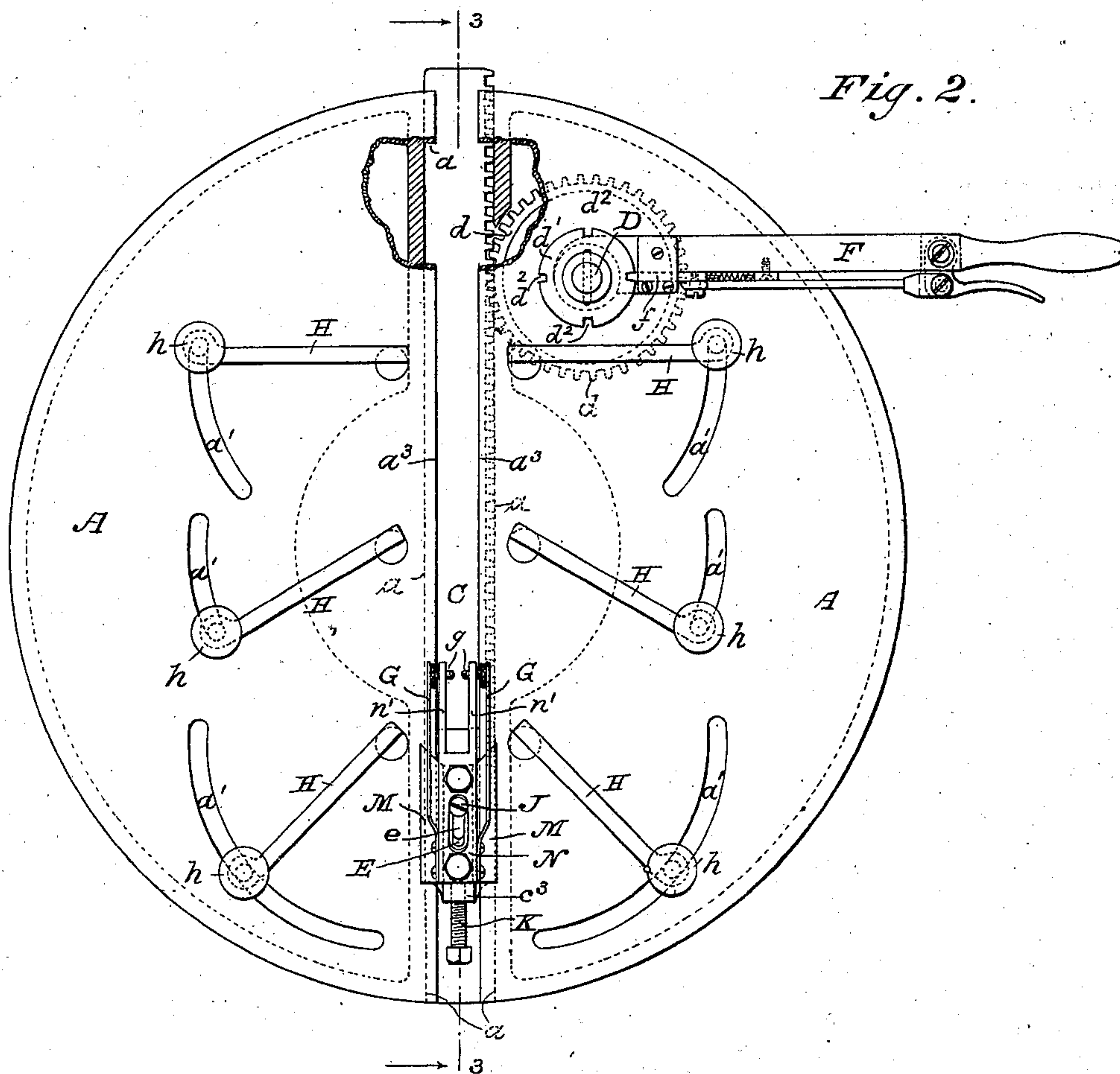
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOSEPH T. ZIKA, OF CLEVELAND, OHIO.

COPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 702,044, dated June 10, 1902.

Application filed December 9, 1901. Serial No. 85,137. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. ZIKA, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Coping-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to a machine which will probably find its greatest field of usefulness in grooving the ends of bars forming parts of window-sashes, so that the ends so grooved will fit the molded faces of the rail-stile and the other bars forming constituent parts of window-sashes. The bars to be so grooved are preliminarily cut off at the proper angles to the sides, and on bars to be used in so-called "cut-up" window-sash these ends may be at almost any angle to the sides. It is not the intention, however, to necessarily limit the invention to this particular use.

The object of the invention is to provide an efficient machine with which to groove the ends of bars, whatever may be the angle at which said ends lie to the sides, and to do this work quickly and accurately.

The invention may be here summarized as consisting of the construction and combination of parts hereinafter described, and pointed out definitely in the claims.

In the drawings, Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a plan view thereof. Fig. 3 is a vertical sectional view in the plane indicated by line 3 3 of Fig. 2. Fig. 4 is a perspective view of the front end of the slide on which the tool-carrier is to be secured. Fig. 5 is a perspective view of said tool-carrier. Fig. 6 is a perspective view of a tool—to wit, a coping-chisel—adapted for use in the machine; and Fig. 7 is a perspective view of the tool-clamping plate and parts which are secured thereto.

Referring to the parts by letters, A represents the work-supporting table secured upon a suitable support B. A slide C is mounted in a suitable undercut groove or way a in the table. This slide carries the tools M and also the adjustable gages G, by which the depth of the grooves cut by the tools is regulated. Attached to this slide and forming a rear-

ward extension thereof is a bar having rack-teeth upon one edge which lies beneath the adjacent overhanging edge a^3 of the groove, whereby the shavings are prevented from falling onto the rack-teeth. This bar must be long enough to preserve the operative engagement with the pinion d when the slide C is at either end of the table. The pinion is attached to the lower end of a vertical shaft D, which is mounted in a suitable bearing a^2 upon the table. Attached to the upper end of this shaft is a notched wheel d' . An operating-handle F is loosely mounted upon the shaft D and is provided with a spring-latch f for engaging in any one of the notches d^2 , whereby to connect the handle with the shaft. The handle may be operated from either side of the table and may be so operated whatever position the slide C may be in.

A plurality of guide-blocks H are pivoted to the top of the table and are adapted to be adjustably secured in any position thereon. In the construction shown the guide-faces of these blocks are in planes which pass, respectively, through the axes of the block-pivots. Each block has near its outer end a clamping device h , passing through arc-shaped slots a' in the table, whereby each block may be clamped to the table at any desired angle to the path in which the tool moves. There may be any number of these blocks, although preferably three are provided upon each side of the groove a of the table, because few, if any, jobs call for the grooving of the bars at more than three angles, both right and left.

The top surface of the slide C, near its front end, is inclined, and the lower surface of the tool-carrier E is correspondingly inclined, whereby the movement of the carrier upon the slide raises or lowers the carrier, and thus adapts the machine to work on bars of various widths. There is a slot e through the carrier E through which passes a screw J, screwing into the slide, whereby when the carrier is once adjusted it may be securely fastened. A set-screw K, screwing through the up-turned rear end c^3 of the slide, abuts against the carrier, and thus affords means for nicely adjusting it.

On each side of the carrier is a shelf e^2 , in the top surface of which is a longitudinal groove e^3 . Upon the block is a tool-clamping

plate N, having grooves *n* on the under side of its overhanging edges, and when this plate is secured upon the block it will securely hold two cope-chisels M, the edges of which are dovetailed to fit the grooves *n* and *e*³. Secured to the sides of this plate are gage-springs G, which are adjusted by means of screws *g*, screwing through the two tailpieces *n'* of the plate N and abutting against the inner faces of the said springs.

In using the machine the several guide-blocks H are adjusted and secured at the proper angles, so that the ends of the bars to be grooved and which have been previously cut to the same angle will be parallel with the path of the tool when the sides of said bars are held against the guide-faces of said blocks. The gage-springs are adjusted so that the ends of the said bars will, when they lie against said springs, project beyond the tool a distance equal to the desired depth of the cut. Then the operator, who with one hand is holding a bar to be cut with its side against the proper guide-block and its end against the gage-spring, takes hold of the handle with his other hand and by operating it moves the slide and parts carried thereby so that the chisel M will cut the end of the bar. The handle can be first moved into whatever position is most convenient for the operator and then locked to the shaft, as described.

Having described my invention, I claim—

1. In a coping-machine, the combination of a table having in its work-supporting surface a guide-groove, a slide movable in said guide-groove, a cope-chisel secured to said slide, an adjustable gage also secured to the slide, an adjustable guide-block secured to the table, and mechanism for operating said slide, substantially as specified.

2. In a coping-machine, the combination of a table having an undercut groove in its work-supporting surface, a slide mounted in said groove, a bar secured to said slide and having on one edge, rack-teeth which lie beneath one overhanging edge of the groove in the table, a pinion engaging with said teeth, mechanism for turning said pinion, a cope-chisel secured to said slide, and a guide-block adjustably secured to the top of the table, substantially as specified.

3. In a coping-machine, the combination of a table having a guide-groove in its work-supporting face, a slide mounted in said groove and carrying a tool-carrier which has an outwardly-projecting grooved shelf on its side, a clamping-plate secured to said tool-carrier and having a groove in the under side of its overhanging edge, a cope-chisel having dovetailed flanges for engagement with the grooves

in said shelf and clamping-plate, and mechanism for operating said slide, substantially as specified.

4. In a coping-machine, the combination of a table having a guide-groove in its work-supporting face, a slide mounted therein having an inclined top face, a tool-carrier having a beveled lower face which rests upon the beveled face on the slide, and laterally-extended shelf having a groove in its top surface, a set-screw for fastening the tool-carrier to the slide, a clamping-plate secured to the top of the tool-carrier and having a groove in the under side of its overhanging edge, and a cope-chisel having dovetailed flanges for engaging in said grooves, substantially as specified.

5. In a coping-machine, the combination of a table having a guide-groove in its work-supporting face, a slide mounted in said guide-groove, a tool-carrier upon said slide having a laterally-projecting longitudinally-grooved shelf, a clamping-plate secured to said tool-carrier and having a groove in its overhanging edge, a cope-chisel having dovetailed flanges for engagement with said grooves, a gage-spring secured to the sliding member, and a set-screw in the clamping-plate engaging with said spring to adjust it into various positions, substantially as specified.

6. In a coping-machine, the combination of a table having a guide-groove in its work-supporting face, a slide movable therein, mechanism for operating it, a tool-carrier upon said slide having on its sides longitudinal shelves, a clamping-plate secured upon said tool-carrier and overhanging the same at both edges and having two rearwardly-projecting tailpieces, cope-chisels clamped between said clamping-plate and shelves, two gage-springs secured to opposite sides of the clamping-plate, two set-screws screwing through said tailpieces and engaging with said gage-springs, and a plurality of adjustable guide-blocks secured to the face of the table on opposite sides of the guide-groove therein, substantially as specified.

7. In a coping-machine, the combination of a work-supporting table, a tool-carrier movable in a guideway upon said table, an adjustable gage secured to and movable with the tool-carrier, an adjustable guide-block upon the table, and mechanism for operating said tool-carrier, substantially as specified.

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

JOSEPH T. ZIKA.

Witnesses:

E. B. GILCHRIST,
E. L. THURSTON.