

W. SCHENK.

TOOL FOR CUTTING AND GROOVING FLAT CHAIN LINK BLANKS.

APPLICATION FILED NOV. 17, 1906.

Fig. 1.

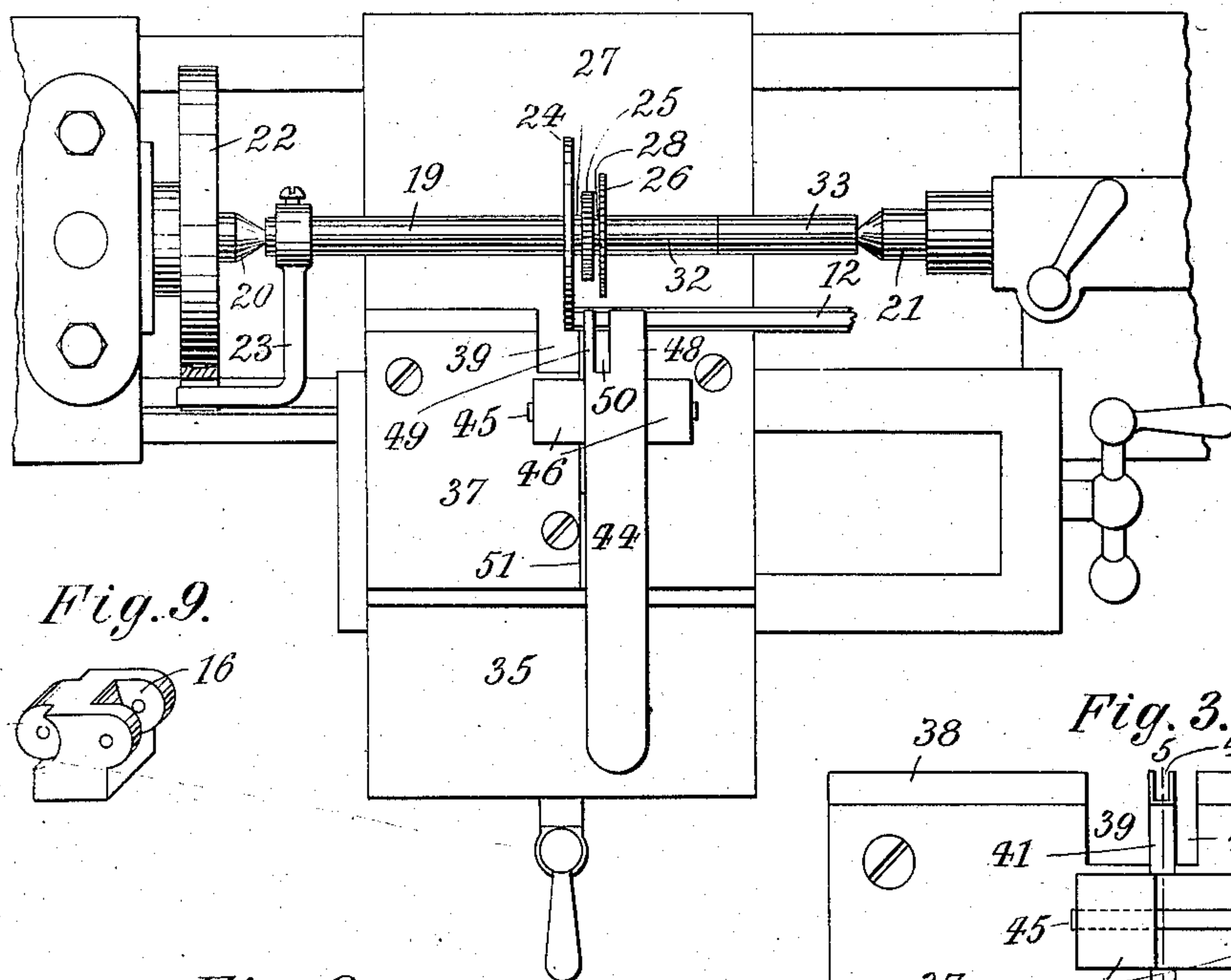


Fig. 9.

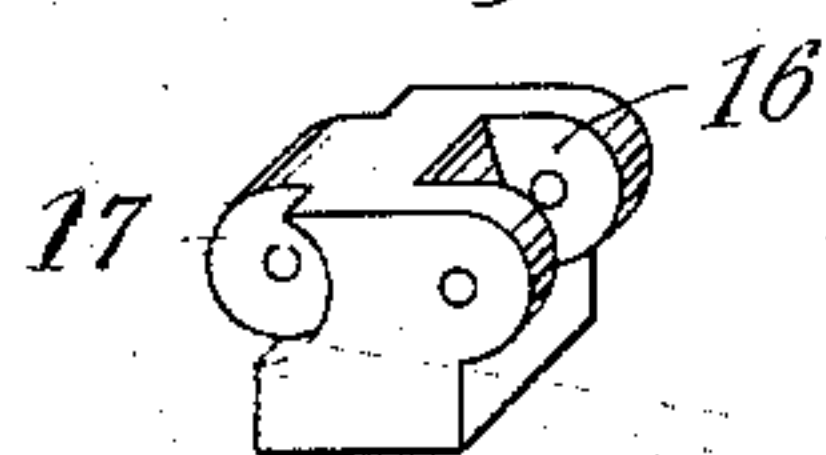


Fig. 2.

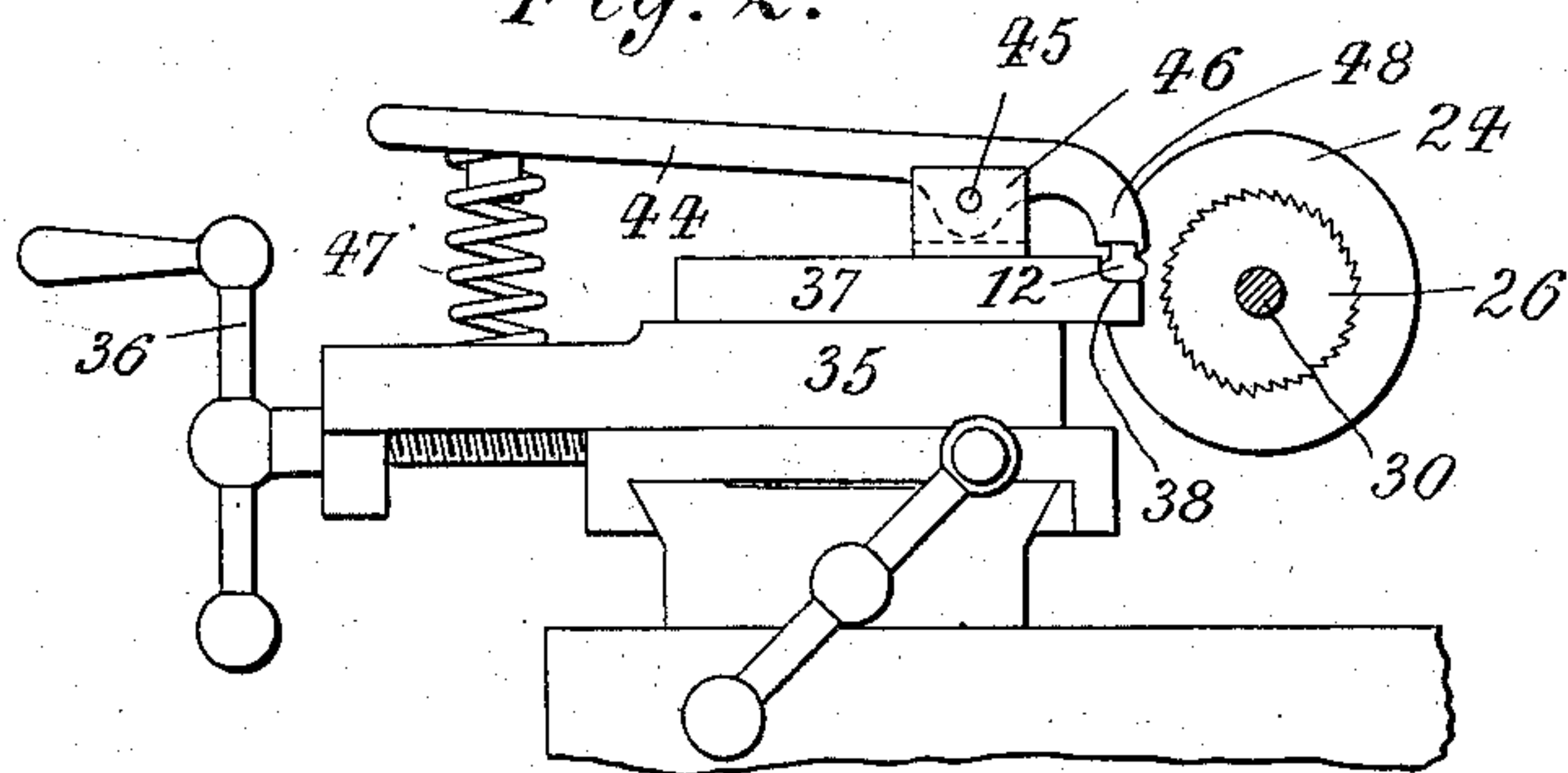


Fig. 3.

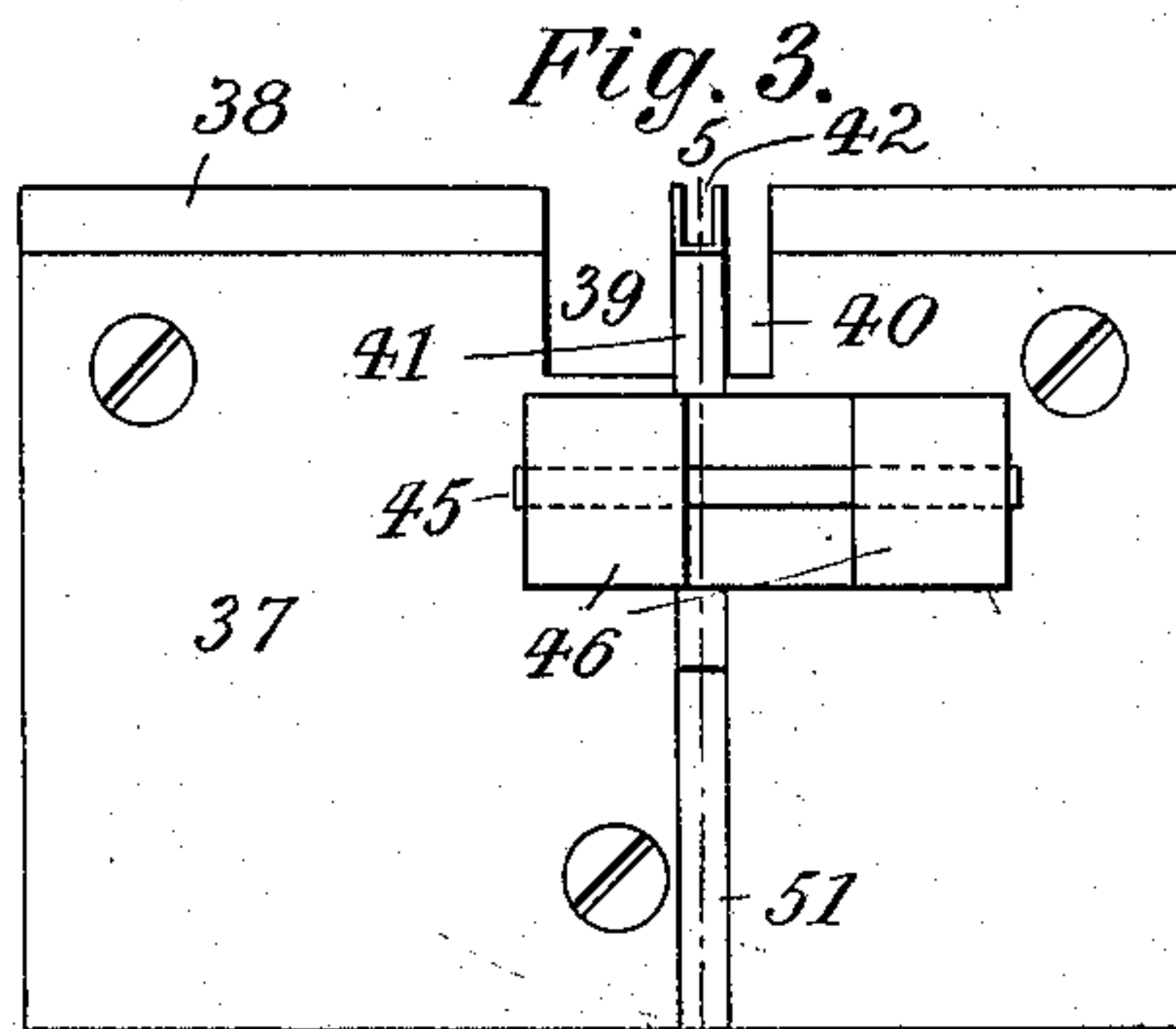


Fig. 4.

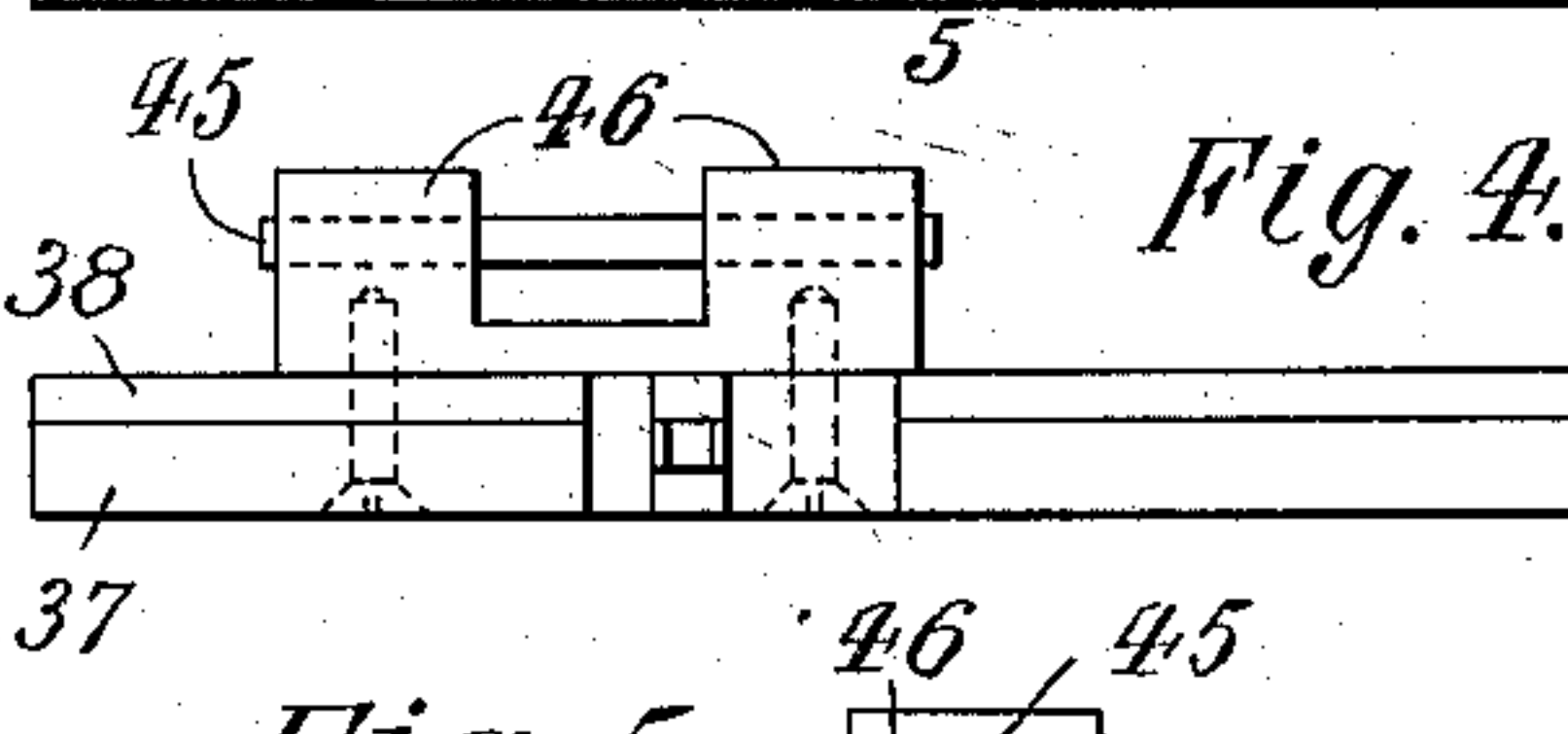


Fig. 5.

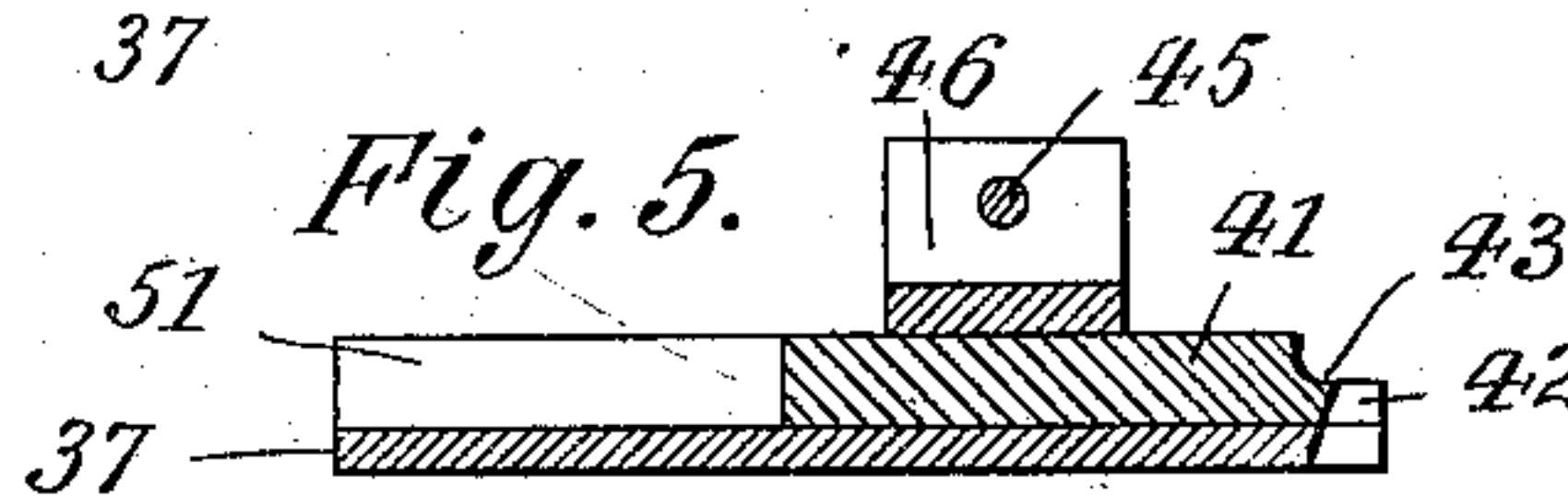


Fig. 10.

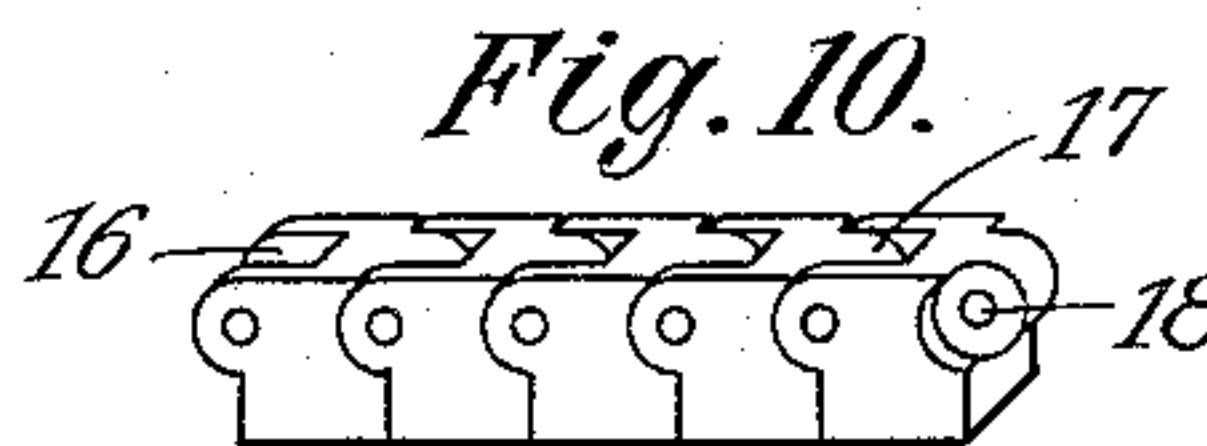


Fig. 6.

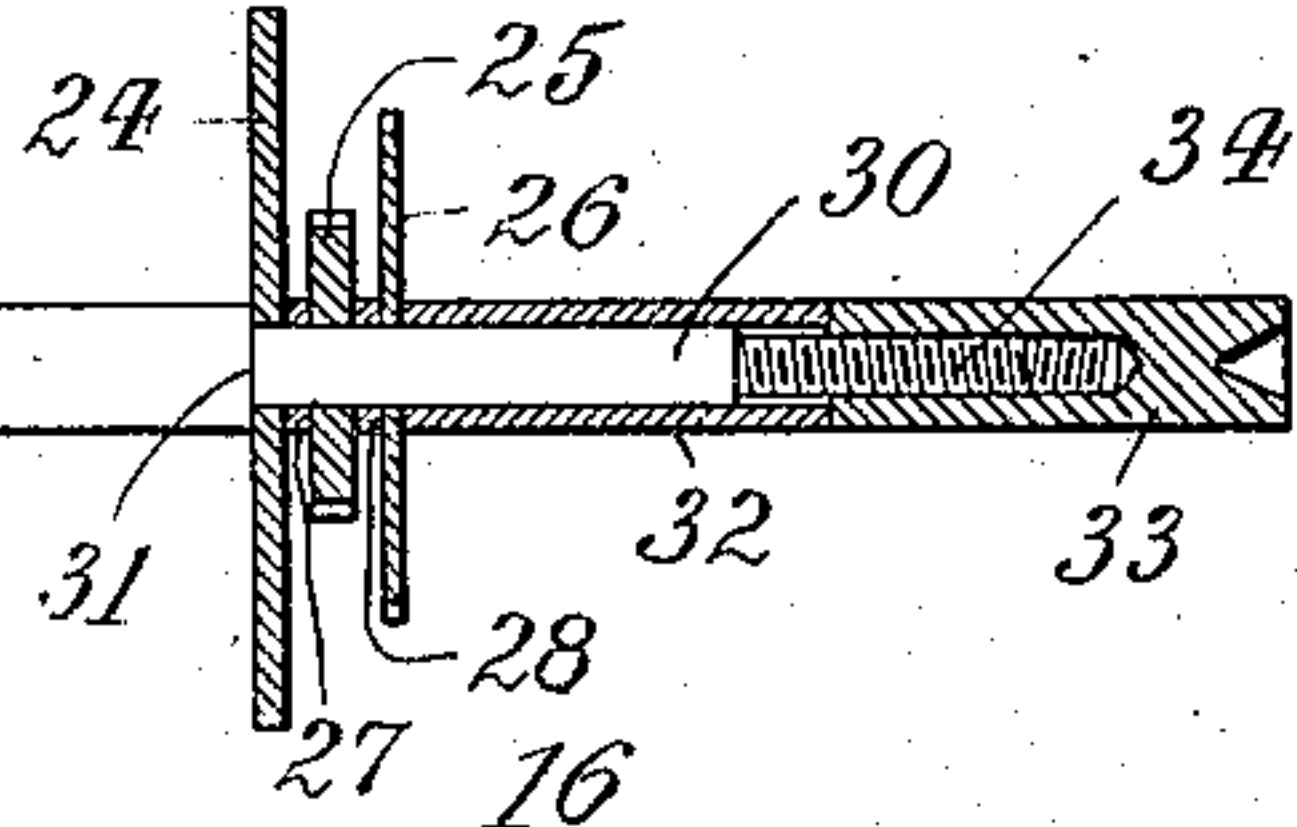


Fig. 7.

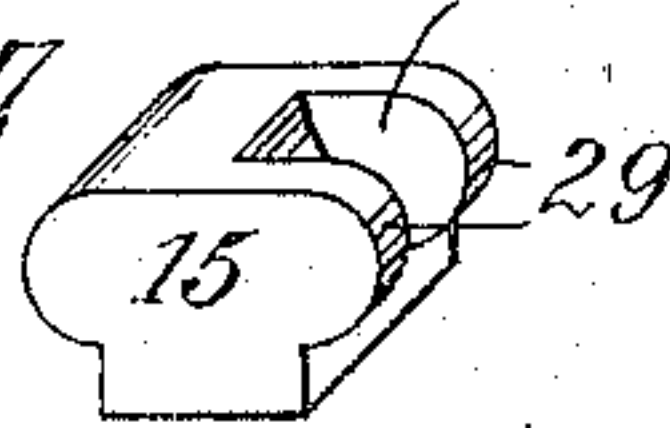
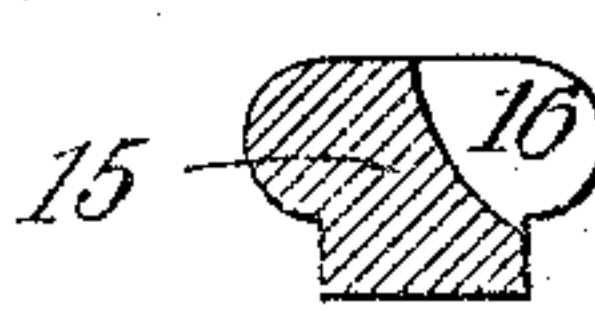


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM SCHENK, OF JERSEY CITY, NEW JERSEY.

TOOL FOR CUTTING AND GROOVING FLAT CHAIN-LINK BLANKS.

No. 848,051.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed November 17, 1906. Serial No. 343,808.

To all whom it may concern:

Be it known that I, WILLIAM SCHENK, a citizen of the United States, residing at Jersey City, Hudson county, State of New Jersey, have invented new and useful Improvements in Tools for Cutting and Grooving Flat Chain-Link Blanks, of which the following is a specification.

This invention relates to a tool for cutting a flat chain-link blank from a metal bar and for simultaneously grooving the link thus severed, the grooved section thus formed constituting the female member of the hinge-joint by which adjoining links are subsequently connected.

The tool is particularly adapted for the manufacture of jewelry-chains, jointed bracelets, and similar articles and permits the links for said articles to be formed in a quick and accurate manner without the employment of skilled labor.

In the accompanying drawing, Figure 1 is a plan of my improved tool, showing it secured to a lathe; Fig. 2, an end view thereof; Fig. 3, a plan of the work-holding plate with the clamping-lever omitted; Fig. 4, a rear view thereof; Fig. 5, a cross-section on line 5-5, Fig. 3; Fig. 6, a longitudinal section through the saw-spindle; Fig. 7, a perspective view of the link-blank formed by the tool; Fig. 8, a longitudinal central section thereof; Fig. 9, a perspective view of the completed chain-link; Fig. 10, a perspective view of part of a completed chain, and Fig. 11 a perspective view of the metal bar from which the blank is cut.

The bar 12 to be subdivided into links is provided at each side with a bead 13 and 14. The tool which forms the subject of this invention cuts or slices the flat link-blanks 15 from said bar and simultaneously forms a groove 16 in the bead 14 of said link. After the link has thus been formed bead 13 is reduced by a different tool to form a knuckle 17, Fig. 9. In assembling the links of a chain the knuckle 17 of one link is introduced into the groove 16 of the adjoining link and connected thereto by a pivot 18, as shown in Fig. 10, which illustrates the chain complete.

The tool comprises, essentially, a spindle which carries the cutting and grooving devices and a coaxing work-holder which presents the bar to be subdivided to such devices. The spindle 19 is adapted to receive continuous rotatory movement by means of a lathe, on the centers 20 21 of which it is sup-

ported, motion being transmitted to the spindle from disk 22 of the head-stock by arm 23. Upon spindle 19 are mounted, first, a disk 24, that constitutes a gage or stop; second, a circular groove-cutter 25, and, third, a circular saw 26. The distance between the inner faces of parts 24 26 corresponds to the thickness of the blank to be sliced off bar 12, while the thickness of cutter 25 corresponds to the width of groove 16 to be formed in said blank.

Cutter 25 is spaced from parts 24 and 26 by washers 27 28, the thickness of the washers corresponding to that of the lugs 29, that flank or define groove 16. Cutter 25 should be of less diameter than saw 26, which in turn is of less diameter than gage 24. For assembling the parts spindle 19 is provided with a reduced end or stem 30, over which disk 24 is slipped until it engages shoulder 31 of the spindle. The parts 27, 25, 28, and 26 are then successively mounted upon stem 30, saw 26 being engaged at its outer face by a tubular sleeve 32, surrounding stem 30. This sleeve is locked in position by a nut 33, screwed upon the threaded and reduced end 34 of the stem. By the means described the cutter 25, as well as the saw 26, may be readily removed and washers of different thickness may be substituted for washers 27 28, so as to adjust the device to various styles and dimensions of the blanks to be formed.

The slide-rest 35, by which bar 12 is presented to the cutters 25 26, is movable toward and away from spindle 19 by means of handle 36. Fast on slide-rest 35 is a work-holding plate 37, that projects rearwardly beyond the same and has an upper rear recess 38 for seating bar 12. Plate 37 is further provided with a slot 39 opposite disk 24 and with a second slot 40 opposite saw 26. Slots 39 40 are separated by an intervening partition or finger 41, having a slot 42, adapted to accommodate groove-cutter 25. An upper rear recess 43 on finger 41, alined with recess 38, forms a seat for the blank when severed. The size of disk 24 is such that when it contacts with the base of slot 39 cutter 25 has penetrated the blank to the depth desired, so that in this way the diameter of the disk determines the depth of groove 16.

Plate 37 forms the fixed member of a clamp, the movable member of which is formed by a dog or hand-lever 44, fulcrumed at 45 to lugs 46 of plate 37 and influenced by a spring 47. Dog 44 is provided with a pair

of jaws 48 49, separated by a slot 50, adapted to accommodate saw 26. Jaw 48 extends over the unsevered end of bar 12 to hold said bar to its seat 38, while jaw 49 extends over finger 41 to hold the severed blank to its seat 43.

Finger 41 is preferably made removable from plate 37, so that it may be replaced when necessary. As shown, it is held to plate 37 by engaging a transverse groove 51 of the latter.

The operation of the device will be readily understood. Dog 44 is swung up, and bar 12 is so seated upon plate 37 that its end abuts against disk 24, after which the dog is released to clamp the bar in position. The slide-rest being advanced, cutter 25 will now form groove 16, while saw 26 will simultaneously sever the blank from the bar. In this way by a single operation the blank is cut and grooved, uniformity of the work being insured by disk 24, which, as already stated, limits the advance of the slide-rest. When the blank has been formed as described, the slide-rest is retracted and dog 44 is swung up, so that the blank is discharged.

I claim—

1. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, substantially as specified.

2. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, a spaced gage mounted on the spindle at the other side of the groove-cutter, and washers intermediate the groove-cutter and the gage and saw, substantially as specified.

3. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than that of the groove-cutter, substantially as specified.

4. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than that of the groove-cutter, and the diameter of the gage being greater than that of the saw, combined with a workholder having a slotted rear edge adapted to contact with the gage, substantially as specified.

5. In a tool of the character described, a spindle, a groove-cutter mounted thereon, a spaced saw mounted on the spindle at one side of the groove-cutter, and a spaced gage mounted on the spindle at the other side of said groove-cutter, the diameter of the saw being greater than that of the groove-cutter, and the diameter of the gage being greater than that of the saw, combined with a workholder having a slotted finger opposite the groove-cutter, and a slotted rear edge opposite the saw and gage, said edge being adapted to contact with said gage, substantially as specified.

Signed by me at New York city, Manhattan, New York, this 15th day of November, 1906.

WILLIAM SCHENK.

Witnesses:

EMIL SENIUS,
KARL KOCH.