

No. 768,058.

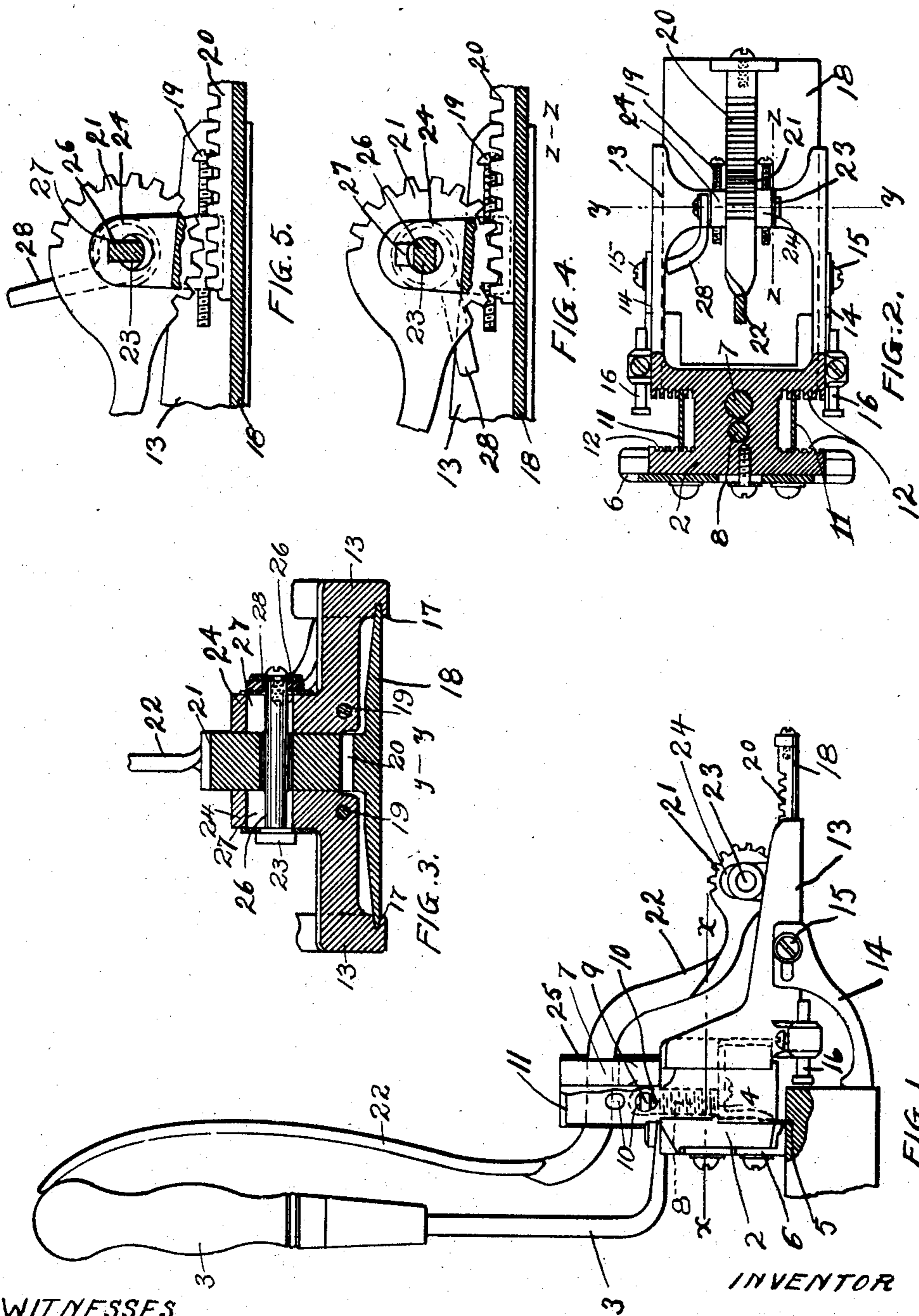
PATENTED AUG. 23, 1904.

J. A. MACKENZIE.
HINGE MORTISING MACHINE.

APPLICATION FILED AUG. 15, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES.
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2 SHEETS—SHEET 2.

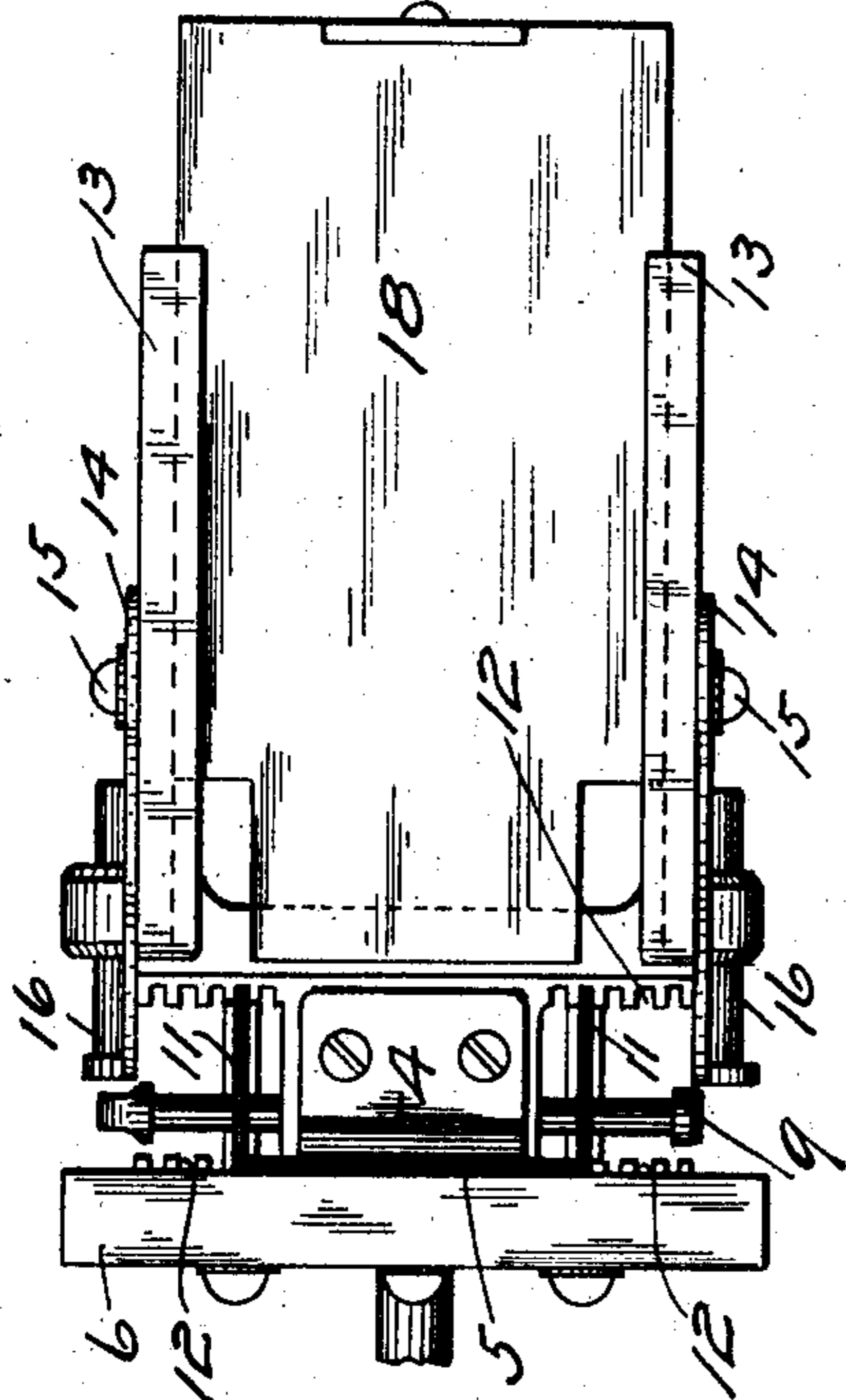


FIG. 7.

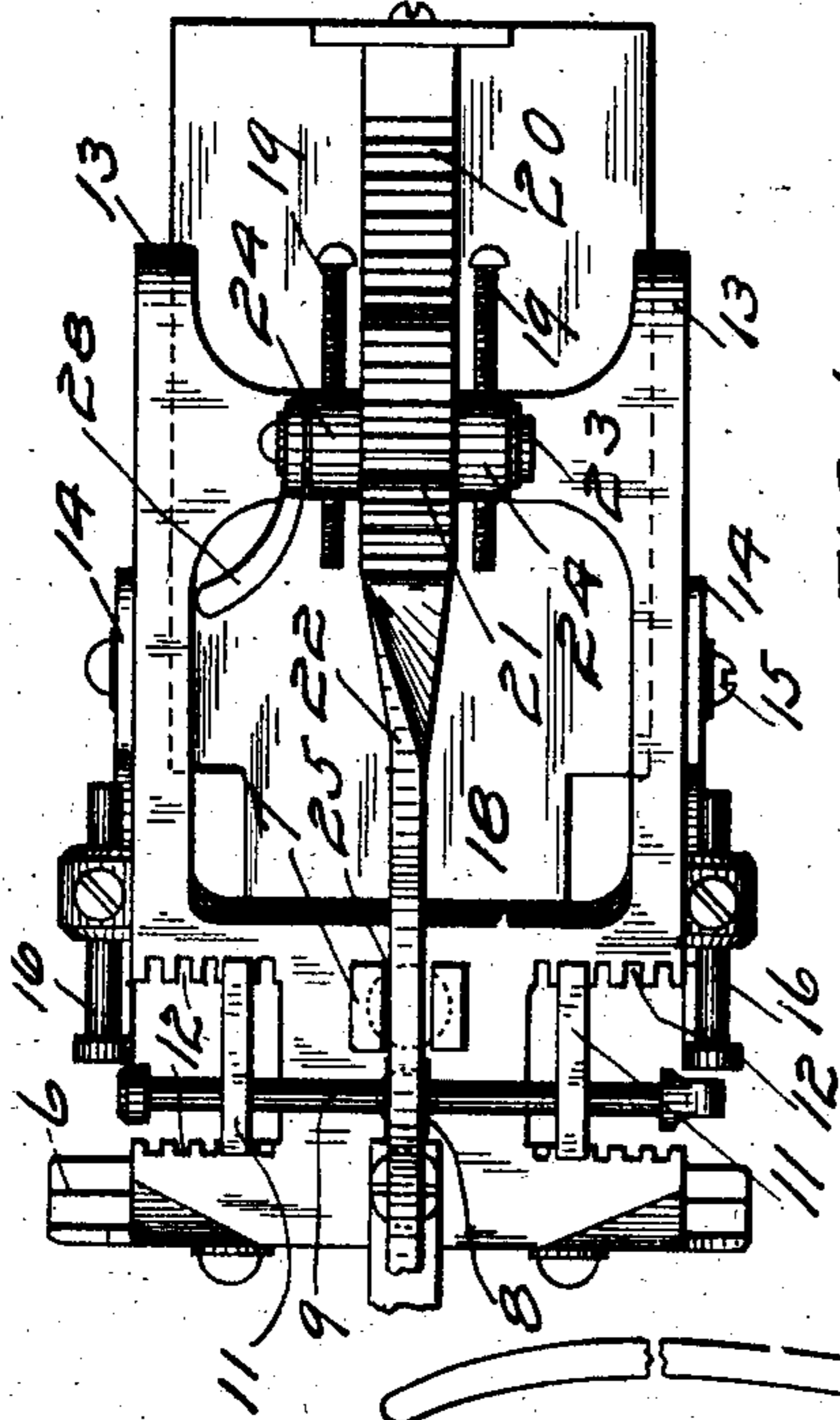


FIG. 6.

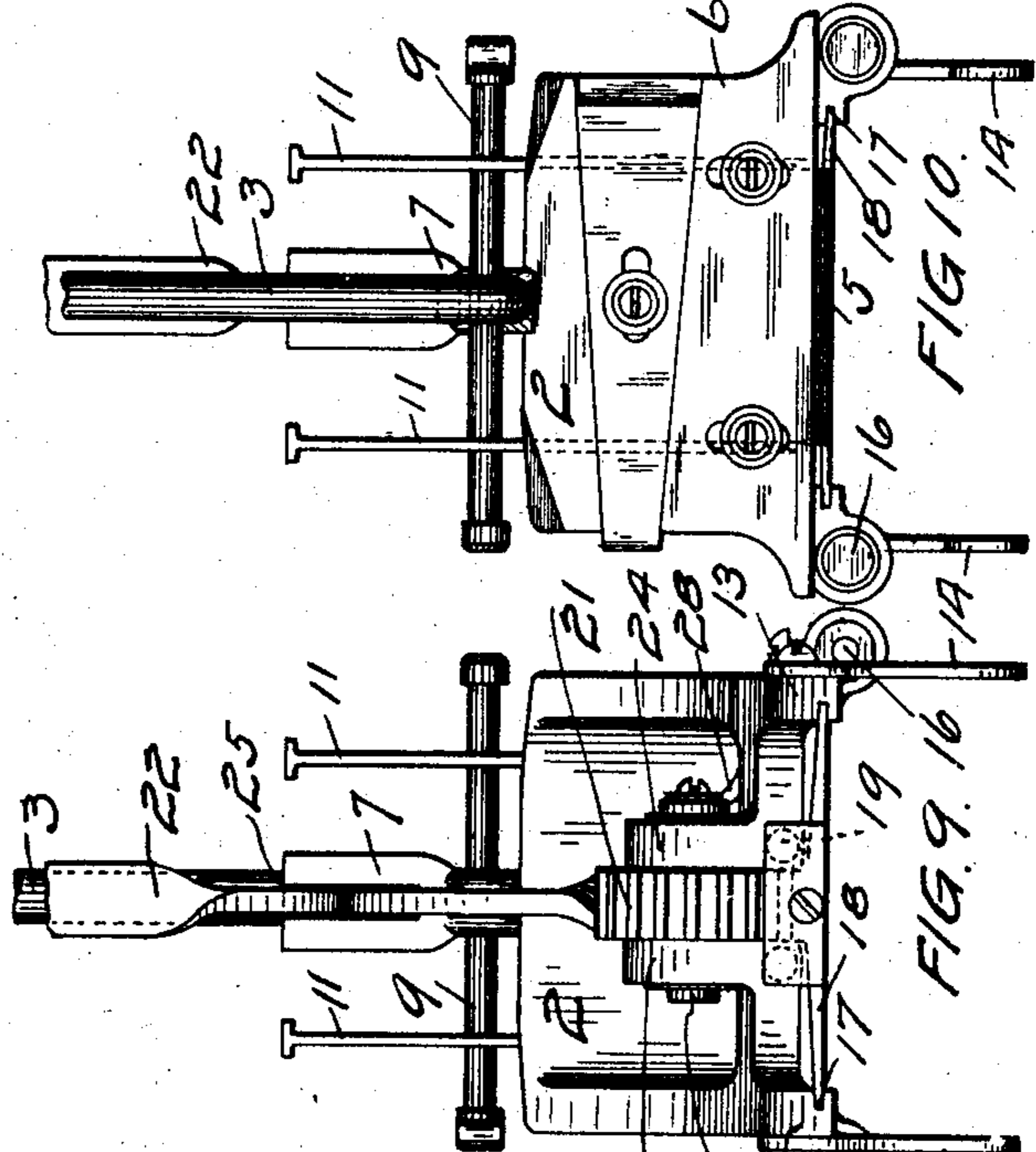


FIG. 9.

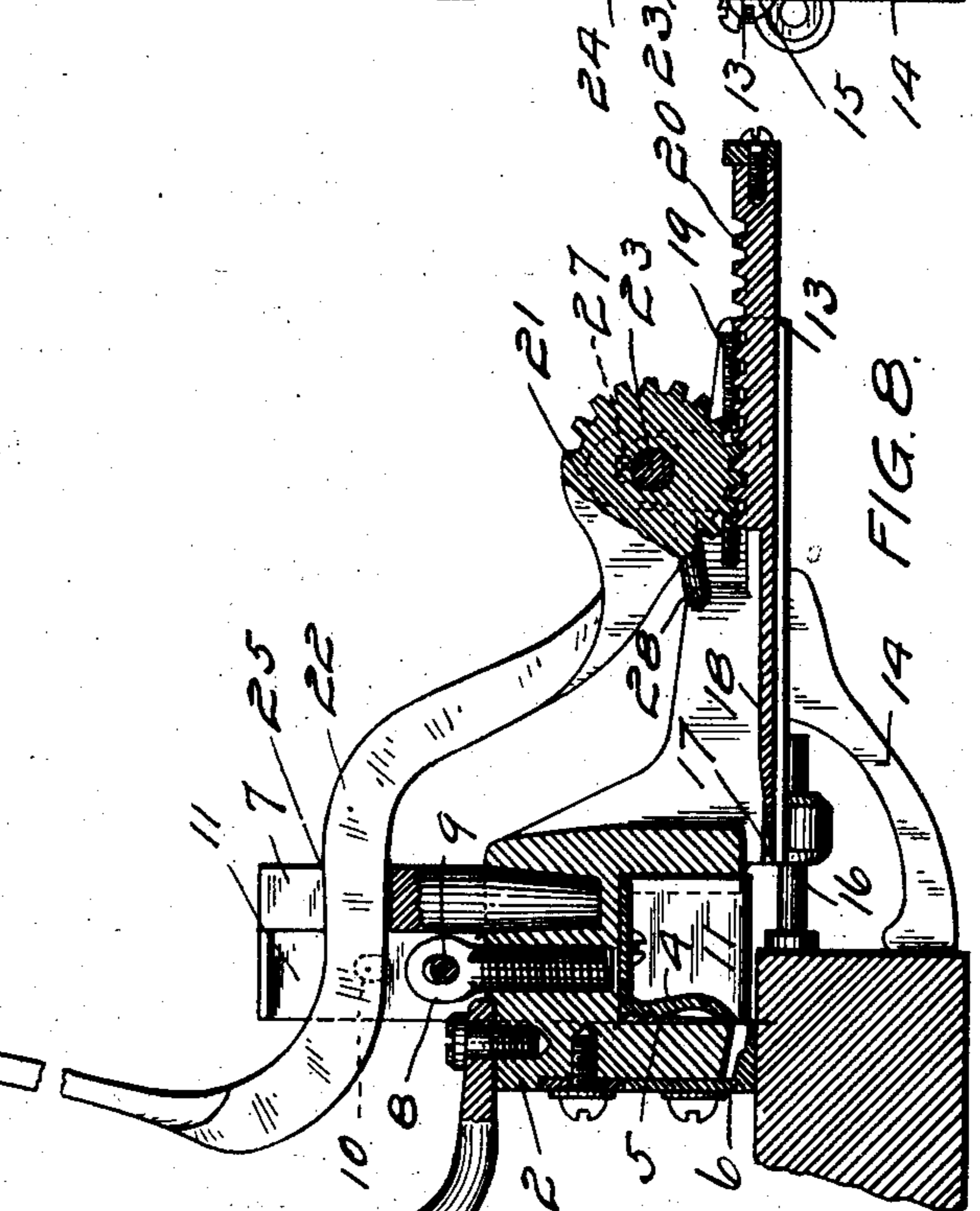


FIG. 8.

WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES A. MACKENZIE, OF MINNEAPOLIS, MINNESOTA.

HINGE-MORTISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 768,058, dated August 23, 1904.

Application filed August 15, 1903. Serial No. 169,578. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. MACKENZIE, a citizen of the United States, residing at Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Hinge-Mortising Machines, of which the following is a specification.

This invention relates to the class of machines or tools designed for cutting mortises extending in from the edge of a wooden piece to receive the leaves of hinges.

The object of my present invention is to provide a tool that can be readily adapted or adjusted to form mortises of different length.

A further object is to provide means for operating the horizontal cutting-knife.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation, partially in section, of a hinged mortising-tool embodying my invention. Fig. 2 is a section on the line $x x$ of Fig. 1. Fig. 3 is a section on the line $y y$ of Fig. 2. Fig. 4 is a detail section on the line $z z$ of Fig. 2, showing the gear in position to operate the horizontal-sliding knife; and Fig. 5 is a similar view showing the gear raised to release the knife and permit its removal. Fig. 6 is a plan view of a tool embodying my invention. Fig. 7 is a bottom view of the same. Fig. 8 is a vertical section through the middle of the tool. Fig. 9 is a front view of the tool. Fig. 10 is a rear view.

In the drawings, 2 represents the head or stock of the tool provided with a suitable handle 3.

4 is a clamp-block for securing the normally fixed knife 5 in position, the depth of the cut of said knife being regulated by the adjustable plate 6. Several of these knives with cutting edges of different length are provided to suit the distance between the side knives.

7 is a post mounted in the stock or head, upon which the blow is struck with a hammer to force the fixed knife into the wood.

8 represents a pin mounted in the base of the tool and having a hole in its upper end to receive an oscillating lever 9, said hole being of sufficient size to permit the free vertical movement of the ends of said lever, and the pin 8 forms a fulcrum therefor. The ends of the lever 9 are adapted to enter holes 10 in vertically-slidable knives that are adapted to cut across the grain of the wood and form the ends of the mortise. These knives are preferably provided with a plurality of holes to permit their vertical adjustment upon the lever 9.

To adapt the tool for forming mortises of different length, I provide a series of vertical guideways 12 in the stock, in which the knives 11 are slidable, and these guideways permit the said knives to be adjusted toward or from each other, according to the length of the mortise that it is desired to cut. The lever 9 is made of sufficient length to allow the adjustment of the knives 11.

13 represents a foot-piece or bracket projecting horizontally from the stock and supporting a horizontally-sliding knife, as hereinafter described.

14 represents gage-arms having slotted ends that are secured to the bracket 13 by screws 15.

16 represents horizontally-adjustable pins mounted on the bracket 13 and arranged to engage the wood and regulate the width of the cut therein.

The bracket 13 is provided with a guideway 17 for a horizontally-arranged knife 18, that operates substantially at right angles to the knives 5 and 11 to cut out the chip and complete the mortise. The inward movement of this knife 18 is regulated by stops 19, which prevent it from coming in contact with the fixed knife 5, and a rack-bar 20 is centrally arranged on said knife 18 in position to be engaged by the teeth of a gear 21, provided on a lever 22, that oscillates on a pin 23, mounted in bearings in brackets 24. When not in use, the lever 22 drops into a slot 25 in the post 7; but when lifted out of the said slot and moved away from the handle 3 the gear 21, engaging the rack-bar 20, will force the knife 18 into the wood to complete the mortise.

It is desirable to provide convenient and easily-operated means for permitting the dis-

engagement of the knife 18 from its gear, and I therefore provide the pin 23 with flattened ends 26, that are adapted when turned to a certain point to enter notches 27, provided in the brackets 24. To operate the said pin, I provide a lever 28 on one end thereof, by means of which the person using the tool can revolve the pin 23 to a position where its flattened ends will allow the notches 27 and it to be raised and the gear 21 disengaged from the teeth of the rack-bar. (See Figs. 4 and 5.)

The following is a description of the manner of using my improved tool: Having set the depth and width gages to make the desired cut and adjusted the tool on the wood with the gages pressing firmly thereon, the person using the tool will strike the post 7 a blow with a hammer or mallet, forcing the knife 5 into the wood in line with its grain to make the cut for the inner side of the mortise. The end knives 11 are then driven into the wood across the grain, and this having been done the lever 22 is operated to press the horizontally-operating knife 18 into the wood and cut out the chip to complete the mortise. Whenever desired, the length of the mortises can be varied by the simple adjustment of the end knives toward or from each other and the substitution of a horizontal knife having a cutting edge of suitable length.

I claim as my invention—

1. A mortising-tool, comprising a stock or

head, a side knife fixed therein, a series of vertically-arranged knife-guides provided in said head, end knives slidably arranged in said guides and adapted to be driven, suitable depth and width gages, and a horizontally-operating knife for removing the chip slidably mounted in said head, and means for operating said knife.

2. A mortising-tool comprising a stock or head and side knives fixed therein, a plurality of vertically-arranged knife-guides in said head, end knives slidably arranged in said guides and adapted to be driven, and a horizontally-operating knife slidably mounted in said head, and means for operating said knife.

3. In a hinge-mortising tool, the combination, with a foot or bracket, of a knife slidably mounted therein, a rack-bar provided on said knife, a lever having teeth to engage said rack-bar, a pin having flattened ends whereon said lever is mounted, bearings for said pin on said bracket, said bearings having notches to receive said flattened ends when said pin is revolved to a certain predetermined position, and means for revolving said pin.

In witness whereof I have hereunto set my hand this 8th day of August, 1903.

JAMES A. MACKENZIE.

In presence of—

RICHARD PAUL,
S. V. GRIFFIN.