

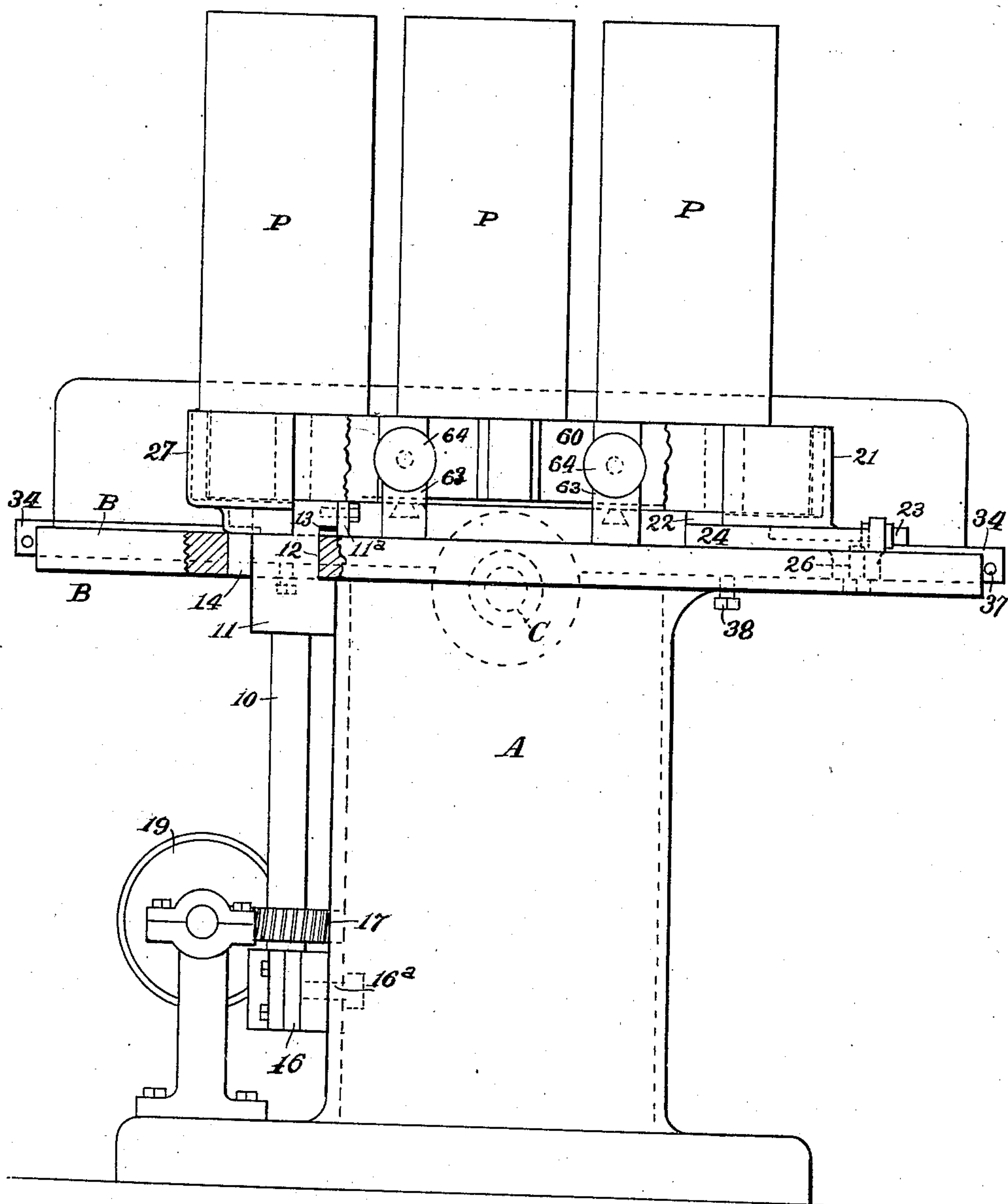
995,756.

W. G. ZIMMERMAN.
EDGER,
APPLICATION FILED JULY 6, 1910.

Patented June 20, 1911.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES.

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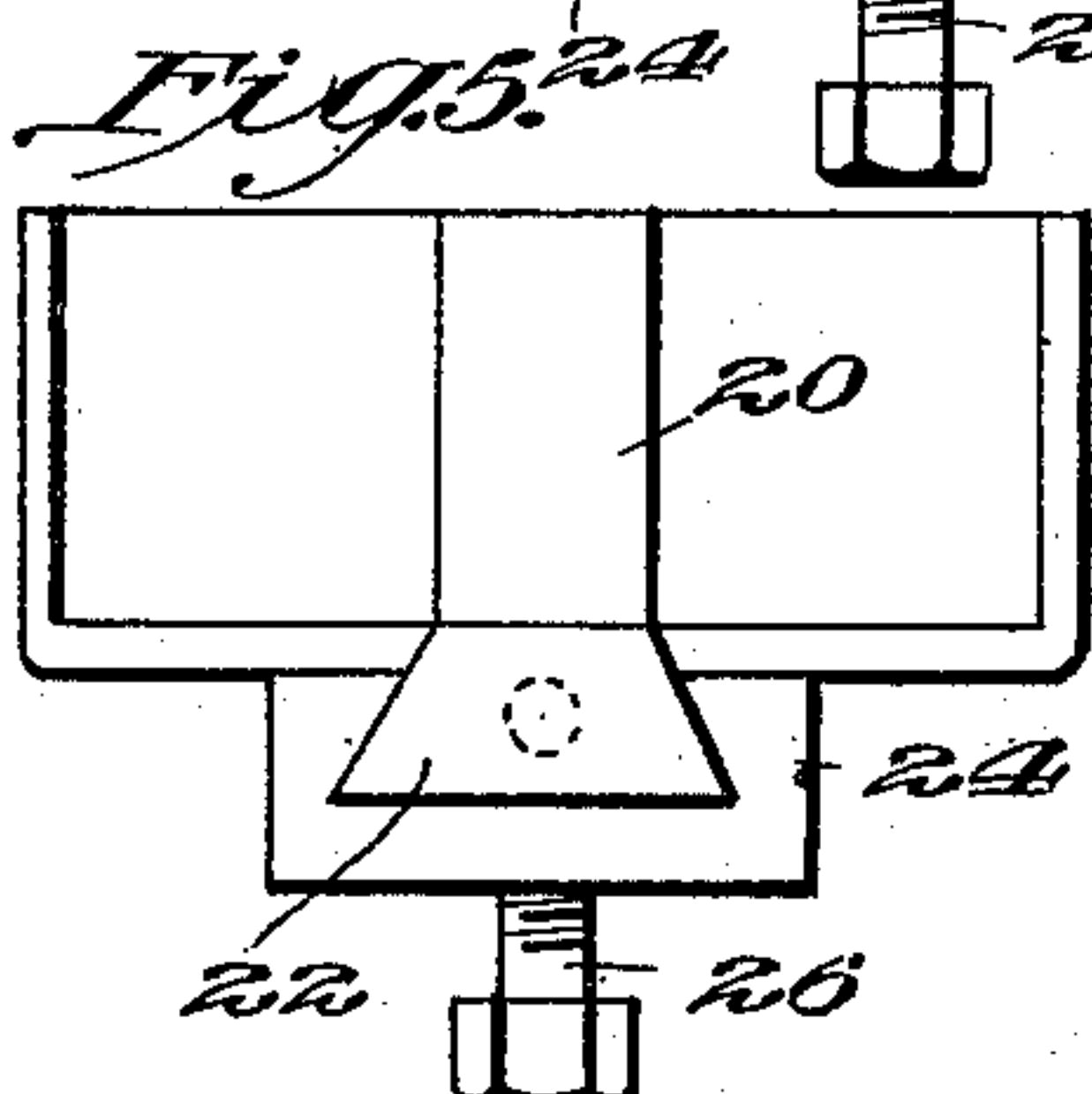
EDGER.

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3 SHEETS—SHEET 2.

Fig. 4.



Ex. 9.6.

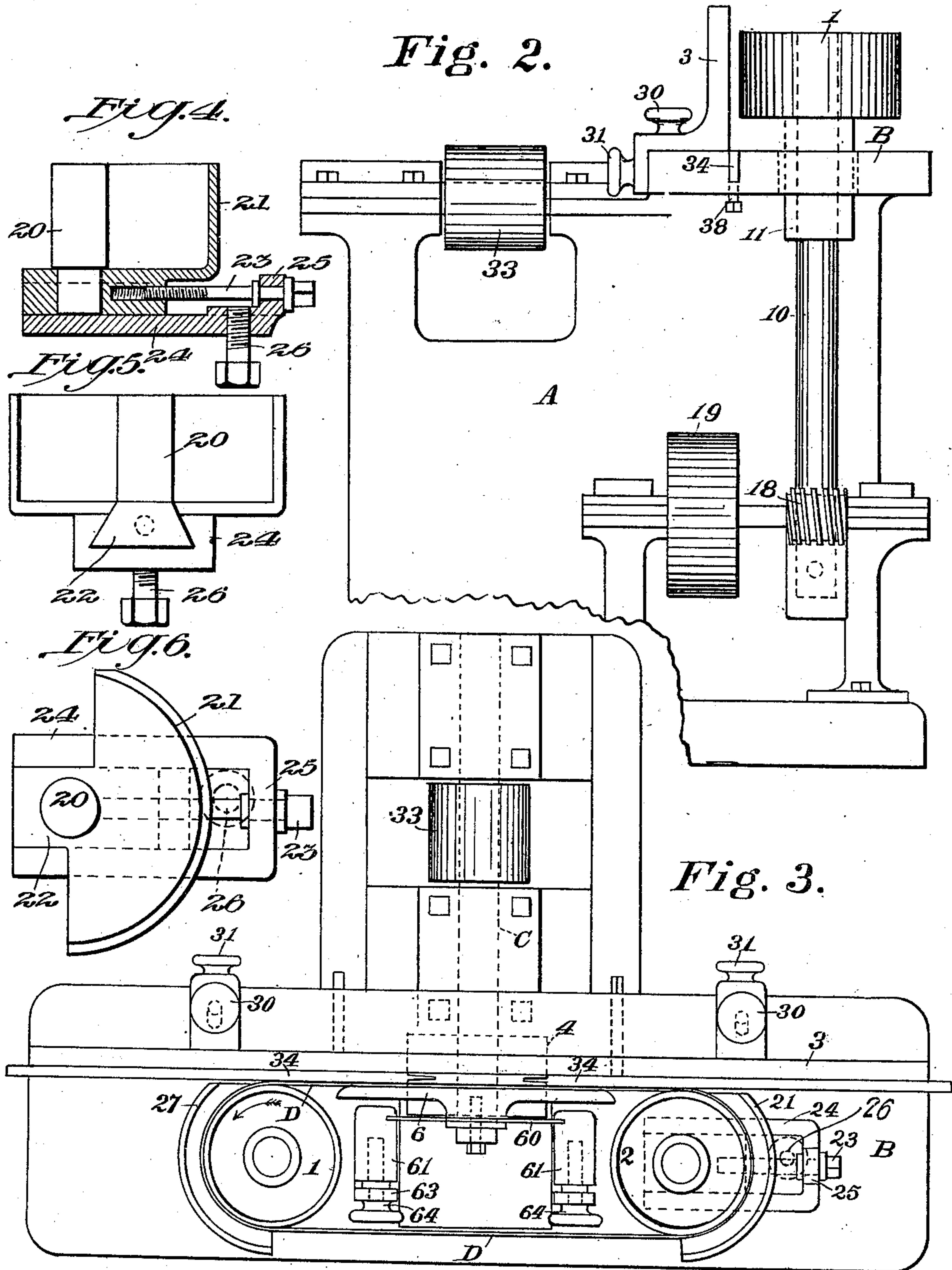
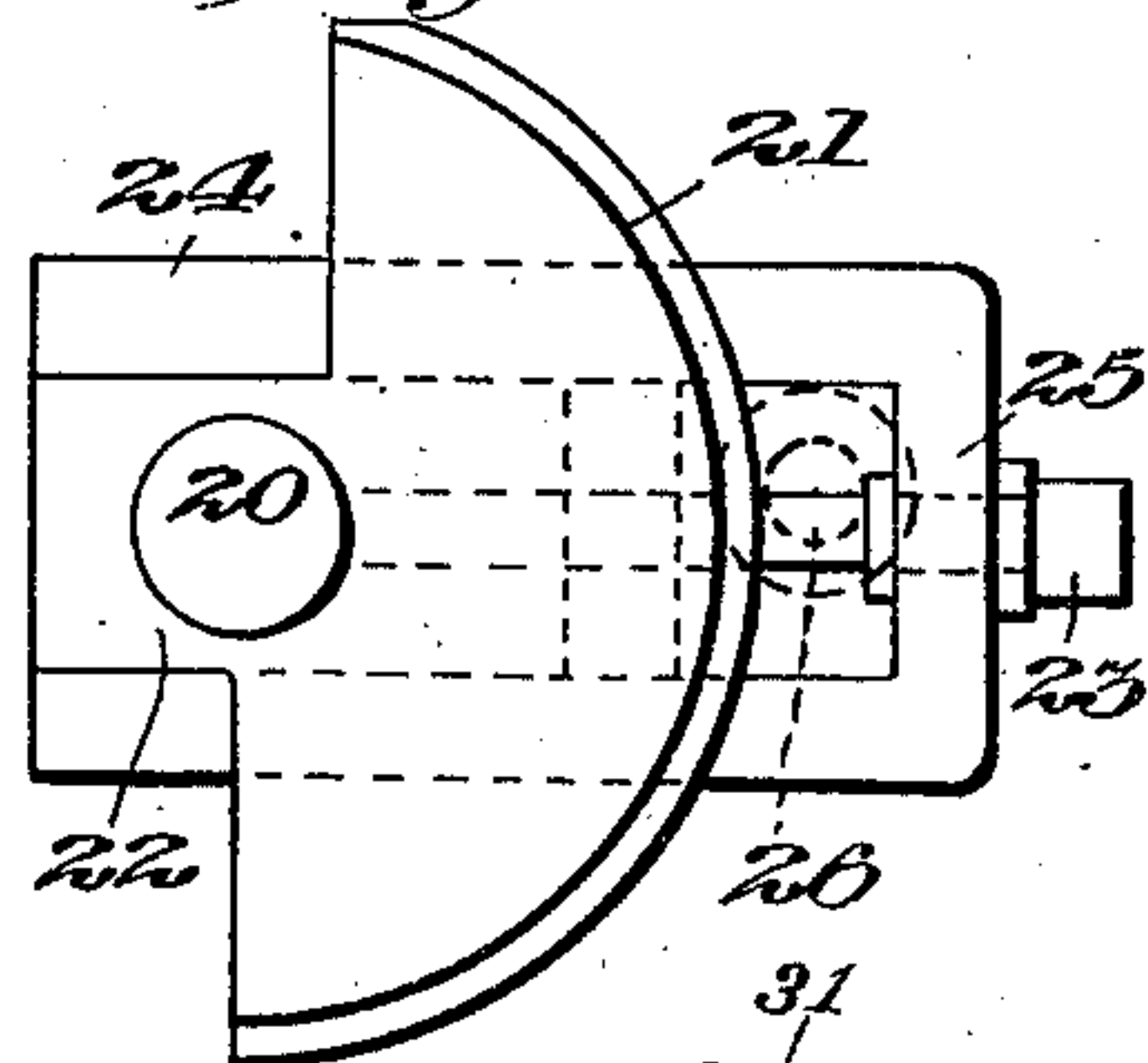


Fig. 3.

WITNESSES.

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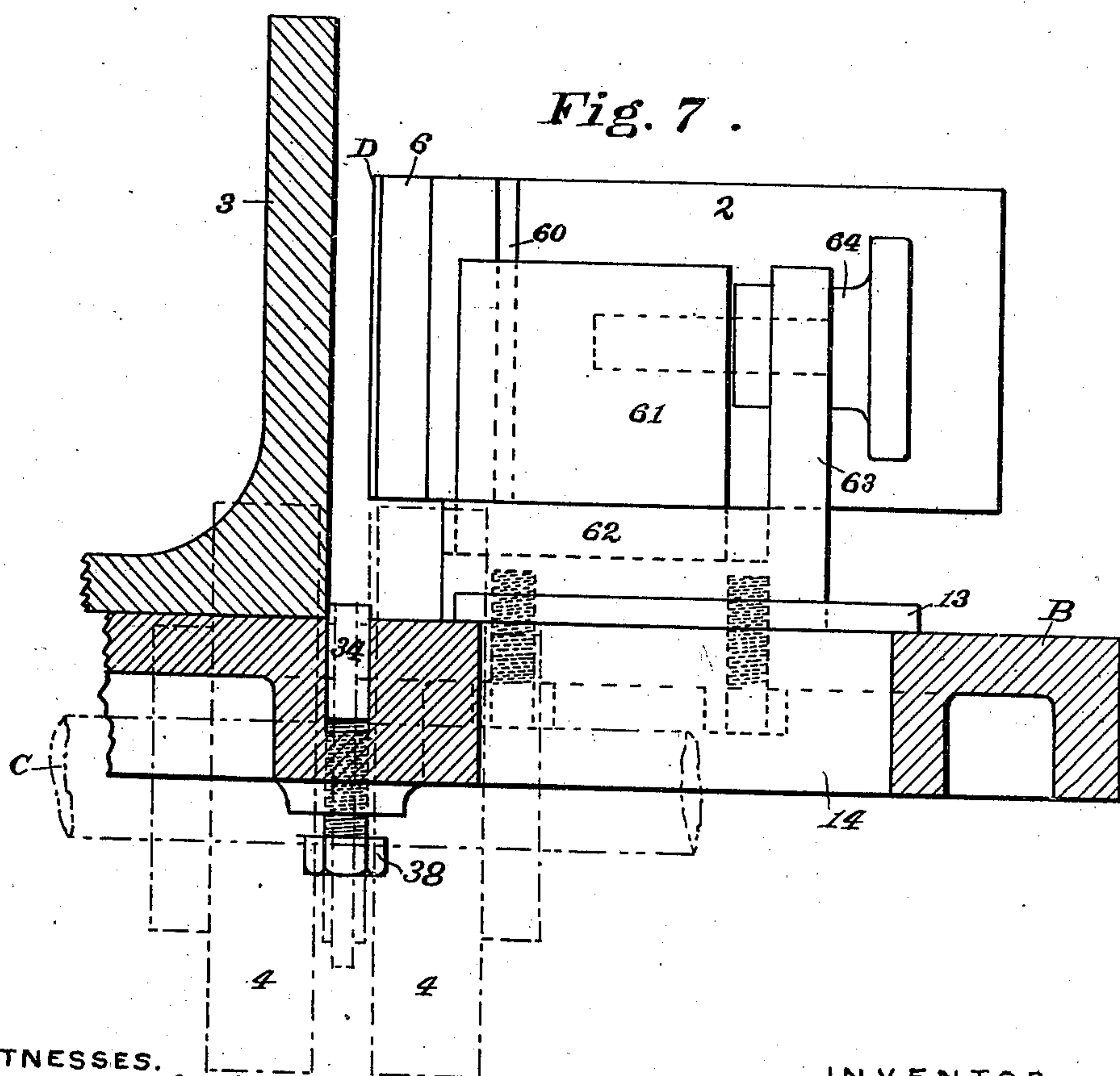
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3 SHEETS-SHEET 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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EDGER.

995,756.

Specification of Letters Patent. Patented June 20, 1911.

Application filed July 5, 1910. Serial No. 570,508.

To all whom it may concern:

Be it known that I, WILLIAM G. ZIMMERMAN, a citizen of the United States, residing at Everett, in the county of Snohomish, State of Washington, have invented a new and useful Improvement in Edgers, of which the following is a specification.

My invention relates to an improvement in edgers, and comprises certain novel parts and combinations of parts which will be hereinafter described and particularly pointed out in the claims.

The object of my invention is to simplify such machines and improve their product.

In the drawings I have shown my invention embodied in the form which is now preferred by me.

Figure 1 is a side elevation of the machine. Fig. 2 is an elevation taken from an end, or with a point of view at right angles to that of Fig. 1. Fig. 3 is a plan view. Figs. 4, 5, and 6 are, respectively, central sectional elevation, end elevation, and plan, of the mechanism for carrying one of the feed pulleys. Fig. 7 is a cross section through the bed showing the adjusting mechanism for the belt backing-plate and also the side movement of the driving feed pulley.

My invention pertains to machines for shaping and dressing the end or side edges of boards. As herein shown it has been particularly designed for shaping the edges of panels used in making paneled doors. It is obvious that it may be used for shaping the edges of boards for various other uses, the chief changes needed for adapting it to the new use, in all probability, consisting in supplying it with cutter blades of the proper shape and adjusting the feeding mechanism. Such changes as these in no way affect the scope of the invention.

In describing my invention specific reference will be made to the particular mechanism shown and its specific purpose; it is, however, to be understood that this is in no way to limit its evident and proper scope, as these specific references are given only in connection with the description of that specific embodiment which has been chosen as best illustrating my invention.

I have shown my invention as mounted upon a standard or frame A which is provided with a table B which carries the principal working parts. Upon this table are mounted two pulleys 1 and 2, their axes be-

ing vertical, about which pulleys passes the feed belt D. Coöperating with this is a fixed guide 3, the two forming a space of a width to receive the boards P, which are to be edged. The fixed guide 3 is adjustable by means of the clamping screws 30 and 31, the former passing through slots in the guide 3 and the latter being more properly adjusting screws.

The feed pulley 1 is mounted upon a shaft 10 which is driven through worm gear 17, worm 18 and pulley 19, the latter being driven by belt from the same countershaft as is the shaft which carries the cutter heads 4 and 5. The other feed pulley 2 is shown as an idler, that is, is driven by the belt D.

The pulleys should preferably be automatically capable of yielding a certain amount in a direction transverse the direction of feed, to accommodate the device to possible inequalities in the thickness of the boards being operated upon. The manner in which I have secured this result is as to pulley 1 as follows: The lower bearing 16 of the shaft 10 is supported from the frame by a single pin or bolt 16^a so that it may rock thereon. This movement is, however, very slight. The upper bearing of this shaft is in a block 11, which extends through an opening 14 in the table and the block is provided with a channel 12 in one side which spans the edge of the table. At this point the journal block 11 has a sliding bearing against the vertical surface of the table. The opening 14 in the table is longer than the width of the block 11 in the direction transverse of the feed movement, so that it may have a short movement in this direction. To hold the journal block 11 securely against this sliding surface I secure a strip 13 upon the upper surface of the table and make the channel in the side of the block 11 of sufficient width to span the table and this strip. The strip 13 is of a width equal to the depth of the channel 12 in block 11, so as to bring its outer surface flush with the surface of the journal block 11, and a plate or bar 11^a is secured to the block 11 so as to engage the outer surface of the strip 13. The pull of the belt D acts to hold the block 11 snugly against the sliding surface of the table. By this, or an equivalent, construction this pulley may move toward or from the fixed guide 3, as required by the thickness of the boards be-

ing operated on. While a spring or weight may be used to hold the pulley toward the guide 3, this is hardly essential, as the boards are about being discharged when they reach this point and the run of belt extending between the pulleys is held toward the guide 3 by other means. The pulley 2 is also mounted to have a compensating movement in the same direction. This is accomplished by means which are shown in detail in Figs. 4, 5, and 6. A block or plate 24 lies upon the surface of the table and is held thereon by a single pivot bolt 26, whereby it is free to swing in a horizontal plane supported by the table. This block 24 carries, either directly or indirectly, the stud or shaft 20 upon which pulley 2 turns. The pivot bolt 26 should preferably be located rather nearer the guide 3 than the center of the pulley when in use, whereby the tension of the belt D tends to draw the pulley toward the guide 3 and the work. While the shaft of this pulley may be supported directly upon the plate 24, I prefer to support it indirectly thereon, thereby securing facility of adjustment of the tension of the belt. The shaft 20 is, therefore, secured to a block 22 which is adjustably secured to the plate 24 by a dovetail sliding joint, as is clearly indicated in Fig. 5. The two parts are held in position and adjusted to secure the desired tension by means of a bolt 23 which passes through an arm 25 of plate 24 and enters a threaded hole in the block 22. The block 22 is also provided with a flange 21 which surrounds the outer part of the pulley and constitutes a belt guard. The other pulley 1 is also provided with a similar belt guard 27, which, however, is shown as secured to the table B.

The belt is held against the boards between the pulleys by a backing plate 6 which has a polished surface bearing against the belt. This plate is preferably held against the belt by the action of a spring so as to be yielding to variations of thickness in the boards. The form of spring which I have found to be most effective consists of a bar or plate 60 secured by its middle to the back of plate 6 and supported at its ends. Such a spring holds the plate securely against displacement in every direction except transversely of the feed movement, while other forms of spring would permit irregular movement of the plate or require special steadying mechanism.

The spring ends should preferably be held by adjustable members so that it can be adjusted in tension and also to accommodate it to various thickness of stock. I have, therefore, secured the ends of the spring in grooves in the side faces of adjustable blocks 61, shown in Figs. 1, 3, and 7. These blocks are supported by a dovetail joint upon blocks or elevations 62 carried by the

table, so as to be adjustable toward and from the belt. An arm 63 extending upward to the rear of the block 61 carries an adjusting bolt 64 which engages the sliding block 61 and determines its position.

The belt D and the fixed guide 3 form a narrow channel into which the boards are placed upon their edge. The belt D may be of rubber so as to have a secure feeding grip upon the boards. These will be carried along with the belt and be thereby presented to the cutter heads. The bottom of this channel consists of two bars 34, which lie in grooves in the table or bed, and are adjustable vertically, by means of bolts or screws 38. Their inner ends 36 are also reduced in thickness so as to enter between the cutter heads which dress or shape opposite sides of the board. These ends are also curved to fit closely about the curve of the cutter heads.

The cutter heads 4, are fixed upon a shaft C, located beneath the table, the cutter heads being positioned to dress the sides and edges of the boards as they pass between the fixed guide 3 and the movable belt guide and feed D. The type of cutter head employed will vary with the character of the work being done and the shape desired to be given the edge parts of the board.

In use, the boards to be edged are placed upon their edge between the pulley 2 and the guide 3. The frictional grip of the belt D will carry the board along with it, past the packing plate 6 and the cutter heads 4 and discharge it after passing the pulley 1. It is evident that, by supplying an additional set of cutter heads and a guide, like the guide 3, to act in coöperation with the opposite run of the belt D, the capacity of the machine may be doubled. When this is done it will be found desirable to make the pulleys 1 and 2 of larger size, or otherwise provide more room between the opposite runs of the belt. This is desirable chiefly to make more room for handling the stock.

I claim herein as my invention—

1. In an edger, the combination with the edging cutters, of a fabric belt controlling the presentation of the work to the cutters, pulleys for said belt, and a supporting mount for one of said pulleys comprising a frame having a pivot at one end and guide-ways extending away from said pivot, a block mounted to slide in said guide-ways and carrying the journal for the pulley, and an adjusting member connecting said frame and block.

2. In an edger, the combination with the edging cutters, of a fabric belt controlling the presentation of the work to the cutters, pulleys for said belt, a backing plate engaging the inner surface of the belt between pulleys, a spring bar secured to and supporting said backing plate and extending

in the direction of the feed, blocks having supporting engagement with the ends of said spring bar, guiding supports for said blocks permitting movement toward and
 5 from the belt, and a controlling connection between said blocks and their supports, whereby the tension of the spring bar may be controlled.

3. In an edger, the combination with the
 10 edging cutters mounted to turn upon a horizontal shaft, two vertical shafts rotative upon opposite sides of the line of the shaft carrying the edging cutters and upon the same side of the plane of the said cutters,
 15 pulleys mounted upon said shafts above the level of the edging cutters, a feed belt extending about said pulleys one of said shafts extending downwardly and having a power driving connection therewith, a bearing
 20 block for the said shaft mounted to slide in bearings toward and from the plane of the edging cutters, a frame carrying the other shaft and having a pivot support located nearer the plane of the cutters and farther
 25 from the cutter shaft than the center of its shaft, and means for adjusting said shaft toward and from the cutter shaft.

4. In an edger, the combination with the cutters of a feed belt having its runs in
 30 planes substantially parallel with the plane of the cutters, a supporting mount for one of said pulleys comprising a frame having a pivot support at its end farthest from the cutter shaft and guideways extending toward
 35 the cutter shaft; a block mounted to slide in said guideways and carrying the journal for the pulley, and a tension screw engaging said frame and block to adjust the position of the pulley.

40 5. In an edger, the combination with the edging cutters of a feed belt controlling the presentation of the work to the cutters, pul-

leys for said belt, a journal member for one pulley mounted to slide toward and from the plane of the cutters, a supporting mount
 45 for the other pulley comprising a frame having a pivot support at one end and guideways extending substantially in the direction of the feed belt, a block mounted to slide in said guideways and carrying a
 50 journal shaft for the pulley located farther from the plane of the work than the pivot support of the frame, and a tension screw controlling the position of the block in the
 55 guideways.

6. In an edger, the combination with the edging cutters, a feed belt controlling the presentation of the feed to the cutters, and pulleys carrying said belt, of a backing plate
 60 engaging the opposite side of the run of the belt which engages the work, a spring bar secured by its middle to the backing bar and extending lengthwise the feed run of the
 65 belt, and supports for the ends of said spring bar adjustable toward and from the feed run of the belt.

7. In an edger, the combination with the edging cutters, a feed belt controlling the presentation of the work to the cutters, and pulleys carrying said belt, of a backing plate
 70 engaging the opposite side of the belt to hold it against the work, a spring bar secured by its middle to the backing plate and extending lengthwise the feed run of the
 75 belt, slide blocks secured to the ends of the spring bar, guides for the slide blocks and means for adjusting the blocks upon said guides toward and from the feed run of the belt.

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Witnesses:

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