

No. 686,700.

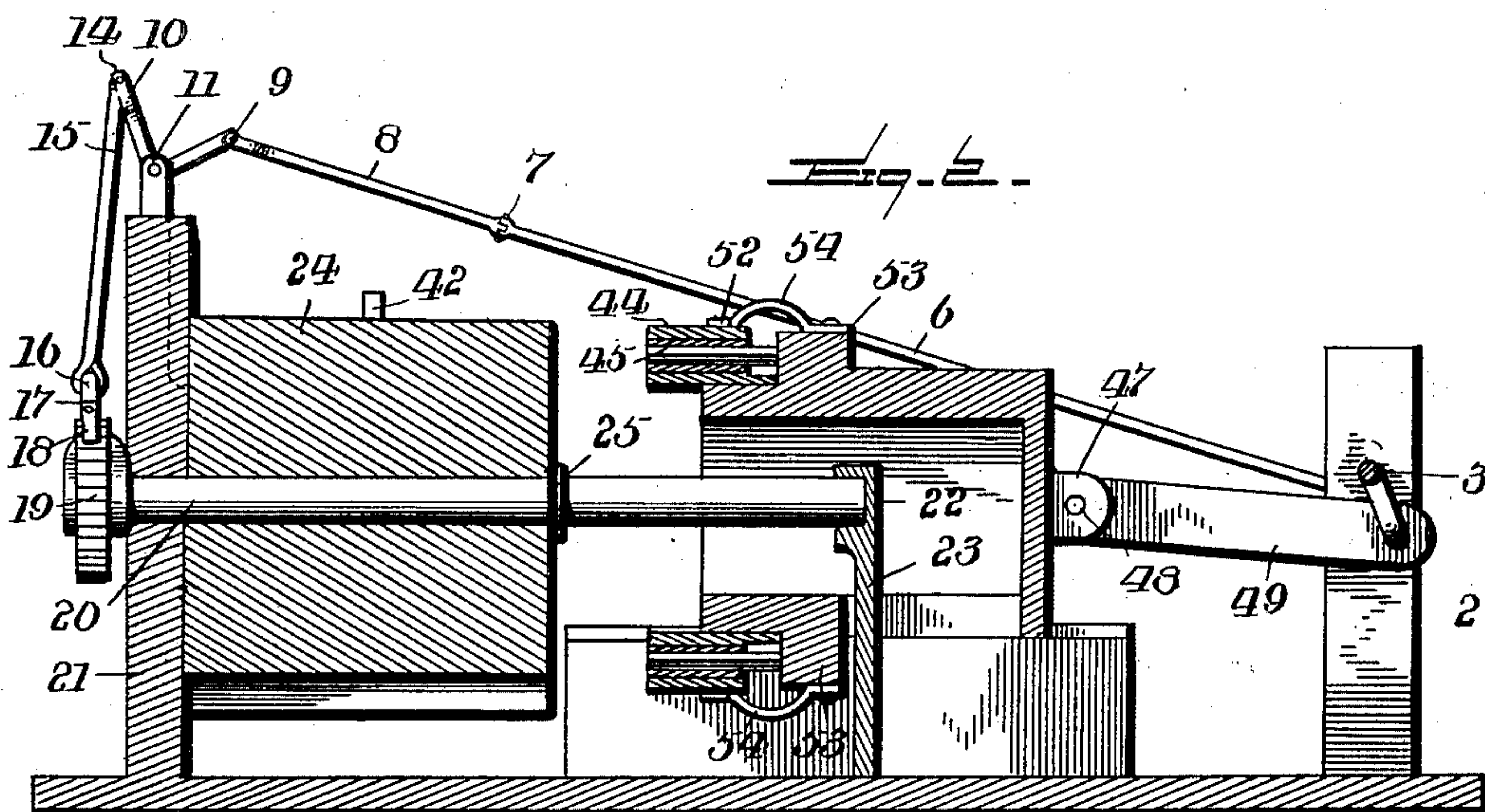
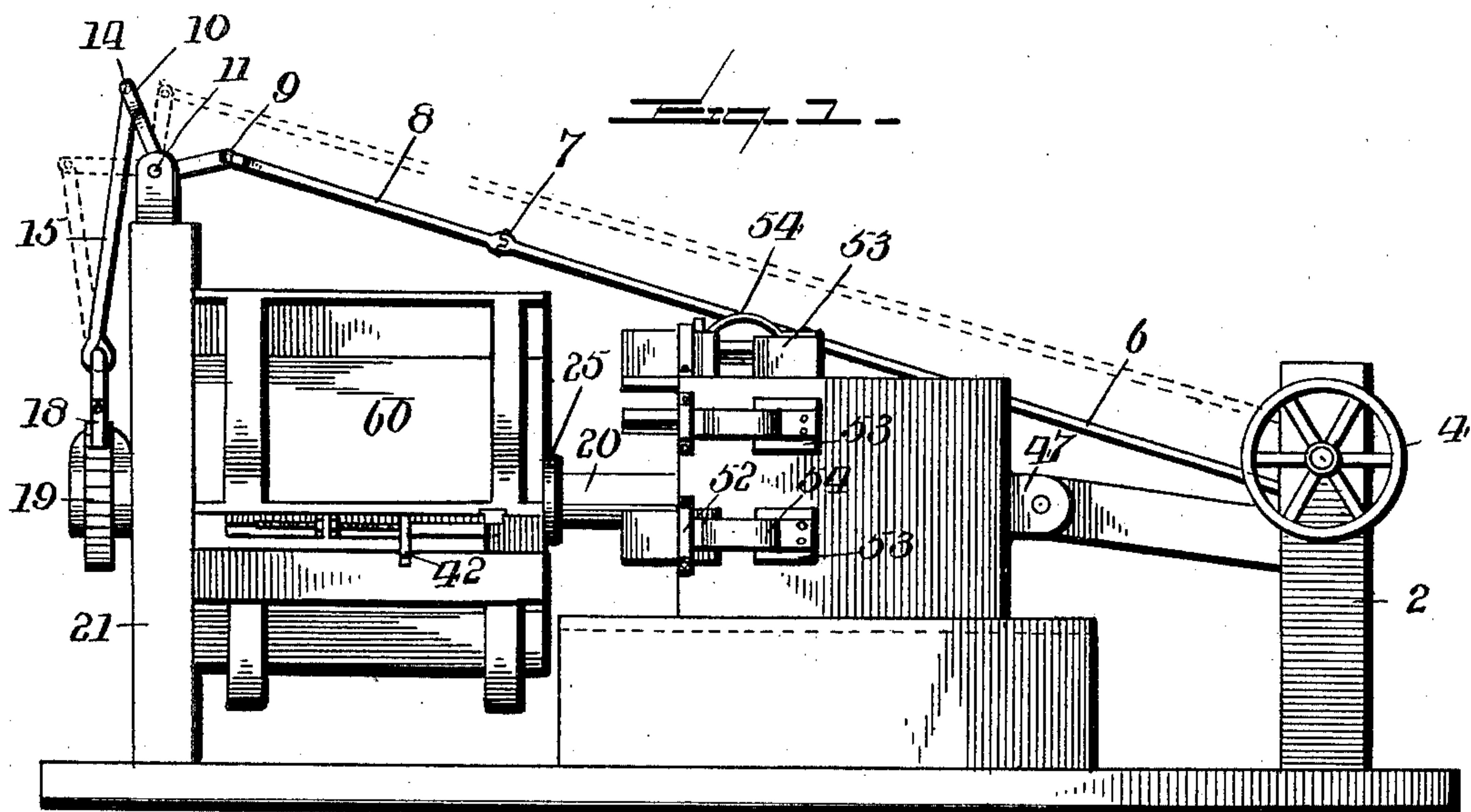
Patented Nov. 19, 1901.

J. BARTOSIK.
MACHINERY FOR MANUFACTURING BOLTS.

(Application filed Dec. 27, 1900.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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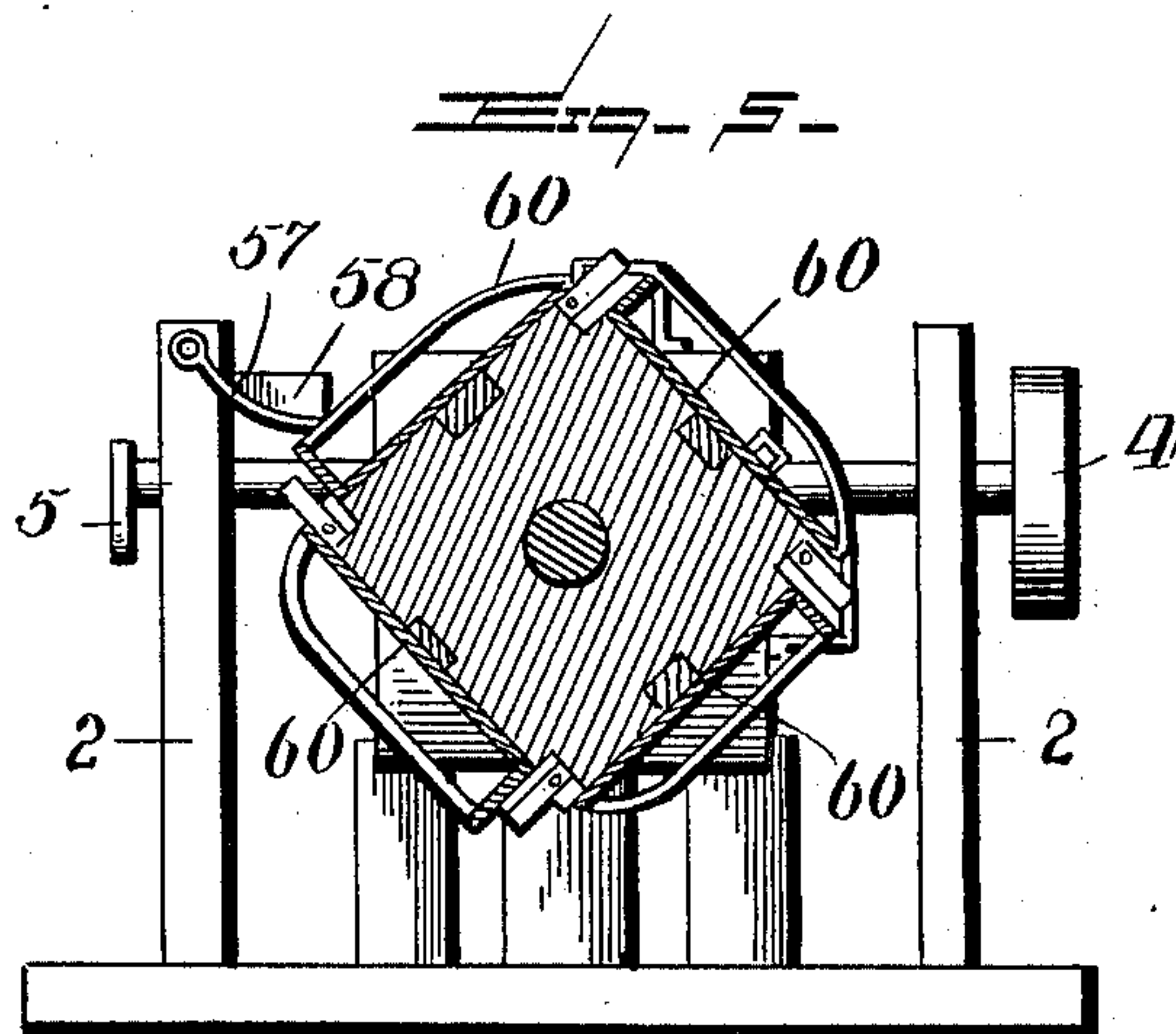
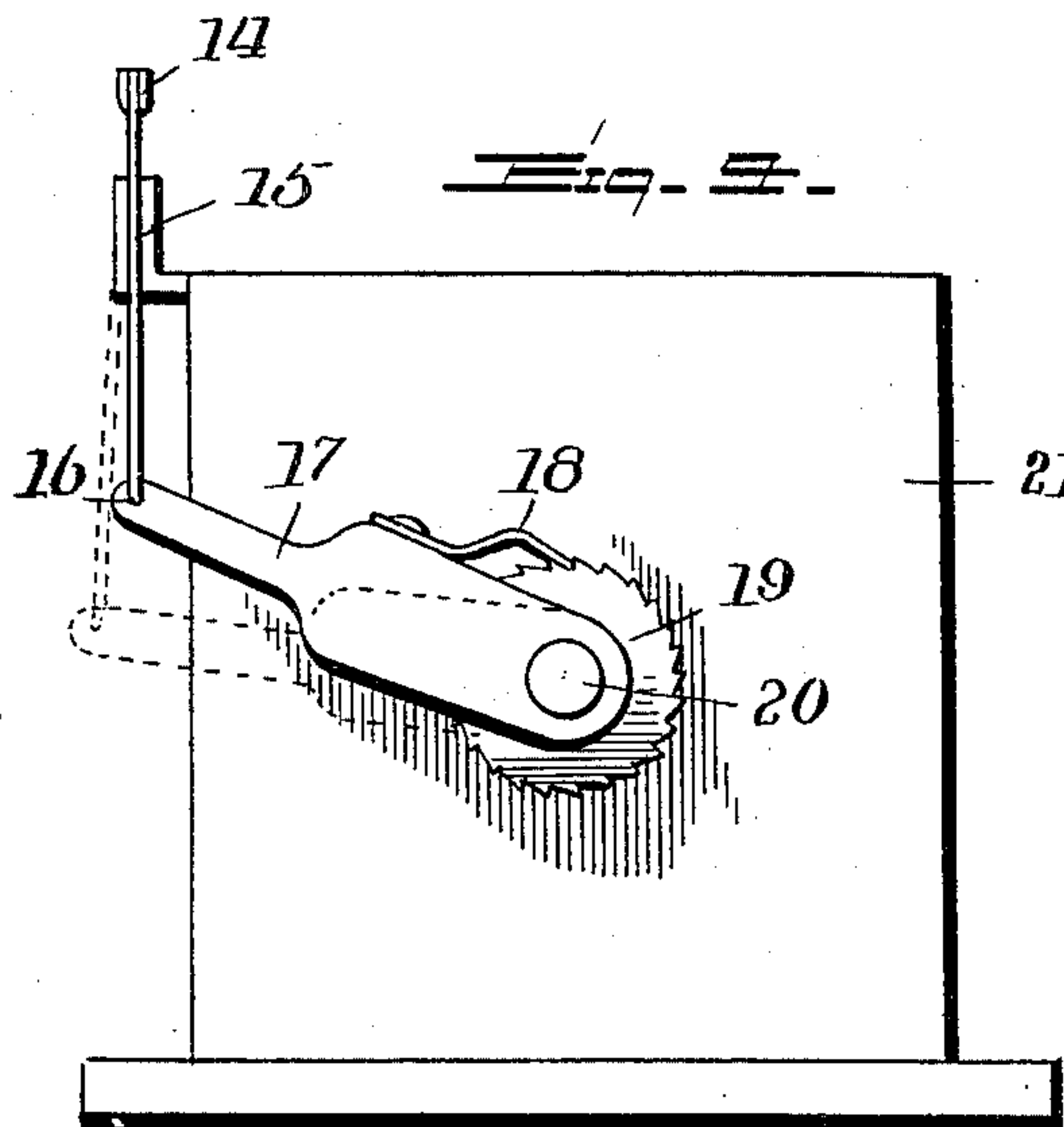
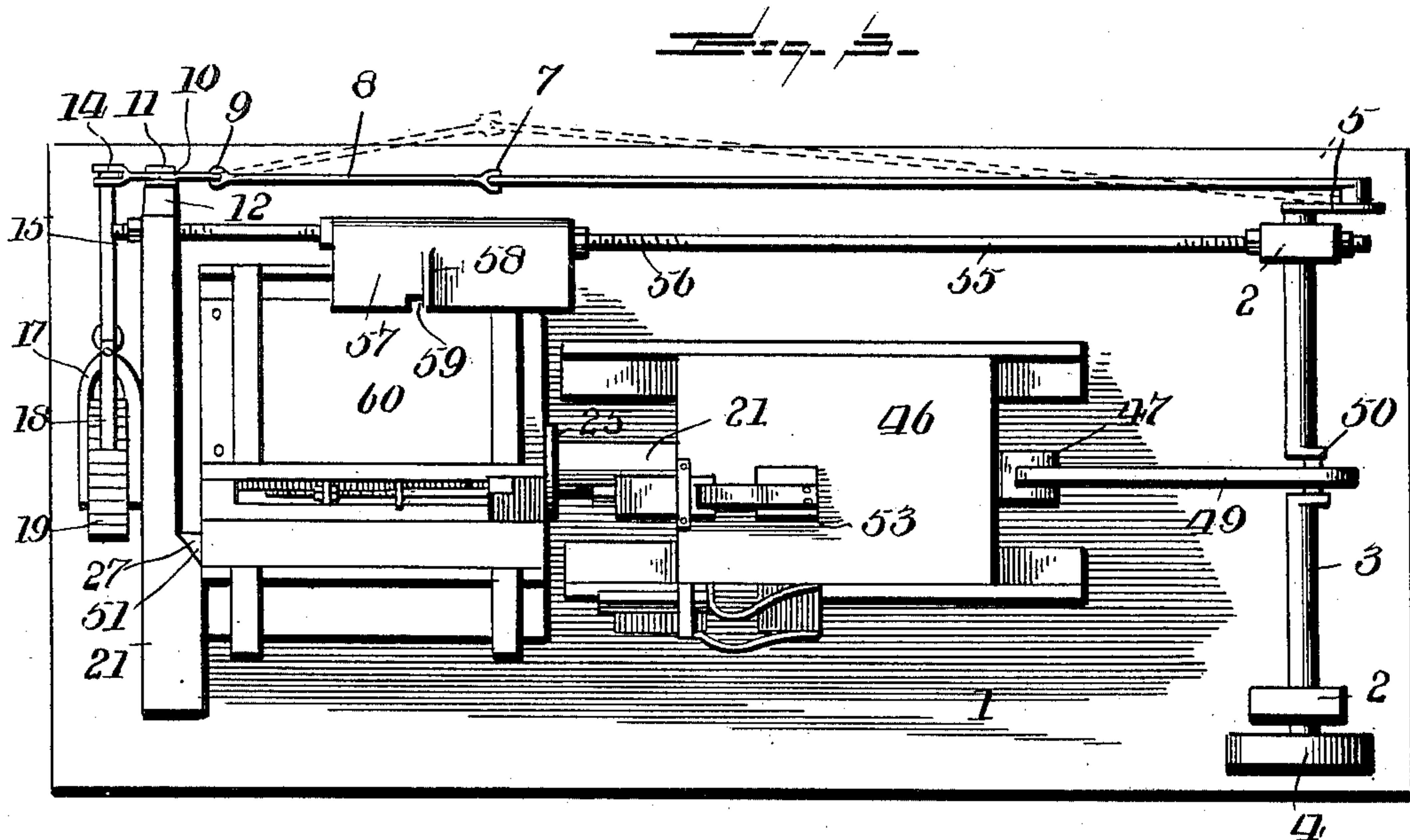
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3 Sheets—Sheet 2.



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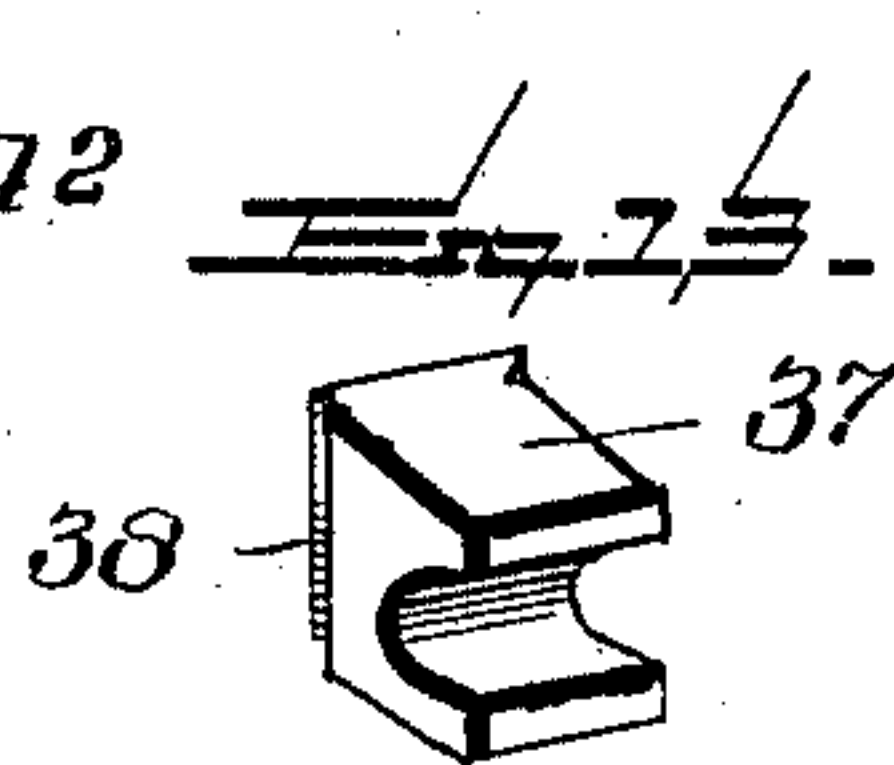
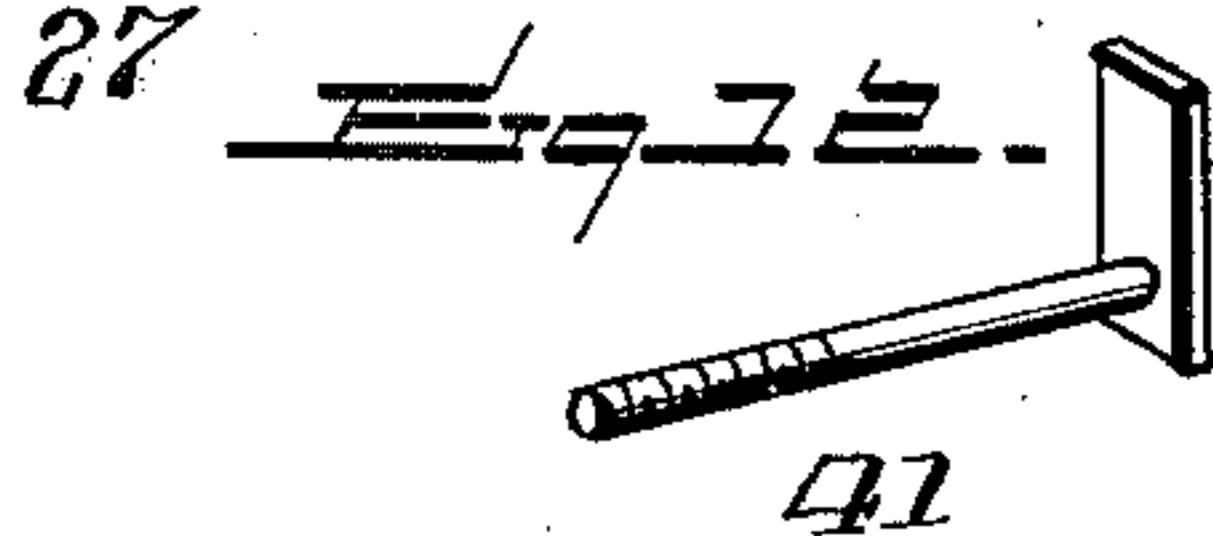
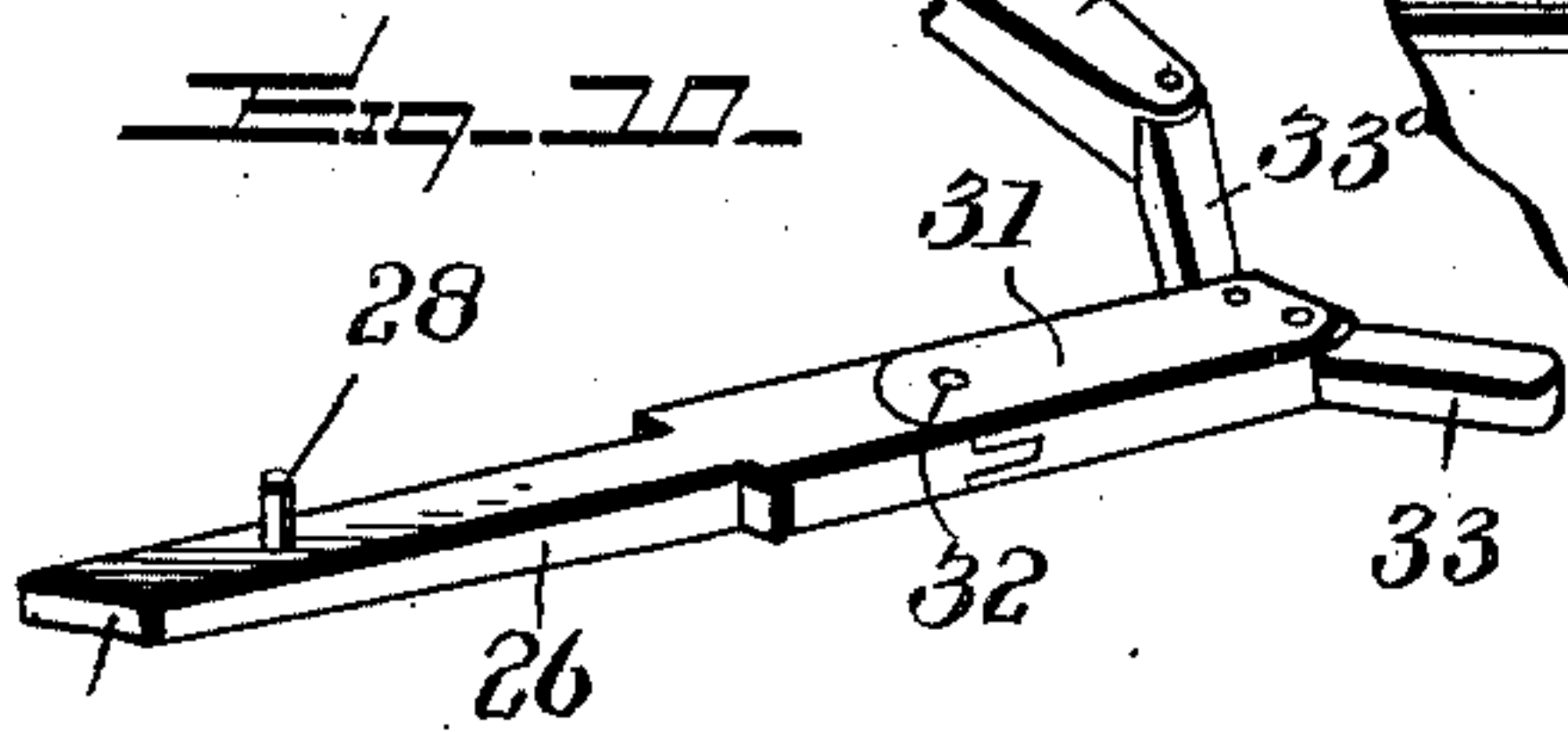
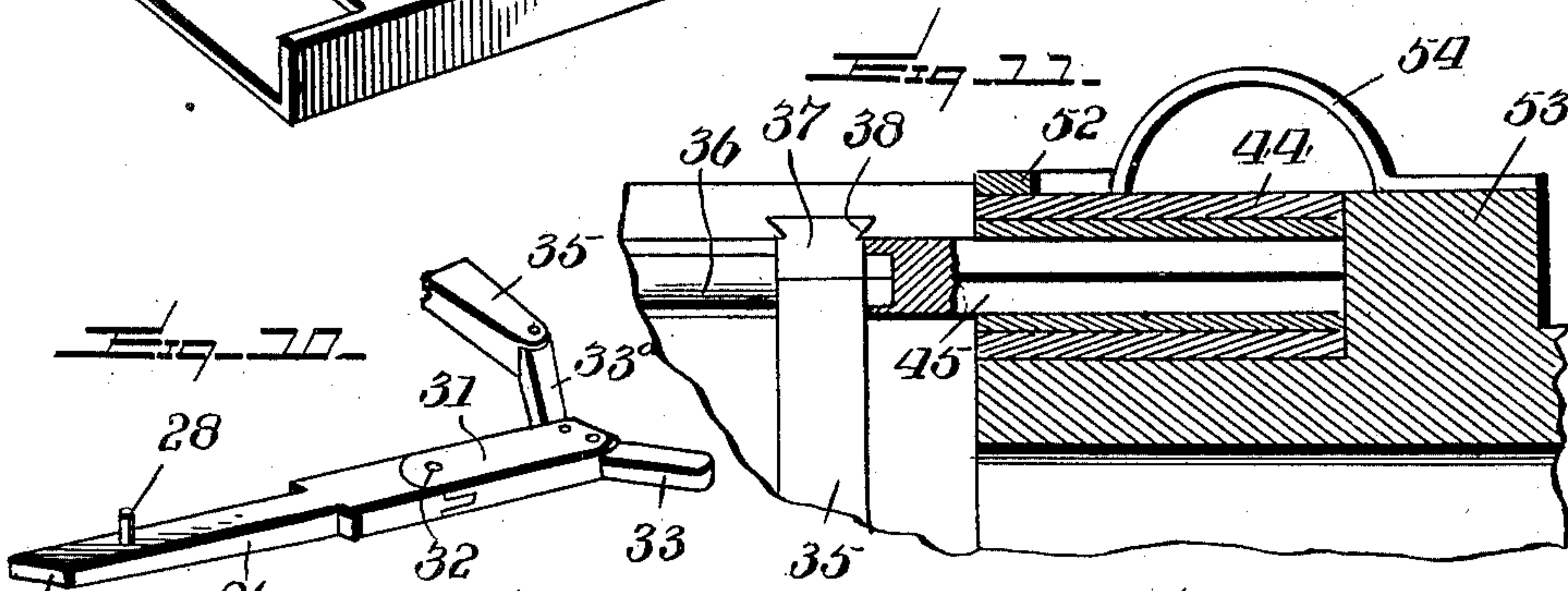
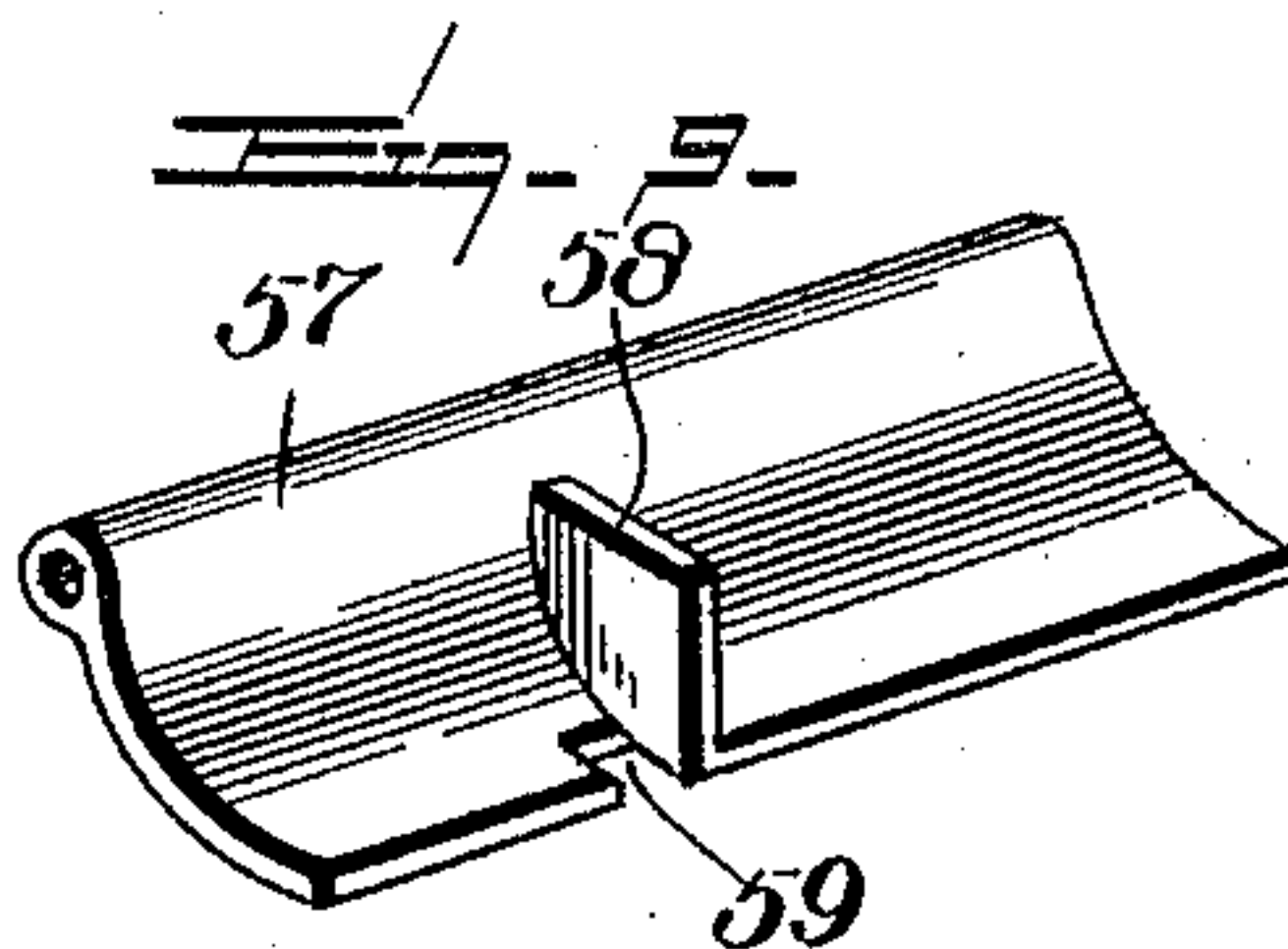
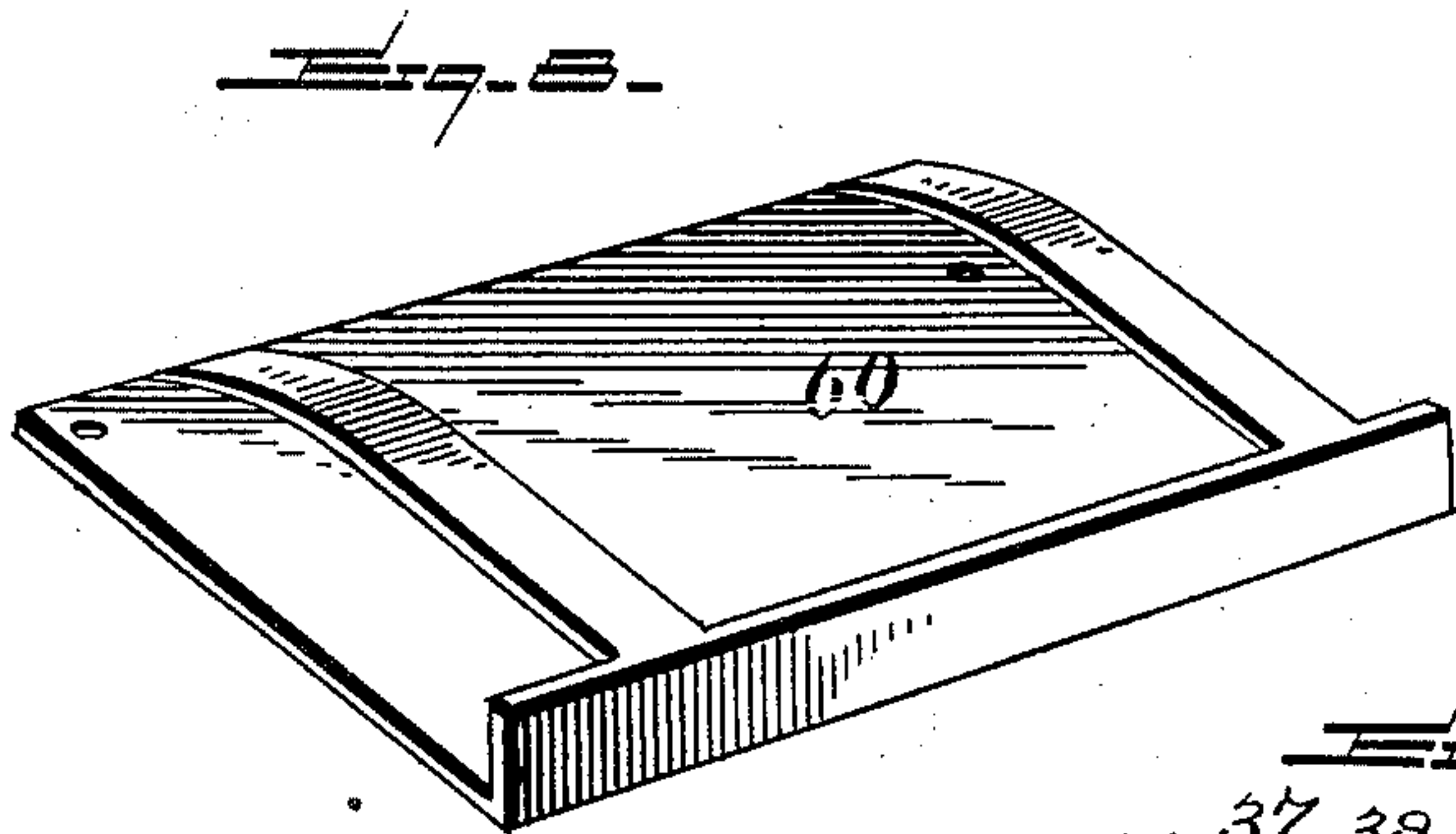
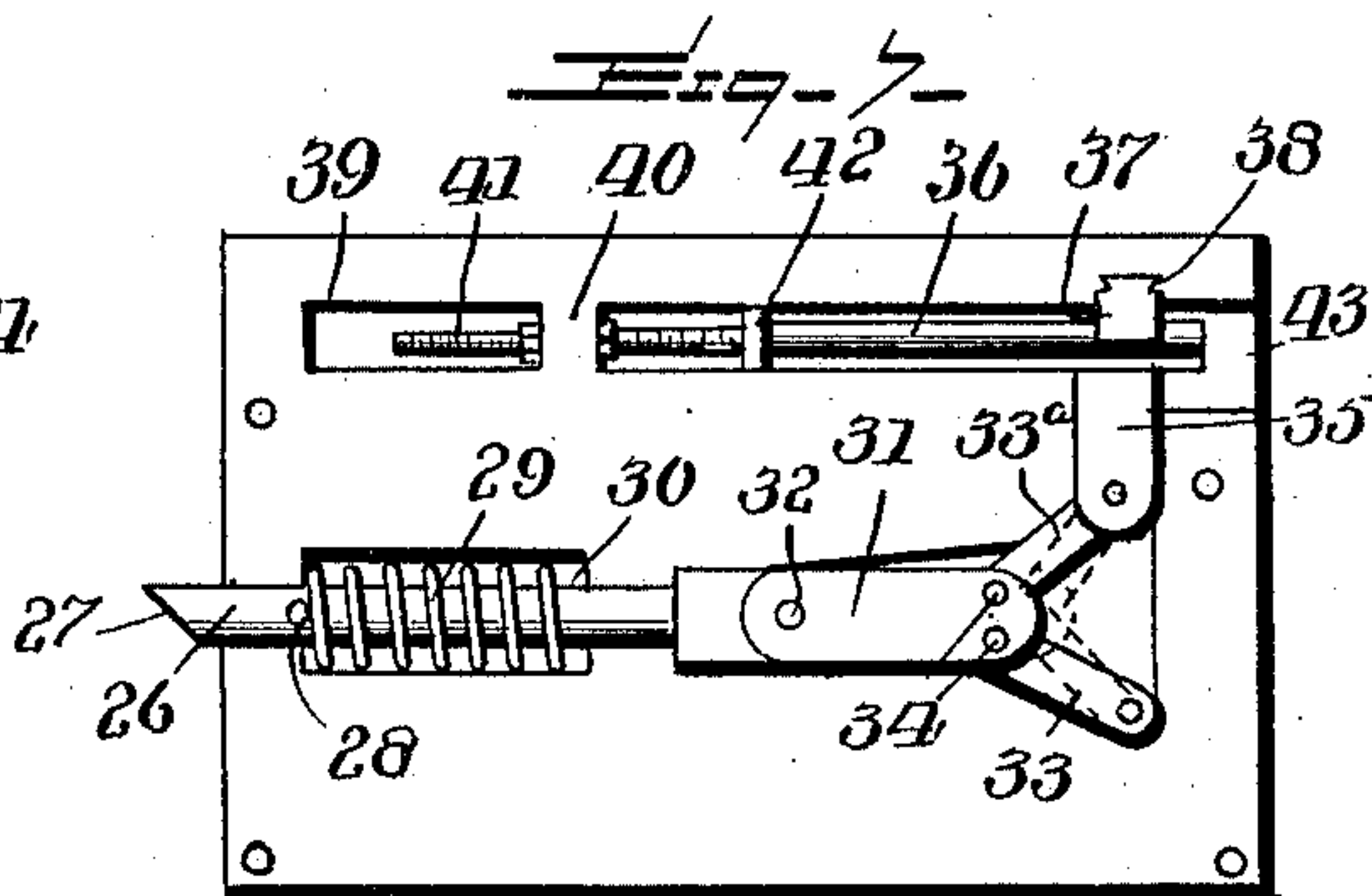
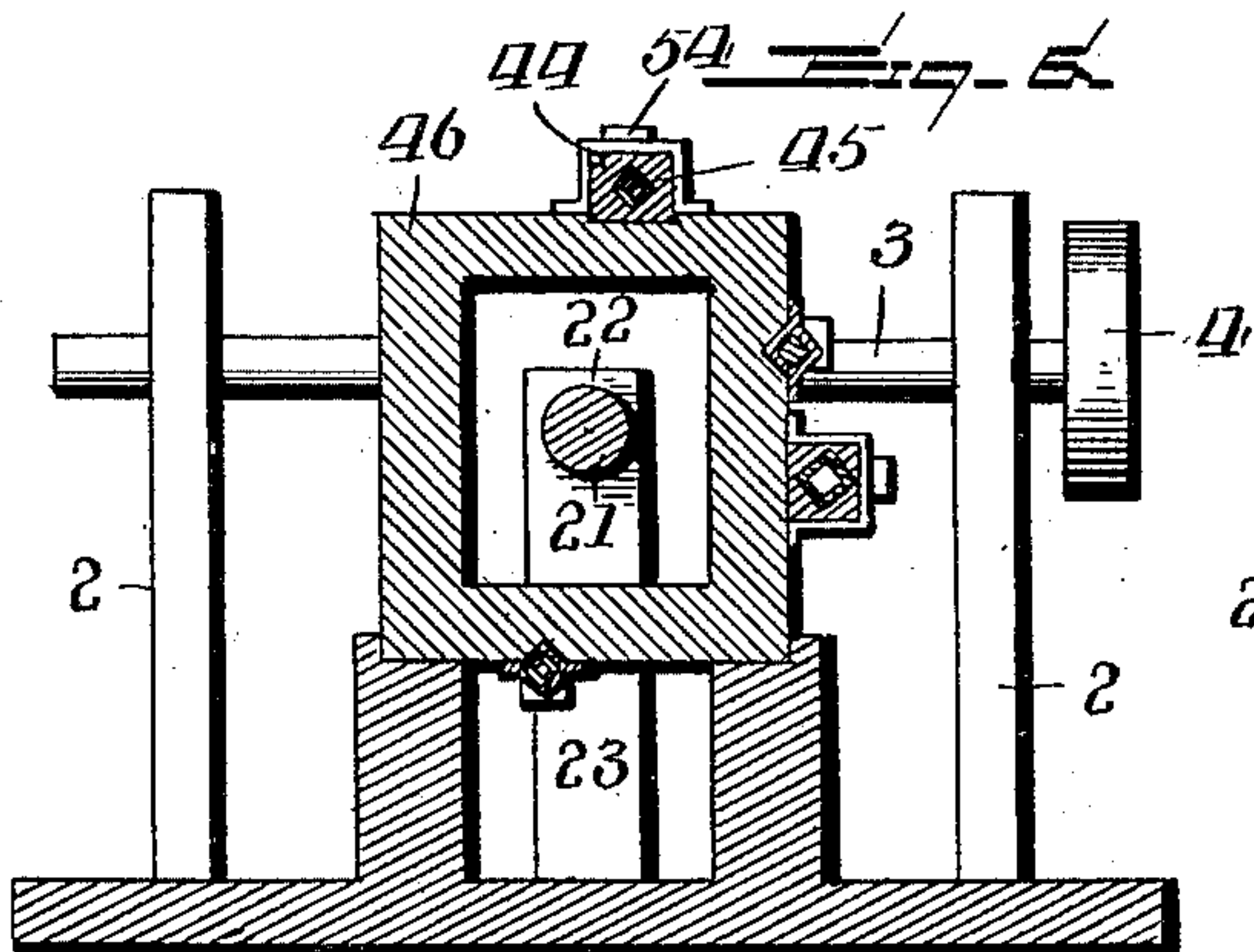
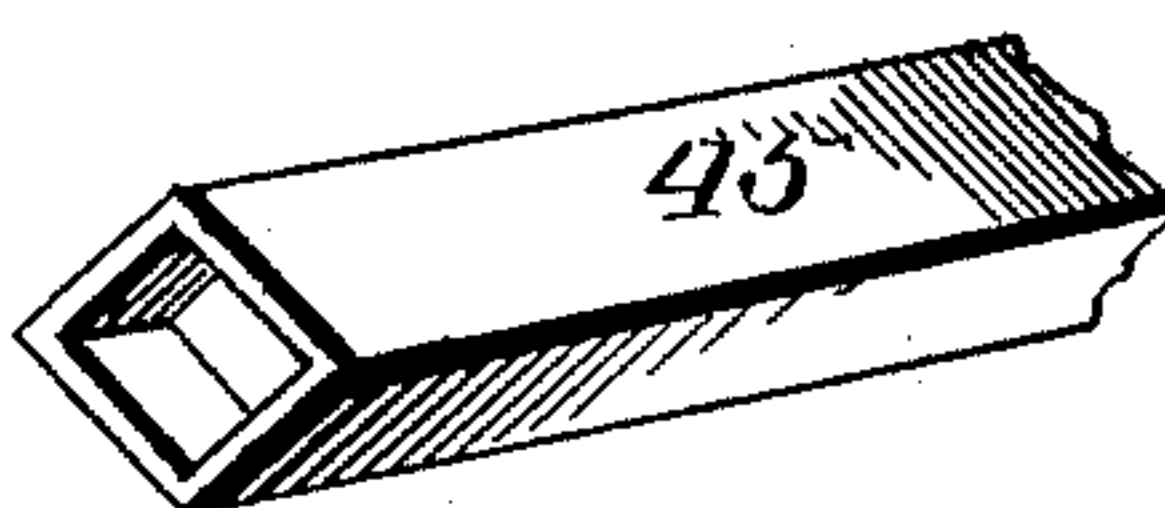


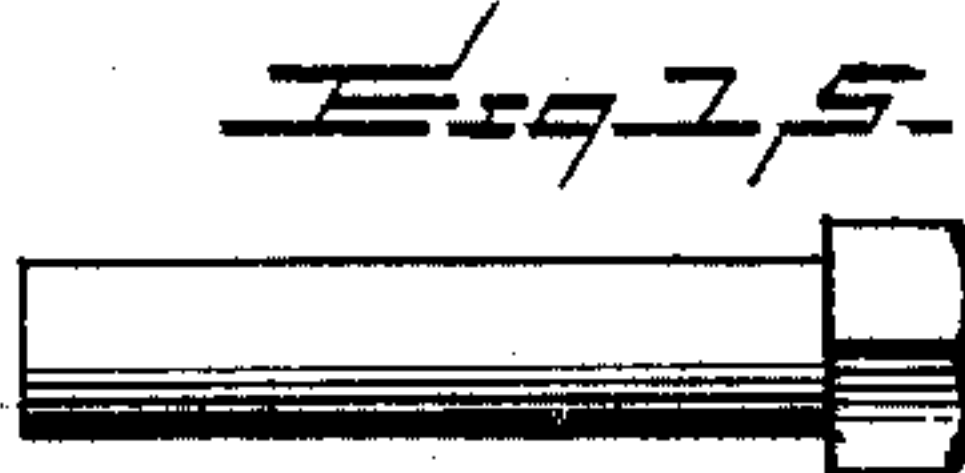
Fig. 15.



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UNITED STATES PATENT OFFICE.

JOSEPH BARTOSIK, OF PITTSBURG, PENNSYLVANIA.

MACHINERY FOR MANUFACTURING BOLTS.

SPECIFICATION forming part of Letters Patent No. 686,700, dated November 19, 1901.

Application filed December 27, 1900. Serial No. 41,183. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BARTOSIK, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Machinery for Manufacturing Bolts; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in machinery for manufacturing bolts, and relates more particularly to a machine for forming and finishing heads on bolts.

The invention has for its object the provision of novel means whereby metal may be fed into the machine of the character described and the head of a bolt finished therein by the novel mechanism and pulley.

The invention has for its further object to construct a machine of this character that will be extremely simple in its construction and strong, durable, and highly efficient in its operation.

The invention further aims to construct a mechanism of the character described that is not apt to become out of order and wherein the operation of the different parts is assured at all times.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be herein after more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views, and in which—

Figure 1 is a side elevation of my improved machine for forming heads upon bolts. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a top plan view of the same. Fig. 4 is an end elevation, showing the pawl-and-ratchet movement of the head operating the mechanism. Fig. 5 is a vertical sectional view on the line 5 5 of Fig. 1. Fig. 6 is a vertical sectional view taken on the line 6 6 of Fig. 3 looking in the direction of the arrow.

Fig. 7 is a plan view of the automatic clutch mechanism. Fig. 8 is a perspective view of the shield. Fig. 9 is a similar view of the gage. Fig. 10 is a perspective view of the clutch mechanism forming the gripping means. Fig. 11 is a fragmentary vertical sectional view of the die in the operation of forming a head. Fig. 12 is a perspective view of the adjusting means regulating the various lengths of bolts. Fig. 13 is a perspective view of the anvil. Fig. 14 is a perspective view of one of the dies for forming or finishing the head. Fig. 15 is a side elevation of the finished article.

In the drawings the reference-numeral 1 indicates the base-plate, and 2 represents standards, upon which is mounted a crank-shaft 3, carrying on one end a driven pulley 4 and at the other end a crank-arm 5, having connected thereto a rod 6, to which is pivotally connected at 7 a rod 8, the end of which is bifurcated, as shown at 9, and connected to the bell-crank lever 10, which is pivotally mounted at 11 in the standards 2, extending upwardly from the base-plate. To the other end of said bell-crank lever is pivotally secured at 14 a downwardly-extending rod 15, which is connected at 16 to the crank-arm 17, carrying a pawl 18 and operating the ratchet 19, said crank-arm 17 being rotatably secured upon the shaft 20, to which is rigidly secured the ratchet-wheel 19. Said shaft 20 extends through the housing 21 and a bearing 22, secured in the standard 23, extending upwardly from the base-plate 1. The said shaft 21 carries a rectangular head 24, which is rigidly secured to said shaft 21 and adapted to rotate with the said shaft. This shaft 21 is further provided with a collar 25. The said head 24 is provided with four sides and carries on each side a clutch-gripping mechanism which in construction are alike upon all sides, but for the purpose of illustration I will only describe in detail one of the sides, as shown in Figs. 7 and 10 of the drawings. The side faces of the head are provided with a suitable opening having arranged therein a trip-lever 26, said trip-lever carrying a beveled end 27 and a pin 28. A spiral spring 29 is adapted to encircle said trip-lever, the latter being seated in the enlarged opening 30, formed in the faces of the head. A sliding head 31 is pivotally secured at 32 to said trip-lever and

carries outwardly-extending arms 33, which are pivotally secured at 34 to the sliding head, the upper arm 33^a carrying a grip 35, which is adapted to clutch the bolt 36 against the anvil 37, the latter being dovetailed, as shown at 38, and is seated in the face of the head. A recess 39 is arranged in the head for the reception of the bolt, and in said recess is arranged a bearing 40 for the reception of the screw-threaded gage 41, which operates therethrough, said screw-threaded gage carrying on its end a follower 42, that will accurately limit and gage the distance to which the bolt is applied in the machine.

The head is further provided with an enlarged opening 43 for the reception of the forming-die 44 and the finishing-die 45. These dies are mounted upon a rectangular sliding head 46, carrying a bifurcated end 47, to which is pivotally secured at 48 an arm 49, mounted upon the crank portion 50 of the crank-shaft 3.

The reference-numeral 51 indicates the enlarged portion of the housing 21, forming a shoulder for the engagement of the beveled end 27 of the trip-lever 26.

The forming-die is mounted on the upper face of the sliding head and operates through the yoke 52, the rear end of said forming-die operating in the bearing 53, rigidly mounted upon the upper face of the sliding head.

The reference-numeral 54 indicates a retractile spring, one end of which is securely fastened to the bearing 53 and the other end to the die. This spring serves for normally retaining the dies in the forward position.

The reference-numeral 55 indicates a rod extending from one side of the machine to the other and is suitably fastened to the bearing, said rod carrying screw-threads 56, upon which is mounted the gage 57, said gage forming a table for feeding the mechanism, this gage being provided with a rib 58 for the purpose of accurately placing the material into the machine. The said gage has formed therein a notch 59 for the purpose of allowing the follower 42 to pass as the head revolves.

The reference-numeral 60 indicates the shields or guards, which partially cover the mechanism of the revolving head and provide a space for feeding the material into the said revolving head.

The operation of my improved machine is as follows: Power being communicated to the driven pulley 4 and communicating movement to the crank-arm 5 through the crank-shaft 3 will tend to rock the bell-crank lever and communicate motion to the rod 15, thereby transmitting an intermittent rotary movement to the rotating head 24 through the medium of the pawl and ratchet 18 and 19, the metal being fed upon the guide-plate into the machine, where the same will be clamped by means of the clutch and anvil, as shown in dotted lines in Fig. 7 of the drawings, the trip-lever 26 being forced inwardly by reason of the shoulder 51, arranged upon the interior

face of the housing. Simultaneous with this operation the arm 49 will tend to slide the head inwardly, the forming-die coming into engagement with the end of the bolt, and with the next revolution of the crank-shaft, as the revolving head has been again rotated partially, the finishing-die will come in engagement with the head and finish the same. In the meantime, however, the next bolt has been inserted in its proper position and is ready to be finished as heretofore described. As the head revolves to the next position the spring 29 will return the clutch mechanism to its normal position, thereby releasing its grip from the bolt, and the same will drop to the floor in a finished state, the operation being a continuous one, as the machine is constantly fed by the operator.

It will be understood that the dies may be moved to the different sizes inserted and also that the gage is adjustable in order to accurately control the various sizes of bolts that may be inserted.

The many advantages obtained by the use of my improved machine will be readily apparent from the foregoing description, taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, a frame, a drive-shaft mounted therein, a shaft also mounted therein, a rotatable head carried by said shaft, said head having slots in its faces, a series of pivoted bars operating in said slots, a spring for returning said bars to their normal position, a gripping-jaw carried by one of said bars, a stationary jaw also mounted within said slot, in combination with a sliding head, carrying forming and finishing dies, substantially as described.

2. In a device of the character described, a frame, a drive-shaft mounted therein, a shaft also mounted therein, a rotatable head carried by said shaft, said head being provided with slots, a pawl-and-ratchet mechanism actuated by the drive-shaft for giving intermittent motion to said head, a series of pivoted bars mounted in said slots, a gripping-jaw carried by one of said bars, a stationary jaw also mounted in said slots, means for returning said bars to their normal position, and an angular shoulder on one of said bars for engagement with the frame, in combination with a sliding head, substantially as described.

3. In a device of the character described, a frame, a drive-shaft mounted therein, a sliding head secured in suitable brackets in said frame, said head being provided with suitable yokes, a bearing also secured to said head, a forming-die and a finishing-die slid-

ably mounted in said yokes, said bearing being provided with an opening for operating the rear end of said finishing-die, a retractile spring securely fastened to the bearing and forming-die, a bifurcated lug on the rear of the sliding head, a crank on the drive-shaft and an arm connecting said lug and the crank, in combination with a rotatable head carrying a gripping mechanism, substantially as described.

4. In a device of the character described, a rotatable head provided with slots on its faces, a trip-lever 26, carrying a beveled end 27 and a pin 28 arranged therein, a sliding head 31 pivotally secured to said trip-lever, outwardly-extending arms 33, 33^a pivotally secured to said head 31, the upper arm of which 33^a carrying a grip 35, provided with a recess in its face, a dovetailed anvil 37, seated in the slot of said rotatable head, said rotatable head also provided with a slot 43, a bearing 40 secured in said slot, and a screw-threaded gage 41, carrying a follower 42, mounted therein, in combination with a machine for the purpose described.

5. In a device of the character described, a frame, a drive-shaft mounted therein, a

shaft carrying a rotatable head mounted therein, a ratchet-wheel mounted on said shaft, a crank-arm carrying a pawl also secured thereto, a rod 15 connected to said crank-arm, a bell-crank lever pivotally connected to said rod and to the frame, a rod with a bifurcated end pivotally secured to said bell-crank lever, a rod 6, pivotally connected to said rod, and a crank-arm mounted on the drive-shaft and connected to the other end of the rod 6, in combination with a machine for the purpose described.

6. In a device of the character described, a frame, a threaded rod mounted in suitable bearings in said frame, a gage provided with a perforation mounted on said rod, said gage being provided with an upwardly-extending rib for the purpose described, in combination with a rotatable head secured in said frame.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOSEPH BARTOSIK.

Witnesses:

JOHN GROETZINGER,
M. HUNTER.