

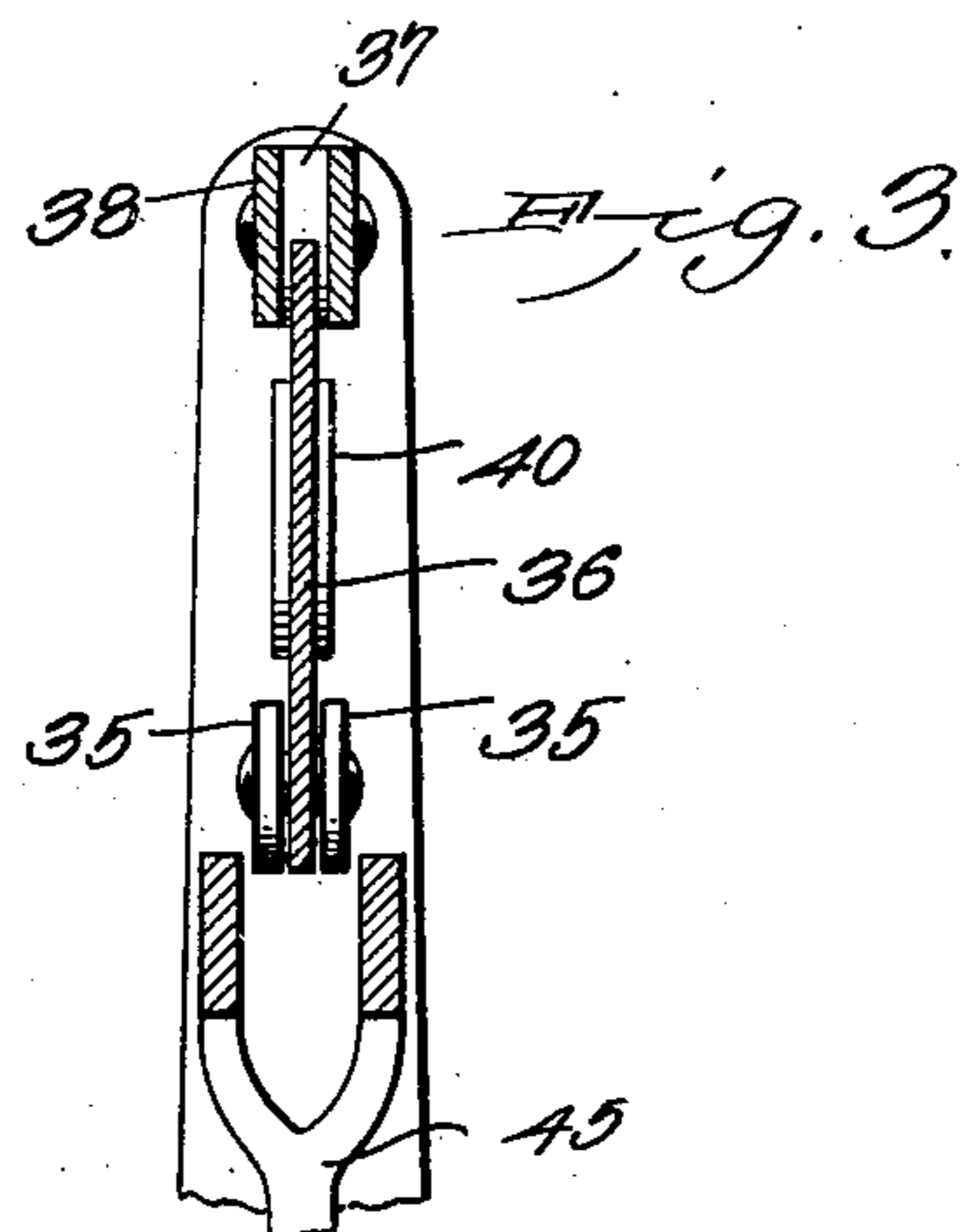
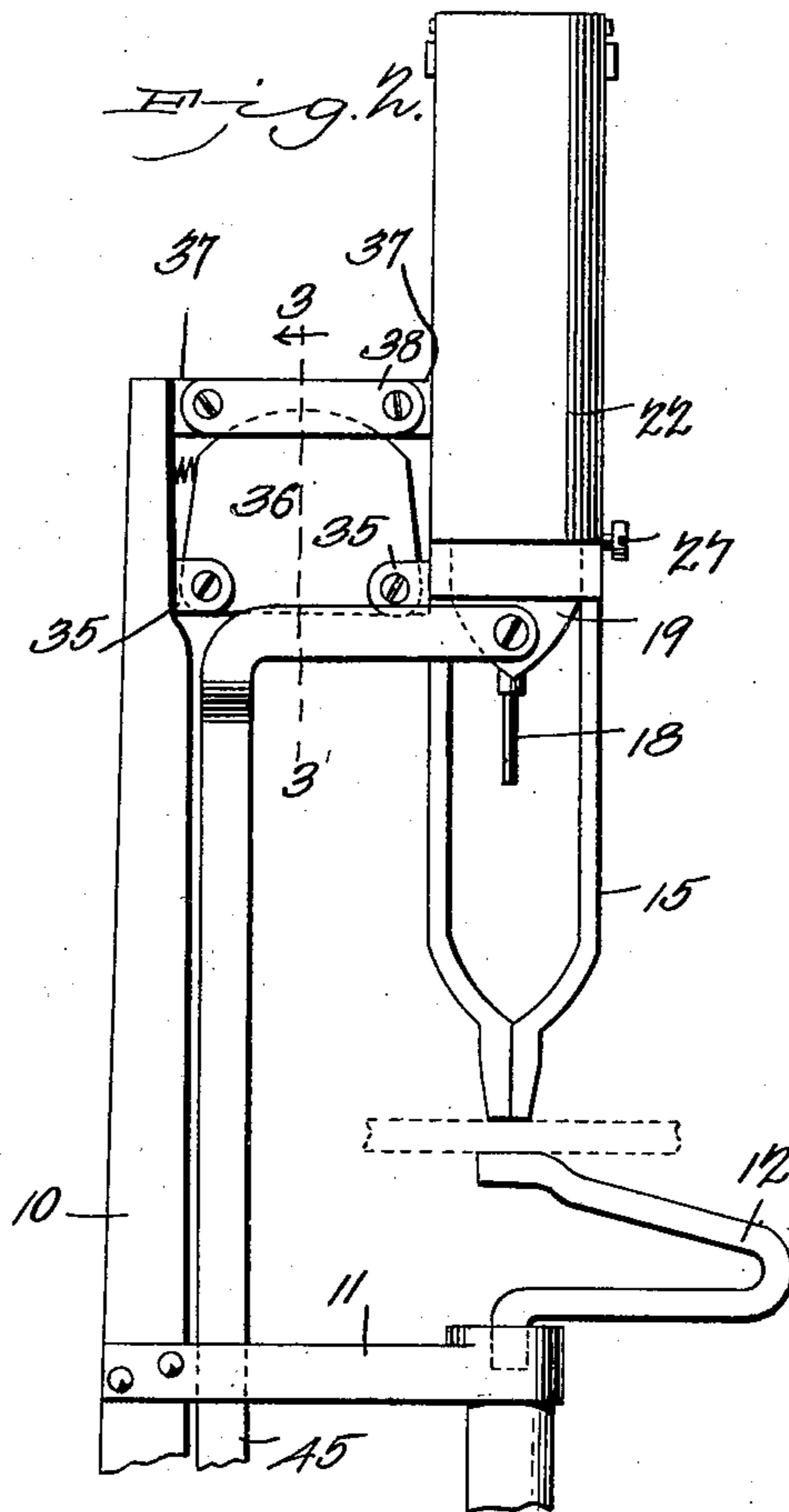
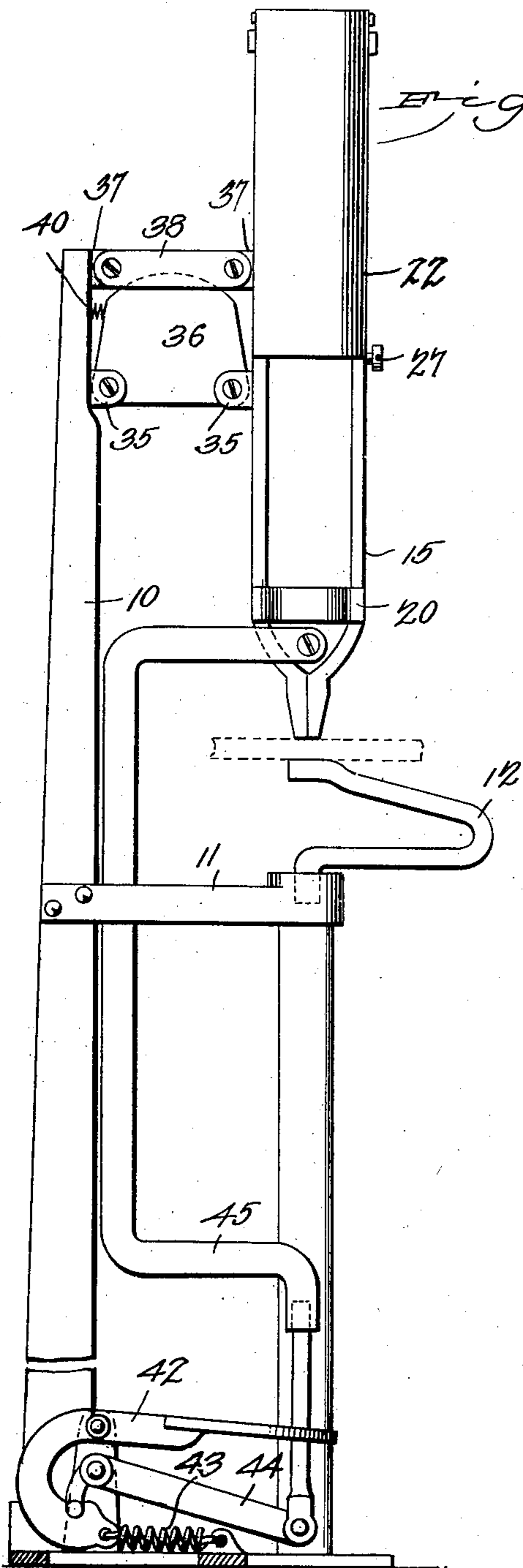
No. 742,396.

PATENTED OCT. 27, 1903.

J. T. CROWE.
SHOE NAILING MACHINE.
APPLICATION FILED SEPT. 20, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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John E. Parker

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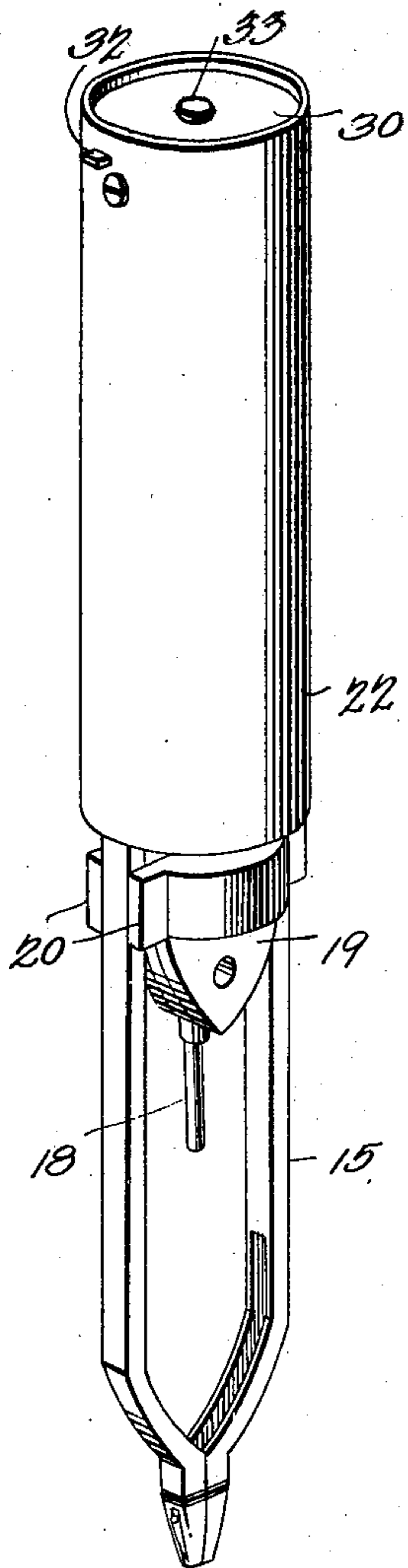


Fig. 6.

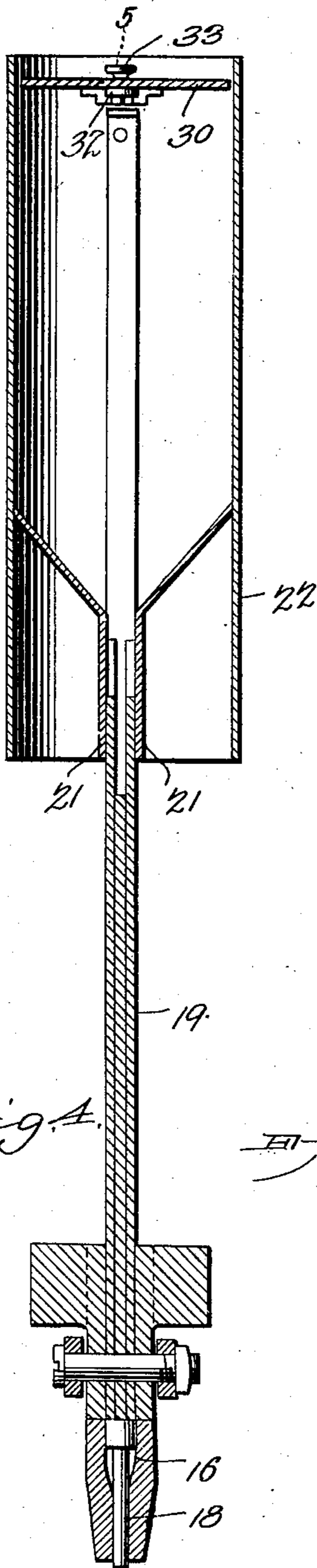


Fig. 4.

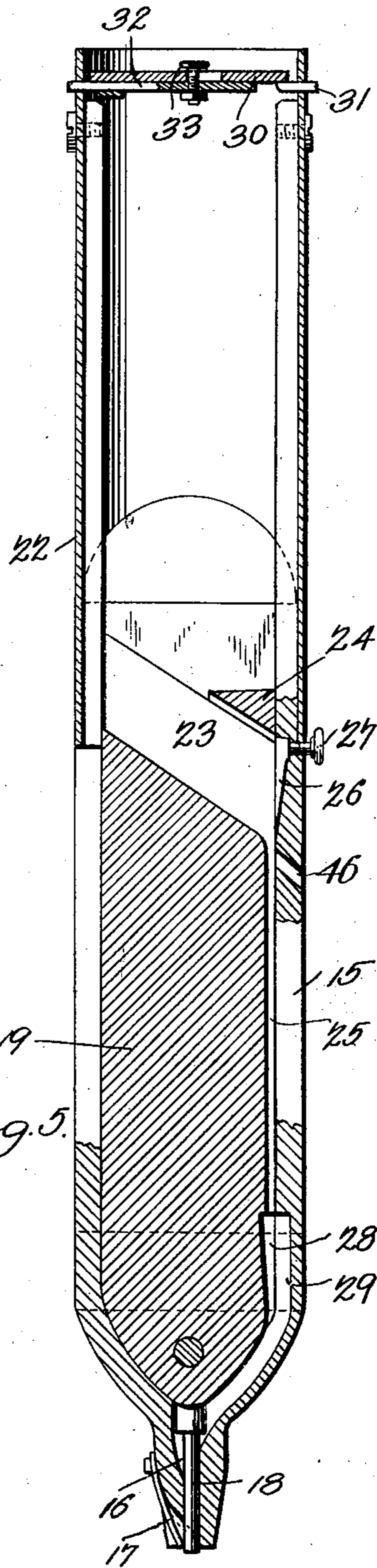


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN T. CROWE, OF CLARINDA, IOWA.

SHOE-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,396, dated October 27, 1903.

Application filed September 20, 1902. Serial No. 124,214. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. CROWE, a citizen of the United States, residing at Clarinda, in the county of Page and State of Iowa, have
5 invented a new and useful Shoe-Nailing Machine, of which the following is a specification.

This invention relates to improvements in machinery employed in the manufacture and
10 repair of shoes and other footwear, and has for its principal object to provide a mechanism for nailing the shoe sole or heel in place.

A further object of the invention is to provide an improved feeding means whereby single
15 nails may be properly guided to position to be acted upon by the driver or hammer without danger of choking, a further object being to provide means for adjusting the machine for use in connection with shoe-nails of
20 different size.

A still further object of the invention is to provide a mechanism which will select nails from a containing-casing, to which the nails
25 are supplied in bulk, and properly guide the same in the direction of the feeding mechanism.

A still further object of the invention is to provide an improved form of operating mechanism for actuating the machine.

30 With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the
35 appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the in-
40 vention.

In the accompanying drawings, Figure 1 is a side elevation of a shoe-nailing machine constructed in accordance with my invention. Fig. 2 is a similar view of the upper portion
45 of the machine with the parts in different position. Fig. 3 is a vertical sectional view on the line 3 3 of Fig. 2. Fig. 4 is a sectional view, on an enlarged scale, of the nail feeding and driving mechanism. Fig. 5 is a
50 transverse sectional elevation of the same on the line 5 5 of Fig. 4. Fig. 6 is a detail perspective view of the feeding and driving

mechanism detached from the supporting and actuating devices.

Similar numerals of reference are employed
55 to indicate corresponding parts throughout the several figures of the drawings.

The operative portions of the mechanism are supported on a suitable frame of any desired character, the frame in the present in-
60 stance being formed by a vertically-disposed standard 10, connected at its upper end to the nail feeding and driving mechanism and provided at a convenient point with a bracket 11, situated at a convenient height for the
65 operator and forming, in effect, a work-table for the machine. To the outer portion of the bracket is swiveled a horn or anvil 12, adapted to fit within the shoe or other article and form an anvil in alinement with the hammer. 70
At a point above the bracket the standard 10 supports a nail feeding and driving mechanism comprising a forked frame 15, having two parallel arms spaced from each other for the
75 greater portion of their length and connected at their lower ends to form at a point above the angle a receiving-pocket 16 for the nails. The nails, which are successively fed to said
80 pocket, are retained in position by a spring 17 until the descent of the hammer, the nails being then driven forcibly into the sole or heel of the shoe. This pocket also serves as
85 a guide for the hammer-rod 18 during the operation of driving the nail and braces the rod in all directions, so that lateral play is prevented. Between the forked arms is mounted
90 a vertically-movable slide 19, having near its lower end two pairs of laterally-extended lugs 20, embracing the arms and serving as guides for the slide, while the upper end of said
95 slide is guided between two plates 21, which are inclined to form a hopper-like bottom for a containing-casing 22, into which the shoe-nails are poured in bulk. The upper end of
the slide 19 is provided with an inclined slot 23, extending from edge to edge of said slide, the upper portion of the slot being in direct
communication with the interior of the nail-hopper, while the remaining portion is covered by a bridge or cross-bar 24, so that the
100 entering nails must first pass into the upper end of the slot and thence slide to the lowermost and discharge end of said slot. The side of the slide 19 is further provided with

a vertical slot 25 of an area in cross-section less than that of a shoe-nail, so that when the slide is in the position shown in Fig. 5 the nails cannot slide from the upper slot 23. In one arm of the fork at a point opposite the lower end of the inclined slot 23 is a pocket 26 of sufficient size to receive a single nail from the inclined slot 23, and the size of this pocket may be adjusted in accordance with the size of nails employed by means of a suitable screw 27. Near the lower end of the slide and in alinement with the vertical slot 25 is a nail-receiving pocket 28, which when the slide is fully depressed, as shown in Fig. 5, is in alinement with a similar pocket 29, leading directly to the opening 16 at the bottom of the forked frame.

In the operation of the mechanism, the parts being in the position shown in Fig. 5, a nail from the lowermost end of the slot 23 is fed to the pocket 26, and when the slide 19 is elevated to the position shown in Fig. 2 the pocket 28 of said slide comes into alinement with the pocket 26 and the nail immediately falls thereinto, so that on the downward movement of the slide the nail is carried along until the pocket 28 arrives opposite the pocket 29, at which time the nail will fall by gravity to a position against the hammer-rod. When the slide is again raised, the nail passes into the pocket 16 and on the descent of the hammer is driven into the shoe. After the machine has started into operation a nail will at all times be in the pocket 26 and a second nail resting against the hammer in readiness to fall into driving position, so that at each downward movement of the slide the nail will be driven into the shoe.

The nail hopper or casing 22 may be of any suitable dimensions, and its top is suitably covered to prevent the nails from being forced out on the upward movement of the slide. The cover in the present instance comprises a disk 30, having at one side a fixed lug 31, adapted to enter a suitable opening in one side of the casing, and at a diametrically opposite point on the casing is a similar opening for the reception of a sliding locking-bolt 32, carried by the cover and locked in position by a thumb-screw 33.

It is desirable in order to obtain the best results that the nipple or that end of the fork from which the nails are driven be maintained in close contact with the upper surface of the sole or heel of the shoe in order that the nails may be good and straight and without danger of bending. In the present machine this is provided for by the supporting connection between the standard 10 and the forked arms. Both the arm and one of the fork members are provided with pairs of lugs or ears 35, between which is pivoted a plate 36, and at the top of the standard and an adjacent point on the fork are lugs 37, connected by spaced links 38, adapted to receive the upper end of the plate 36 in order to prevent lateral play. Between the upper

portion of the standard 10 and the adjacent edge of the plate 36 is a spring 40, normally tending to force the plate away from the standard and depress the nail feeding and driving mechanism until the nipple at the lowest end of the forked arms is pressed against the upper surface of the shoe-sole.

As a convenient means of imparting a reciprocating motion to the slide 19 I employ a pivoted pedal-lever 42, mounted on a suitable standard projecting from a floor-plate and normally held in elevated position by a spring 43 to retain the slide 19 in position, with its pocket 28 in alinement with the fork-pocket 26. The lever 42 has a depending curved arm provided with a socket for the reception of the short end of a bell-crank lever 44, pivoted to the floor-standard, the longer arm of said lever being connected by a rod 45 to the slide.

The mechanism may be operated with the utmost rapidity, and owing to the position and shape of the slots and pockets for the reception of the shoe-nails the latter will always be presented to the driving-rod in the proper position.

In many cases mutilated nails or particles of iron or other material may be mixed with the nails fed to the hopper, and to provide for the discharge of these articles a small opening 46 is formed in the forked frame, as shown more clearly in Fig. 5.

Having thus described my invention, what I claim is—

1. In a nailing-machine, a supporting-frame having a nail-receiving recess or pocket, a vertically-movable slide guided by the frame, a hammer-rod carried by the slide and adapted to enter said recess or pocket, a nail-reservoir, and means operable by the slide for receiving single nails from the reservoir and carrying the same to the recess or pocket.

2. The combination in a nailing-machine, of a supporting-frame having a nail-receiving recess or pocket, a reciprocatory slide guided by the frame, a hammer-rod carried by the slide and adapted to open said recess or pocket, a nail-reservoir above the slide and into which said slide is forced after each action of the hammer-rod, the upper end of the slide being provided with an inclined slot for receiving nails from the reservoir, and means for feeding single nails from the slot to the recess or pocket.

3. The combination in a nailing-machine, of a supporting-frame provided with nail-receiving pockets, a reciprocatory slide guided by the frame and having a nail-receiving pocket, a hammer-rod carried by the slide, a nail-reservoir carried by the frame, the upper of said frame-pockets communicating with the reservoir and the lower with a recess into which the hammer-rod is forced during the nailing operation, and the nail-receiving pocket of the slide being movable into alinement with both the upper and lower pockets of the frame to effect the delivery of single

nails from the upper to the lower frame-pockets.

4. A nail-feeding mechanism, comprising a frame having upper and lower pockets, a reservoir in communication with the upper pocket, a vertically-movable slide guided by the frame and having a pocket movable alternately into alinement with the upper and lower frame-pockets, and means for reciprocating said slide.

5. A feeding means comprising a reservoir, a fixed frame having two separated pockets of which one is in communication with the reservoir, and a reciprocatory slide having a pocket movable alternately into alinement with the two frame-pockets.

6. A feeding mechanism comprising a reservoir, a fixed frame having upper and lower pockets of which the upper is in communication with the reservoir, means for adjusting the receiving area of the upper pocket, and a reciprocatory slide having a pocket movable alternately into alinement with the two frame-pockets.

7. The combination in a nailing-machine, of a forked frame having at its lower end a nail-receiving recess and provided with upper and lower pockets of which the lower is in communication with said recess, a reservoir or hopper having an inclined bottom portion, a reciprocatory slide guided in said forked frame and having at its upper end an inclined slot in communication with the nail-reservoir, the lower end of said slot being in alinement with the upper pocket of the frame when the slide is in its lowest position, said slide having a lower nail-receiving pocket and being provided with a vertical slot disposed at one edge and extending from the pocket to the upper end of said slide, a hammer-rod for forcing single nails from the lower recess

of the frame, and means for reciprocating said slide.

8. The combination in a nailing-machine, of the forked frame having a nail-receiving pocket or recess at its lower end, a reciprocatory slide guided in the frame, a hammer-rod carried by the slide and adapted to enter the pocket or recess, a nail reservoir or hopper for the reception of nails in bulk, and means carried by the slide for receiving single nails from the reservoir and carrying the same to the said lower pocket or recess.

9. The combination with a main standard or support, of an anvil, a frame having at its lower end a recessed nipple for the reception of single nails, a hammer-rod guided by the frame and adapted to pass through the nipple, pivot lugs or ears projecting from the standard and the frame, a plate pivotally connecting said lugs or ears, a spring interposed between the plate and standard and tending to depress said frame, and a pair of spaced links connecting the frame and standard and serving as a guide for the upper end of said plate.

10. The combination in a nailing-machine, of the supporting-frame, a reservoir, a reciprocatory slide having an inclined slotted portion for receiving nails from the reservoir and feeding the same to driving position, there being a discharge-opening formed in the wall of the reservoir at a point beyond the end of said inclined portion for the escape of broken nails and like particles.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN T. CROWE.

Witnesses:

H. H. TOLL,
H. E. DEATER.