

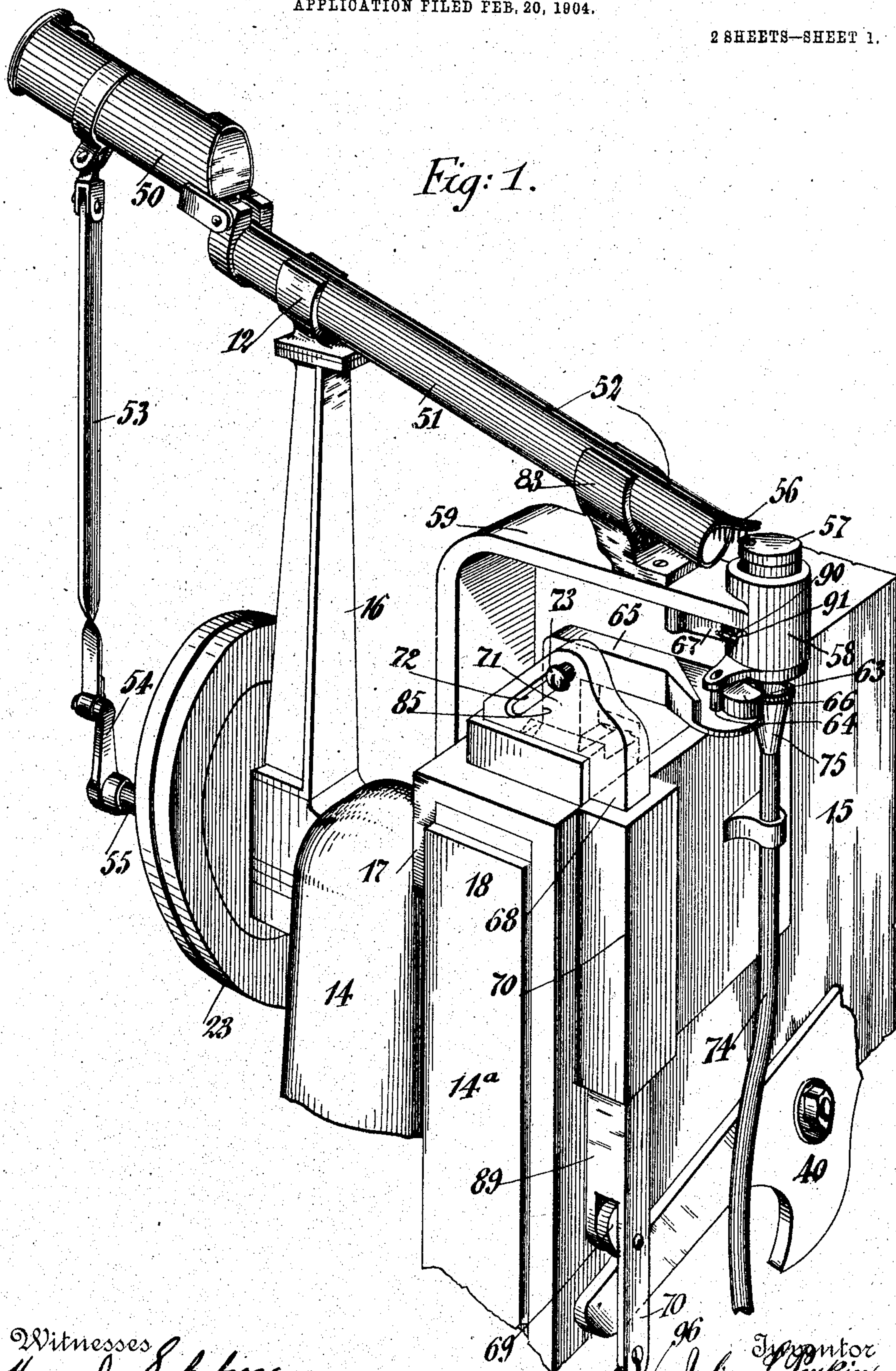
No. 786,835.

PATENTED APR. 11, 1905.

J. L. PERKINS.
NAIL FEEDING MECHANISM.

APPLICATION FILED FEB. 20, 1904.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig: 2.

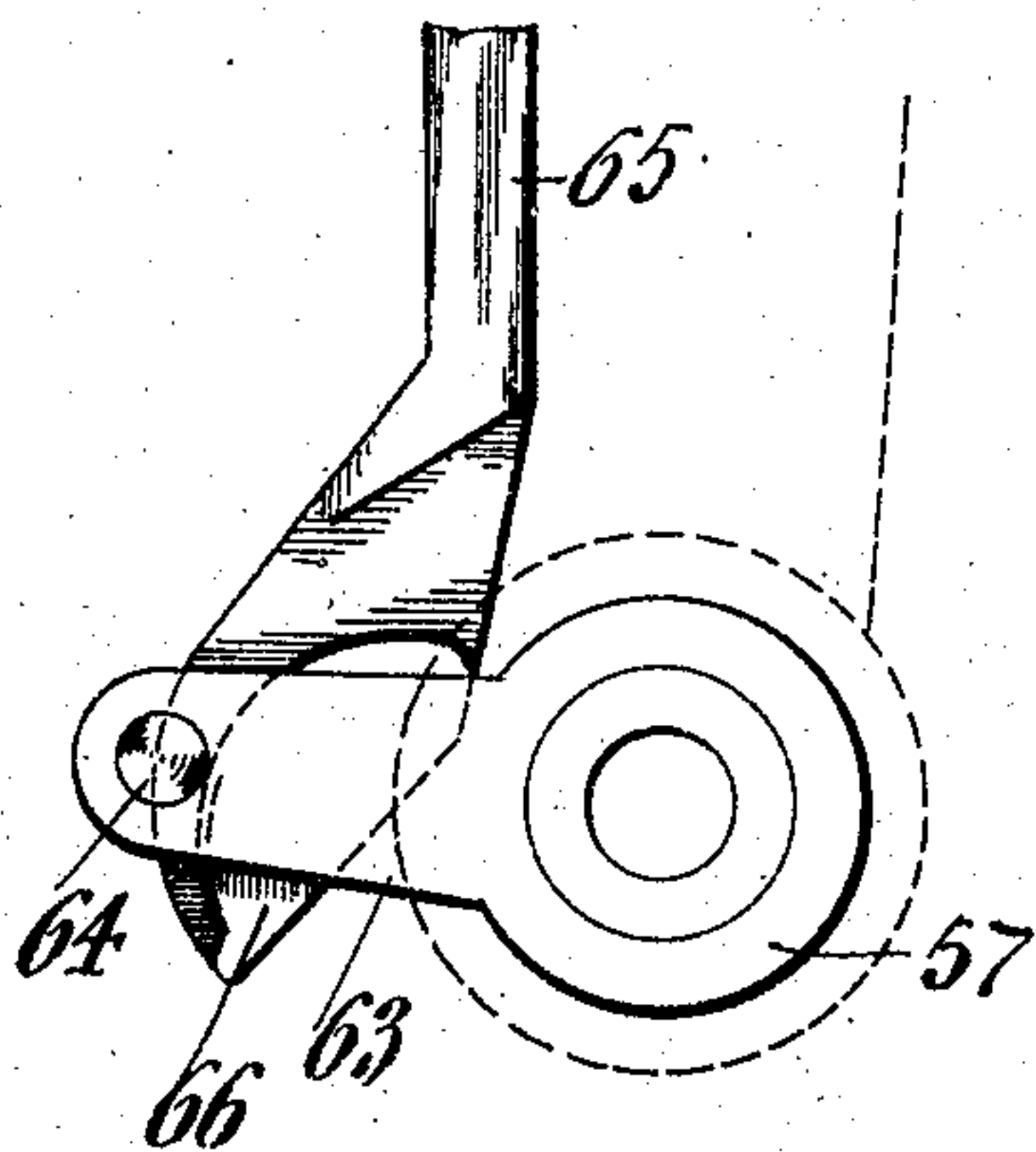


Fig: 3.

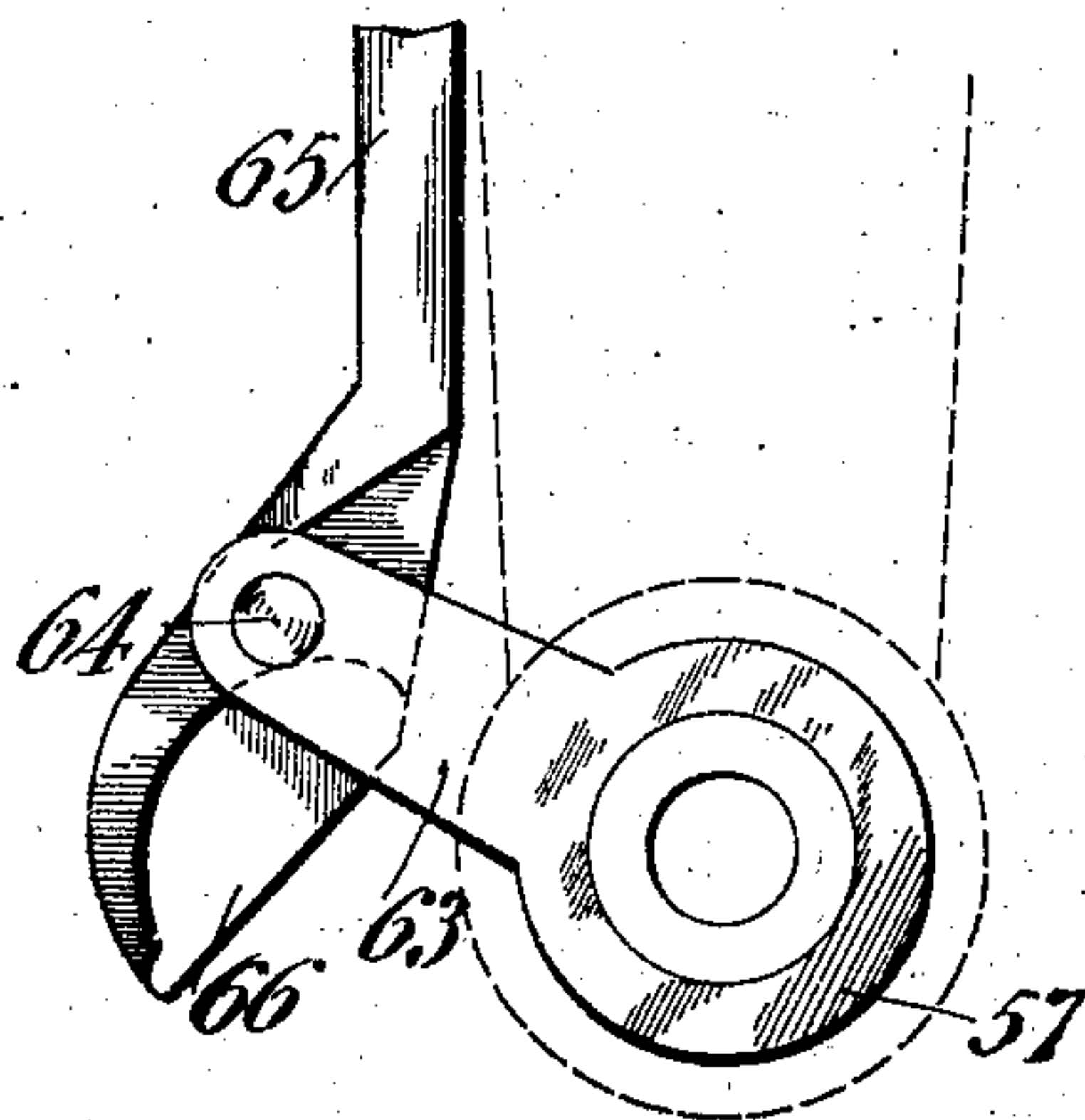


Fig: 4.

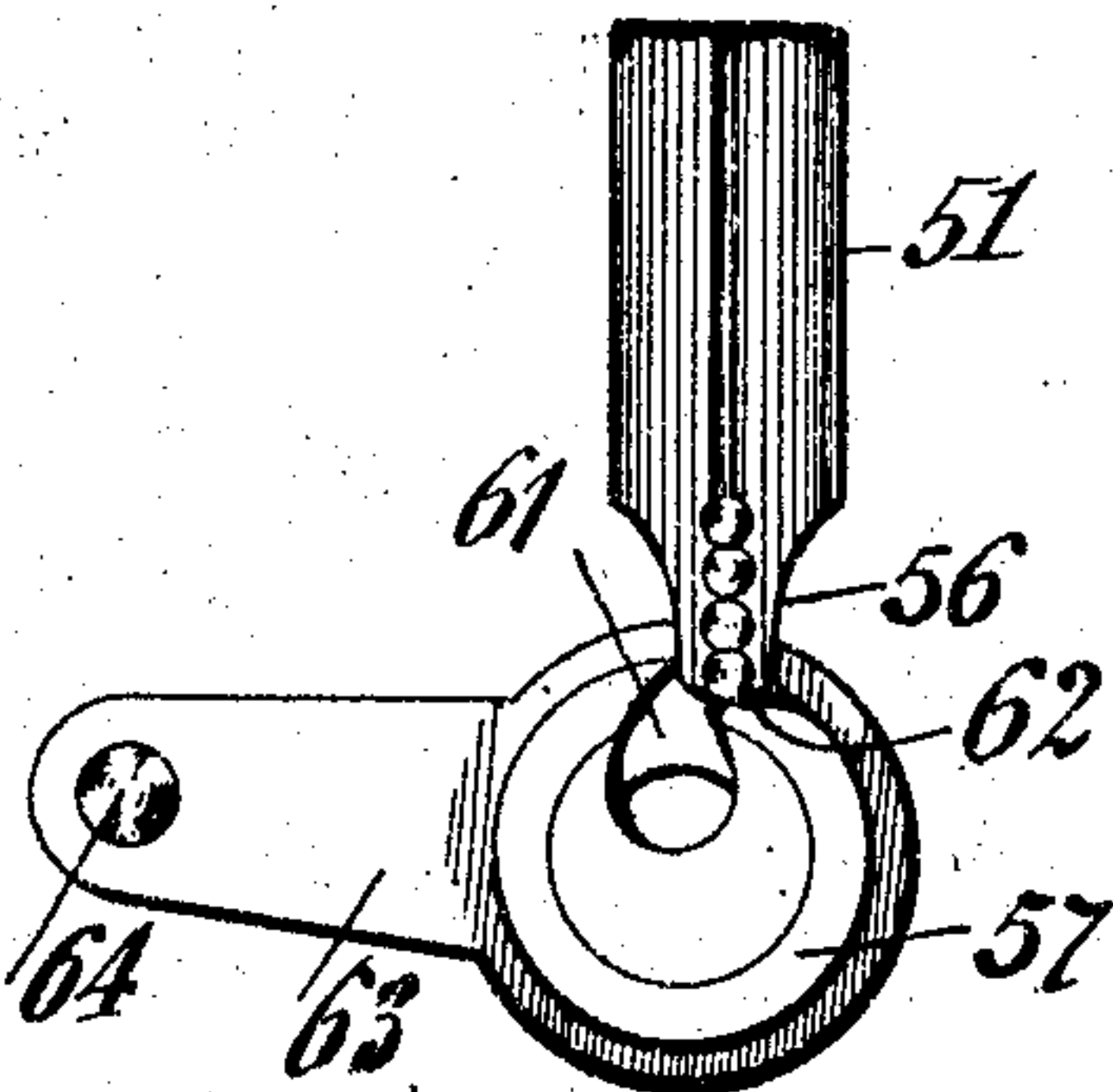


Fig: 5.

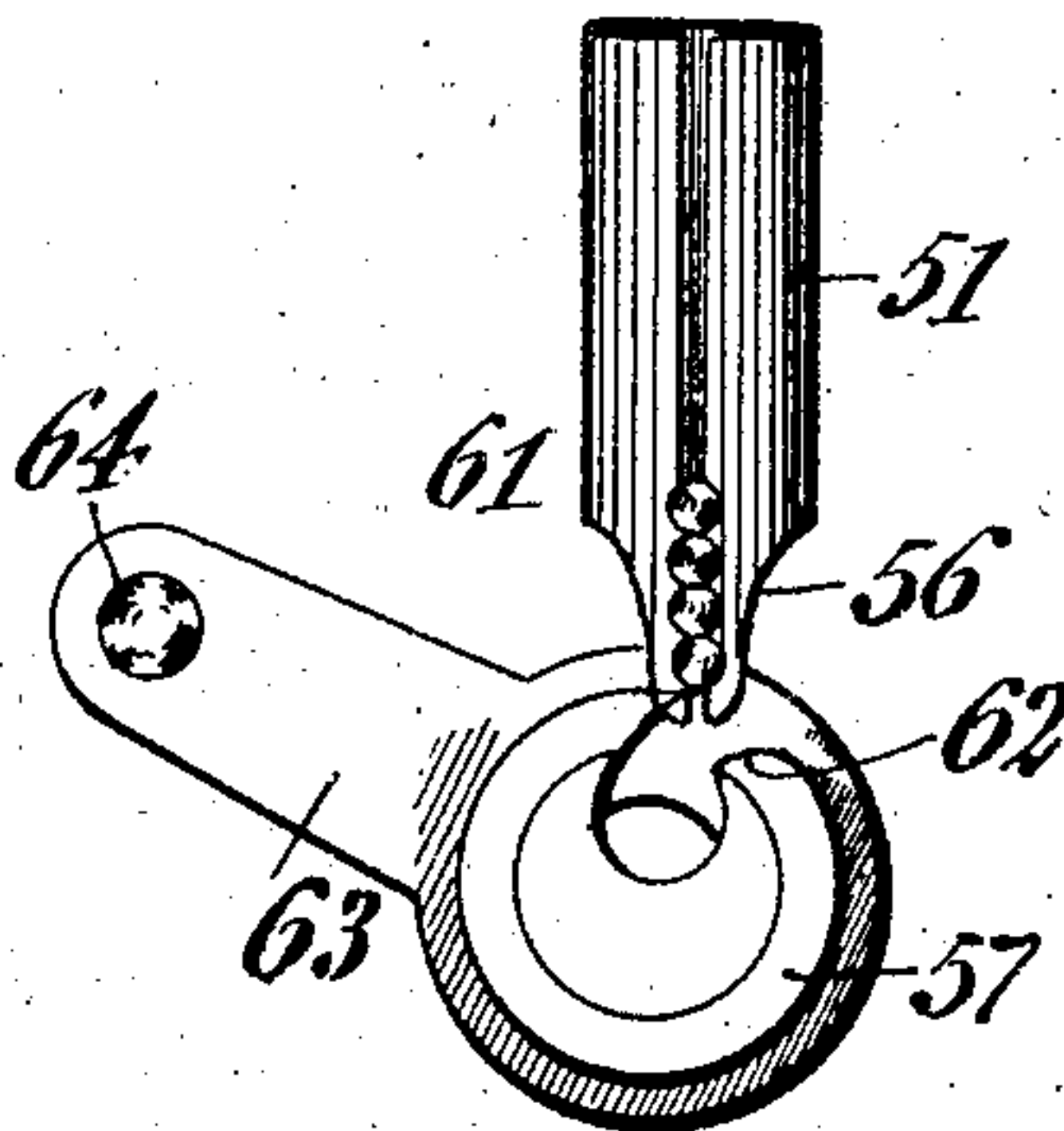
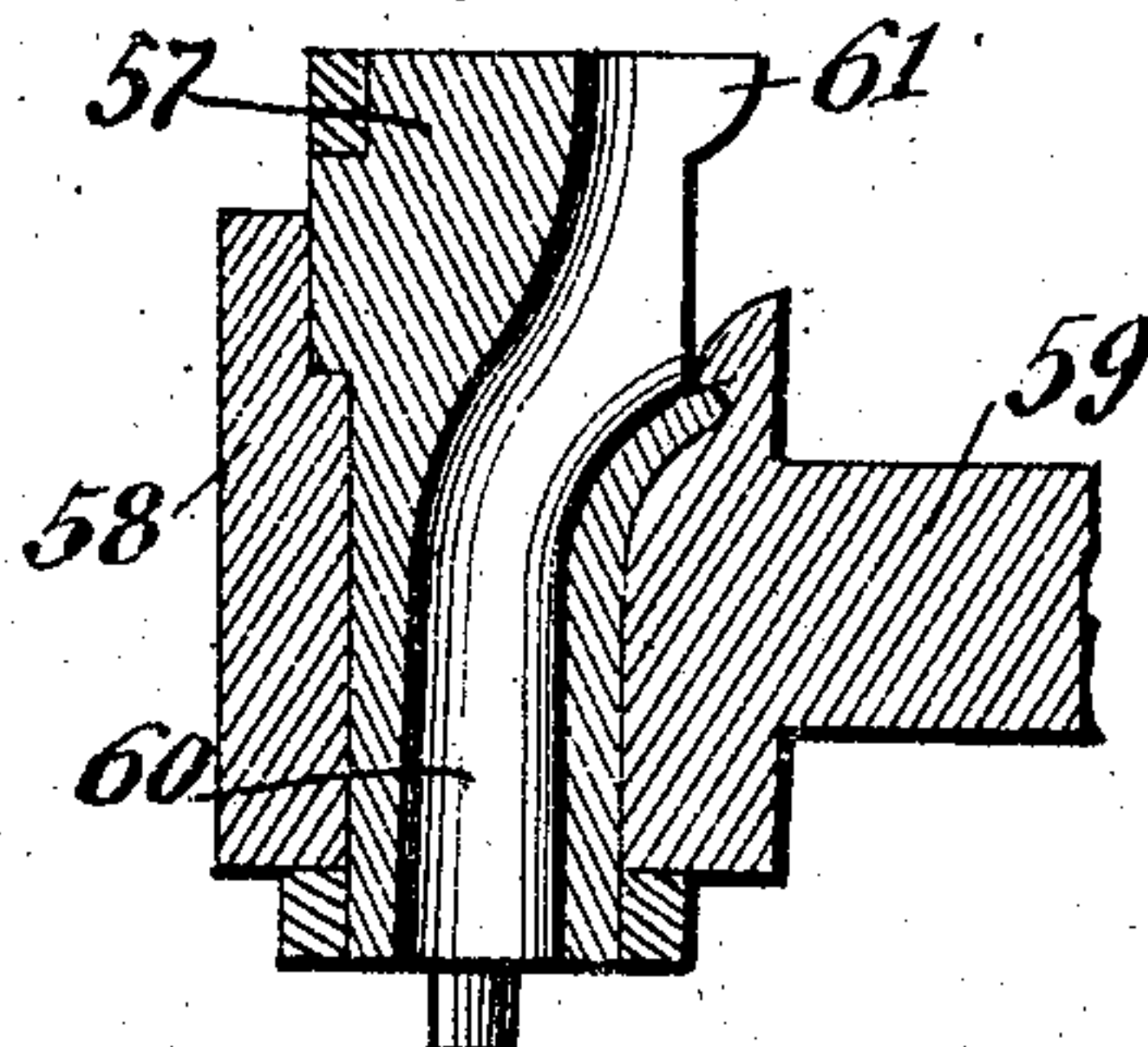


Fig: 6.



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UNITED STATES PATENT OFFICE.

JULIAN L. PERKINS, OF WEST SPRINGFIELD, MASSACHUSETTS.

NAIL-FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 786,835, dated April 11, 1905.

Application filed February 20, 1904. Serial No. 194,611.

To all whom it may concern:

Be it known that I, JULIAN L. PERKINS, a citizen of the United States, residing in West Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Nail-Feeding Mechanisms, of which the following is a specification.

This invention relates to a nail-feeding mechanism to be used in connection with a machine for drilling and nailing copper, zinc etchings, and electrotypes-plates to wooden blocks or metal bases, for which I have made application for Letters Patent under Serial No. 181,214 on November 14, 1903. In machines of this character it is desirable that one nail after another be separated and fed at suitable predetermined intervals to the nail box or guide which holds them in position until they are driven by the driving mechanism into the hole formed by the drilling mechanism.

The object of this invention is to provide a simple and practical mechanism for separating one nail from a supply of others and then conducting and guiding the so-separated nail, so as to be held in position for being driven into the block at the desired place.

For this purpose the invention consists of a nail-feeding mechanism, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved nail-feeding mechanism, showing the parts for actuating the same. Figs. 2 and 3 are detail views showing different positions of the nail-feeding operating-cam. Figs. 4 and 5 show a nail-tube and positions of the operating-cam corresponding to those of the nail-feeding operating-cam shown in Figs. 2 and 3, and Fig. 6 shows the separating cam-block in section.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings, 14 shows a supporting-standard at the top of the stand of my improved nailing and drilling-machine described in the application above referred to. The supporting-standard 14 is provided

with an overhanging end 14^a, on which slides a carrier, consisting of a plate 15, having a flanged edge 17, that overhangs the upper edge 18 of the overhanging end 14^a of the standard, and also having a corresponding flanged lower edge that overhangs the lower edge of the overhanging end 14^a of the standard, but not shown in the drawings. By these overhanging ends the carrier 15 is permitted to slide horizontally on the end 14^a. Any suitable means may be employed for causing the reciprocation of the plate 15, which means, forming no part of this invention, will not be described. The frame 14 is also provided with a vertical standard 16, which supports, by means of a bracket 12 at its upper end, a guide-tube 51, provided at its upper side with a longitudinal slot 52 and to which is pivotally connected at its upper end a supply-box 50, preferably tubular and provided with a slot in its bottom portion in alinement with the slotted portion of the tube 51. The supply-box is oscillated by a link 53, connected with a crank 54, the latter rotating on a short shaft 55, in turn rotated by any suitable means, as a pulley 23, suitably connected with any transmission means. The nails in the supply-box 50 fall by gravity into the guide-tube 51, and when they reach the lower end of the guide-tube they are received by a forked extension 56 of the tube 51, that is arranged approximately horizontally.

The lower end of the guide-tube 51 is supported by a bracket 83, secured to a bracket 59, in turn fastened to the supporting-frame 14 of the machine. This bracket 59 supports also a journal-box 58, in which oscillates a tubular separating-block 57. The block 57 has a bore 60, leading to a hook portion 61 at the top, by which when the block is oscillated the end nail will be separated from the rest supported by the guide-tube 51 and fed into the opening or bore 60 of the block 57 inside of the hook, and thus carried down through the bore 60 of the block.

In order to oscillate the block 57 at the proper time, it is provided with an arm 63, secured to the lower end portion and having a pin 64. A bar 65, having a bent portion at its lower end, is supported on the upper

overhanging part 17 of the carrier-plate 15 and has a cam-lug 66 arranged to strike the pin 64 upon the carrier-plate being reciprocated, so as to rock the block 57 from its normal position, as shown in Fig. 4, in which position it is yieldingly retained by a plate-spring 67, secured to the bracket 59 and engaging a pin 90 of the block 57, that projects through a slot 91 in the journal-box 58. The cam-bar 65 is so disposed on the carrier-plate that its cam 66 will engage the pin 64 of the arm 63 at the latter part of the movement of the carrier-plate to the left. The cam-bar 65 is also given an endwise movement, so as to amplify the movement of the block 57 by the cam. To attain this, the lower bent portion 85 of the bar 65 is dovetailed, which portion slidably engages a correspondingly-shaped channel in the top 17 of the carrier-plate. A bar 68, guided in a box 70 of the plate 15, is provided at its lower end with a roller 69, movable on the arm 47 of a bell-crank 40, which elbow-lever causes the upward movement of the bar 68. To provide for the return movement of the bar 68, a spring 96 is fastened at one end to an elongation 70 of the bar 68 and at the other end to the plate 15. (Not shown.) An irregular extension 71 of the bar 68 has a diagonal slot 72, whose walls engage a bolt 73, secured to the bar 65. Thus it will be seen that the rock of the bell-crank will, through the bar 68 and the bolt 73, cause a reciprocation horizontally of the cam-bar 65, and thereby oscillate the block 57 when its pin 64 is within operative position with relation to the cam 66. By imparting a reciprocating motion to the cam-bar 65 in the slot in the carrier a complete movement of the cam 66, and consequently of the block 57, is always secured. In the first step of the movement the arm 47 of the bell-crank will, through the bar 68, move the bar 65 and give additional movement to the nail-feeding block 57 should the former movement of the same not have been sufficient to cause the nail to be fed.

Figs. 1 and 4 show the nail-block 57 in its normal position and show clearly the end nail supported by the horizontal forked extension 56 of the tube 51, resting against an abutment-face 62 of the block 57, which abutment-face, in conjunction with the sides of the extension 56, prevents the nail from further advancing and the other nails from feeding downwardly. On slightly oscillating the block 57 clockwise it will be seen from Fig. 5 that the hook 61 of the block 57 will pass between the end nail and the adjacent nail of the forked extension or strip 56 next above, thereby advancing the end nail, while the same motion will move the abutment-face away from its former position,

thereby permitting the nail to enter the bore 60 of the block 57 and fall therethrough by gravity. The next nail on the strip 56 will be prevented from advancing by engaging the outer face of the hook 61. Upon the block being rocked back to its former position as soon as this succeeding nail is released from the outer face of the hook 61 it will advance but a short distance until it will be prevented from doing so by the abutment-face 62, which will arrest the nail, and also the succeeding ones, until the next oscillation of the block. Thus at each oscillation back and forth of the block one nail will be selected and fed into and through the bore of the block.

On the carrier-plate 15 is secured a guide-tube 74, whose upper flaring end 75 is in line and below the bore 60 in the block 57 when the carrier is at the limit of its left-hand position. When the carrier is in this position, the operation of the nail-feeding device, above described, takes place and a nail is fed through a bore of the block. The nail passes downwardly through the guide-tube 74 and is received by a suitable holder, which retains the nail in position until it is operated upon by the driving mechanism. The driving mechanism forms no part of this invention and is therefore not described herein.

I claim as new and desire to secure by Letters Patent—

1. In a nail-feeding mechanism, the combination with a support, a bracket carried thereby, a nail-feeding strip supported by said bracket, an oscillating nail-selecting block beneath said strip, a carrier upon said support provided with a reciprocating cam-bar for oscillating said block, a pin upon said bar, a reciprocating member associated with said carrier and having a slot engaging said pin, and means for actuating said reciprocating member.

2. In a nail-feeding mechanism, the combination with a support, of a bracket connected thereto, a nail-feeding strip supported by said bracket, an oscillating nail-selecting block beneath said strip, a reciprocating carrier upon said support, said carrier having a transverse dovetailed slot, a cam-bar on the carrier for oscillating said block, said cam-bar having an enlarged terminal portion slidable in said transverse slot, and means for reciprocating said cam-bar in the same.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JULIAN L. PERKINS.

Witnesses:

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K. I. CLEMONS.