

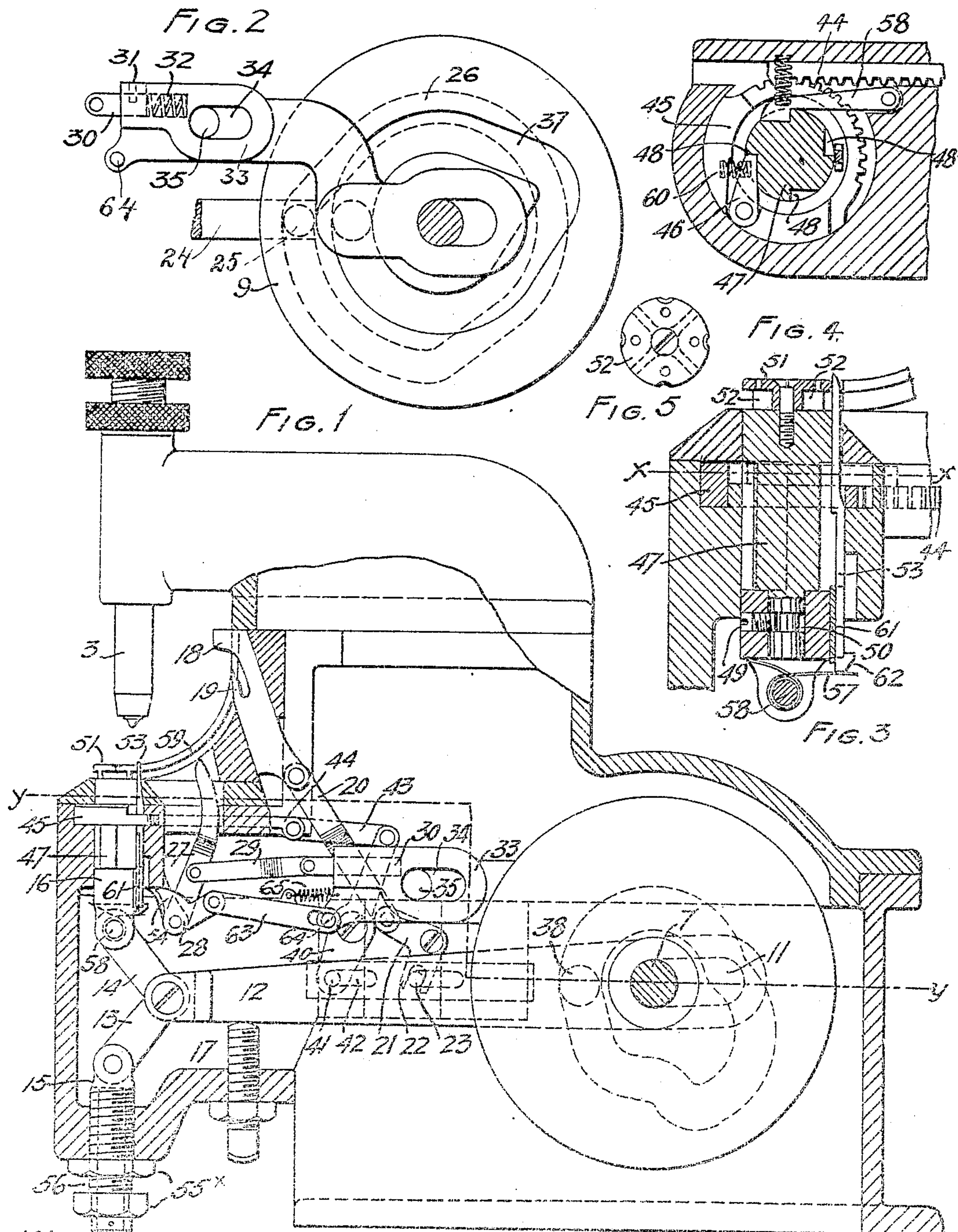
No. 778,796.

PATENTED DEC. 27, 1904.

I. F. PECK.
MACHINE FOR SETTING LACING HOOKS.

APPLICATION FILED SEPT. 25, 1903.

2 SHEETS—SHEET 1.



WITNESSES

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INVENTOR

I. F. Peck

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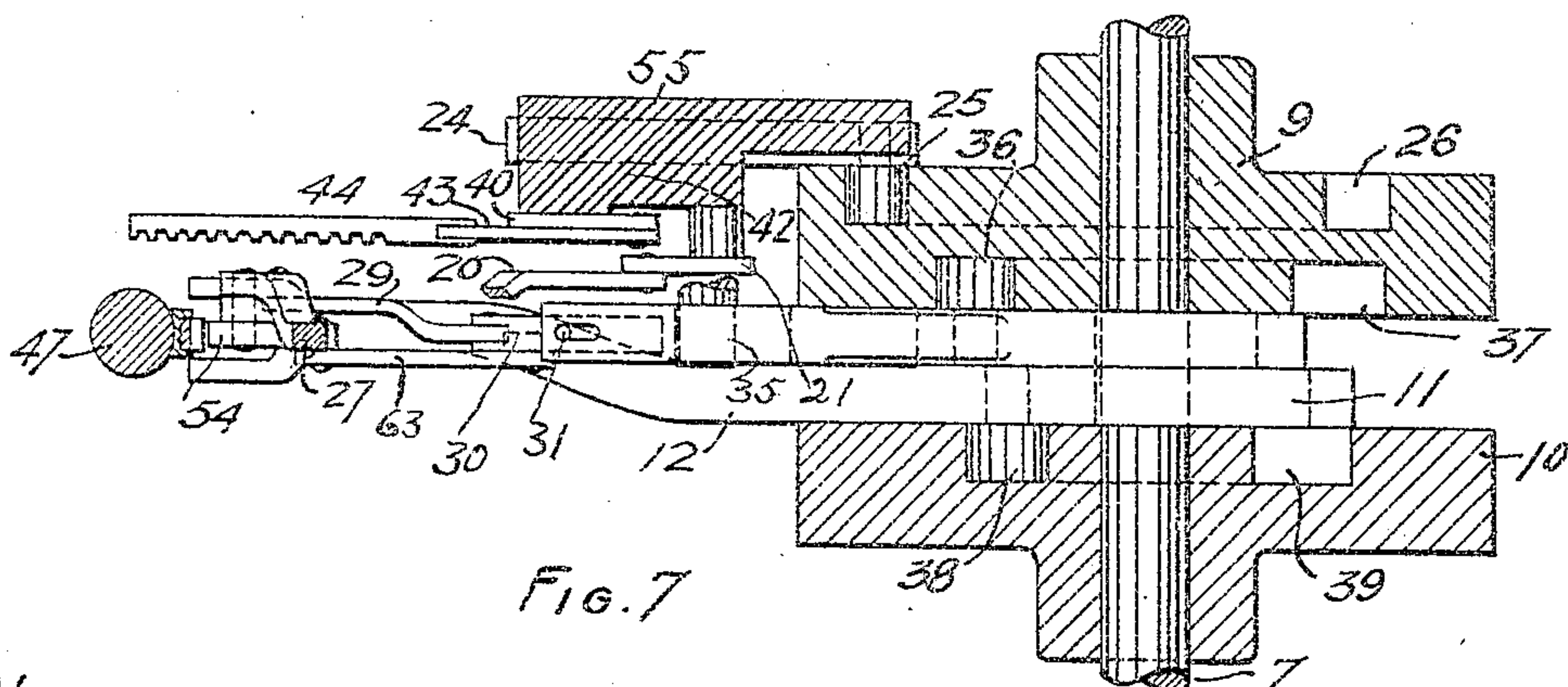
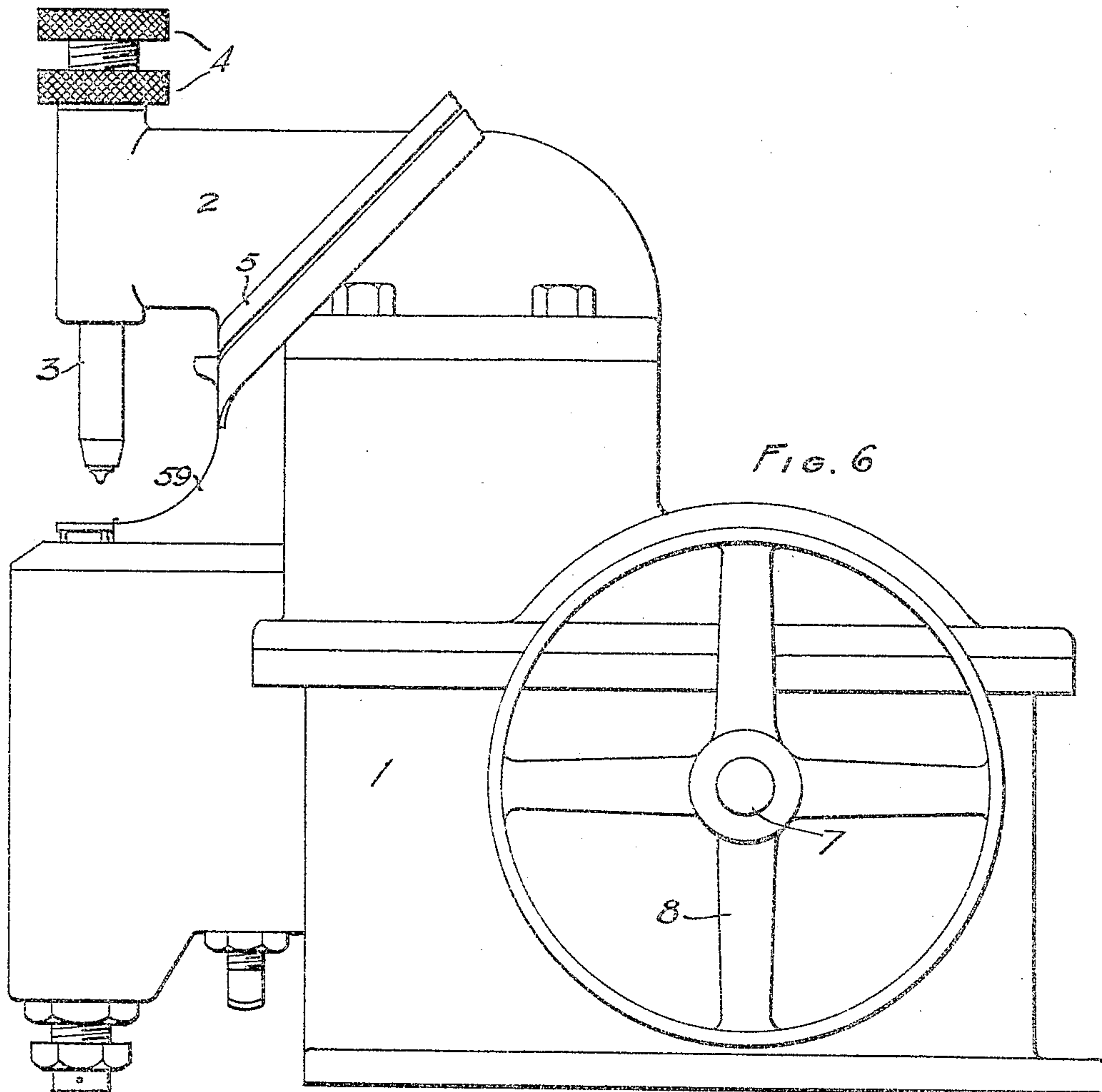
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UNITED STATES PATENT OFFICE.

IRA F. PECK, OF CRANSTON, RHODE ISLAND.

MACHINE FOR SETTING LACING-HOOKS.

SPECIFICATION forming part of Letters Patent No. 778,796, dated December 27, 1904.

Application filed September 25, 1903. Serial No. 174,672.

To all whom it may concern:

Be it known that I, IRA F. PECK, a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Setting Lacing-Hooks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the setting mechanism of machines for setting lacing-hooks, and has for its object a more efficient, rapid, and cheap means for performing the setting operation than has been hitherto employed.

To the enumerated ends my invention consists of the novel construction and combination of the setting-die and its connected parts hereinafter described in connection with the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section, partly in side elevation, of a machine embodying my invention; Fig. 2, a side elevation of a driving-disk, showing in dotted lines one of the cam-channels; Fig. 3, a vertical central section of the setting-tools and adjacent parts; Fig. 4, a transverse section of the same on line *xx* of Fig. 3; Fig. 5, a top plan view of the die-head; Fig. 6, a side elevation of the entire machine; and Fig. 7, a transverse section of the machine, exclusive of the housing and the portion of the frame adjacent the plunger, taken on line *yy* of Fig. 1.

Like reference-numerals indicate like parts throughout the views.

Referring to the drawings by numerals, 1 is the frame or body of machine equipped with my invention, 2 the yoke, and 3 the anvil with the usual adjusting-nuts 4 upon its upper extremity.

5 is an inclined run for guiding the hooks, terminating in the throat portion 59 in the front of the machine.

The driving-shaft 7, driven through pulley 8, is mounted transversely in the rear portion of the machine-frame and carries the disks 9 and 10. A reciprocating bar 12, provided with a longitudinal slot 11, is mounted through said slot upon the shaft 7 and has pivoted to its forward extremity toggle-links 14 and 13,

whose opposite ends are respectively pivoted 50 to the plunger 16 and to the pin 15, vertically adjustable in the frame by nuts 55^x on a threaded sleeve 56. An adjusting-screw 17 in the frame supports the lower edge of the bar 12. This bar is reciprocated by the 55 roller 38, traveling in the channel 39 of the disk 10.

The slide-dropper 18, with detent 19 for separating individual hooks upon the run, is connected to the extremity of link 20, attached 60 to the bell-crank lever 21, pivoted to the frame. The second arm 22 of said crank is slotted to engage a pin 23, projecting from the inner face of a slide 24, mounted in the machine-body. To the slide is fixed a roller 25, regis- 65 tering with the channels 26 in the outer face of the disk 9.

The mechanism for conveying the separated hook to the setting-die is the following: A pusher 27 is pivoted at its lower end to a pro- 70 jection 28 upon the frame and has attached thereto a link 29, connected with the bar 30, which is fixed by a pin 31 and cushioned by a spring 32 in an arm 33. The arm has a slot 34 to admit a pin 35, fixed to the machine- 75 frame, and is driven by roller 36, moving in channel 37 in disk 9.

The setting-die is actuated as follows: A lever 40 is pivoted centrally to the machine-frame, with one end engaging a pin 41 in slide 80 24, which traverses a slot 42 in a guide-block 55, depending from the machine-frame. The opposite lever end is connected by a link 43 to a rack-bar 44, mounted to reciprocate in the machine-frame adjacent the plunger. The 85 rack engages a segmentally-toothed ring or ratchet-sleeve 45, rotatably mounted in the machine-frame. A pawl 46, tensioned by a spring 60, is carried by this ring and registers with vertical circumferential notches 48 90 in the rotatable die 47, mounted in plunger 16. A detent 58 upon the machine-frame also engages said notches. The die 47, which is a running fit in the plunger 16, is engaged with the latter by a set-screw 49, registering 95 with a recess 50 in its reduced lower portion. Thus the rotary motion of the toothed ring 45 is imparted to the die 47 without impart-

ing such motion to the lower part of plunger 16. The upper extremity of the die 47 is provided with a circular head or die-plate 51, beneath which are four radial recesses 52 to receive the hooks. In a vertical guide 61, fixed to the side of the plunger 16, slides a stop 53, with a lug 62 upon its lower extremity adapted to receive the downward impact of a lever 54, pivoted to the arm 28. This lever is actuated by a link 63, tensioned by a spring 65 and connected to a pin 64 in the outer lower end of arm 33, which, as previously stated, receives its motion from cam-channel 37. The stop is moved upward by a coil-spring 57, mounted upon the pivot-pin 58 of the plunger 16.

The operation of my machine is as follows: The hook slides from the run 5 in the dropper 18. The revolution of the disk 9 upon the driving-shaft 7 lowers the dropper and the hook enters the throat portion 59 of the run, where it is thrust forward by the pusher 27, actuated by disk 9, into position with its hook portion in one of the recesses 52, the stop 53 having been lowered to allow its passage. The reciprocating bar 12 is then thrown forward and the plunger 16 elevated, forcing the hook engaging the die-head 51 into contact with the anvil 3, which completes the swaging operation. In the descent of the plunger the die is revolved ahead a quarter-turn and the set-hook removed.

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

1. In a machine of the class described, the combination with a plunger of a die rotatably mounted in the plunger, notches upon the die, a ring surrounding the die, a pawl upon the ring registering in the notches, a detent inde-

pendent of the ring engaging the notches, and means for circularly reciprocating the ring.

2. In a machine of the class described, the combination with the frame of a vertically-reciprocating plunger in the frame, a die rotatably mounted in the plunger, engaging means upon the exterior of the die, a toothed ring surrounding the die, a pawl upon the ring registering with the engaging means upon the die, a detent mounted on the frame also registering with the engaging means, and a reciprocating toothed bar also mounted in the frame and meshing with the toothed ring.

3. In a machine of the class described, the combination with a plunger and means for reciprocating the same, of a die rotatably mounted in the plunger, and a spring-pressed vertical pin slidably mounted upon the side of the plunger and movable therewith for checking the advance of hooks to the die.

4. In a machine of the class described, the combination with a plunger and means for reciprocating the same, of a die rotatably mounted in the plunger, and spring-pressed means upon the plunger and movable therewith for checking the advance of hooks to the die.

5. In a machine of the class described, the combination with the plunger of a die rotatably mounted in the plunger, a vertical stop-pin mounted upon the plunger, spring means in the plunger for upwardly pressing the pin, and a lever engaging the pin and means connected to the lever for depressing the latter.

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

IRA F. PECK,

Witnesses:

HORATIO E. BELLOWS,
WILLIAM E. BROWN.