

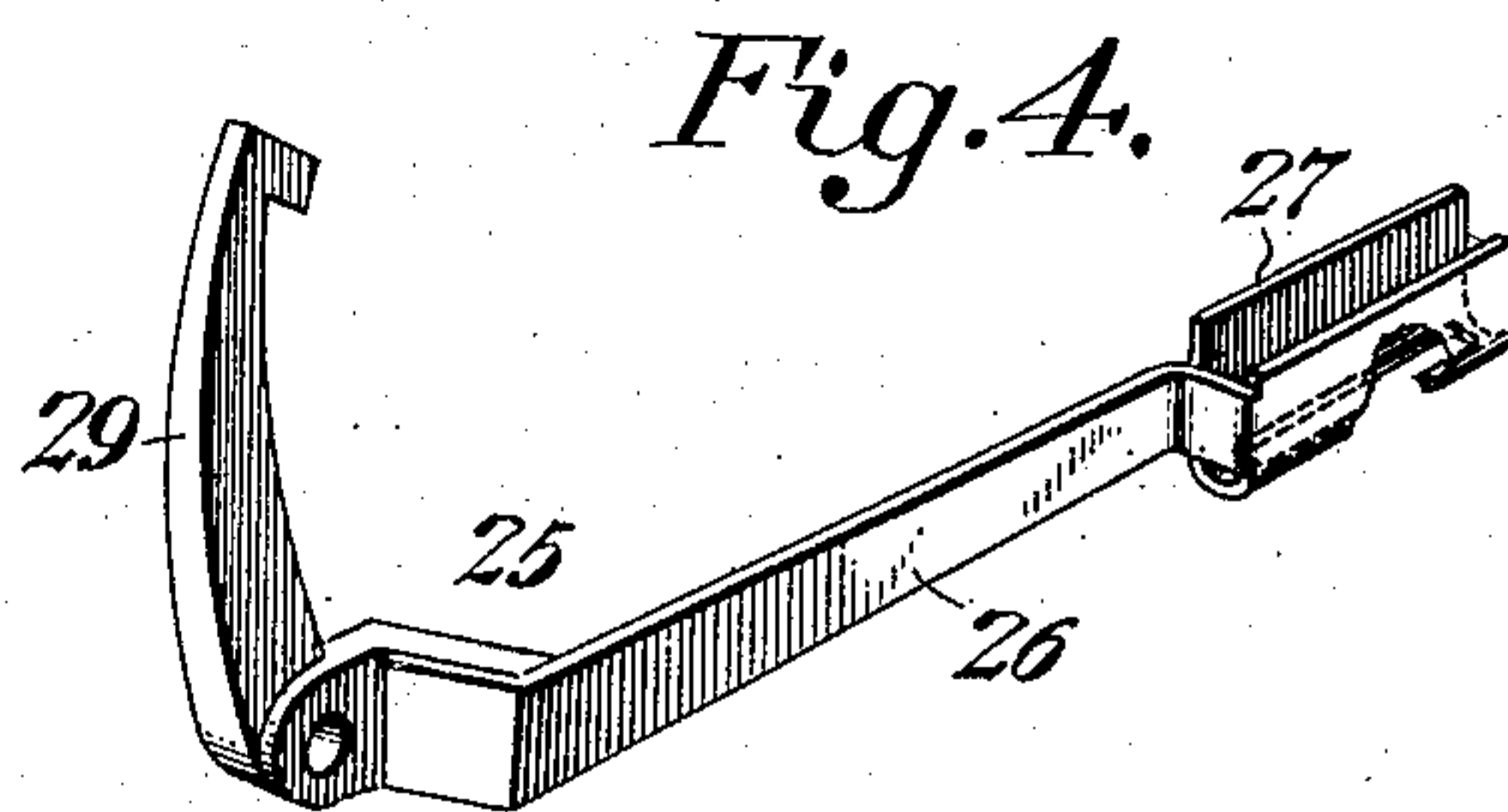
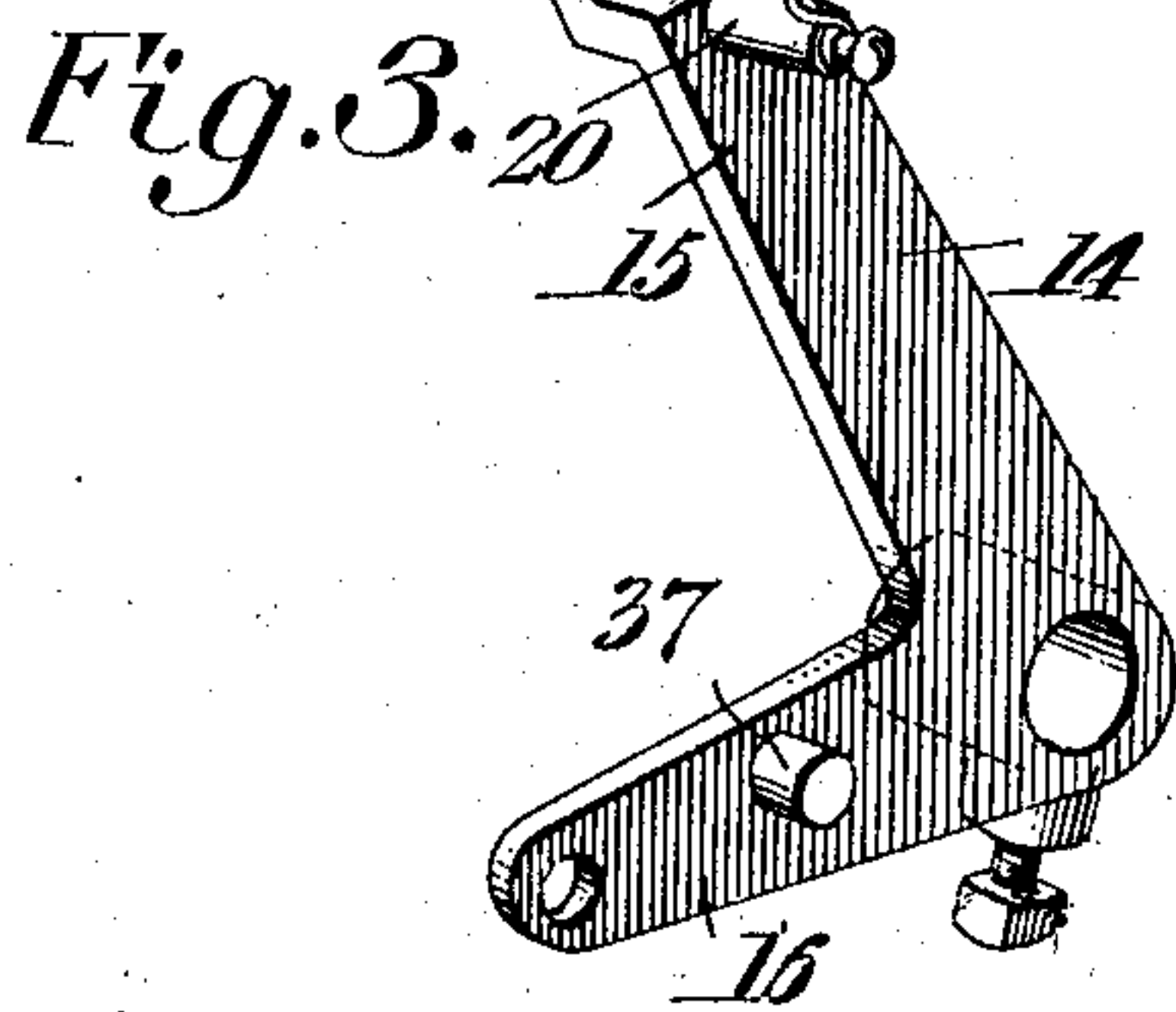
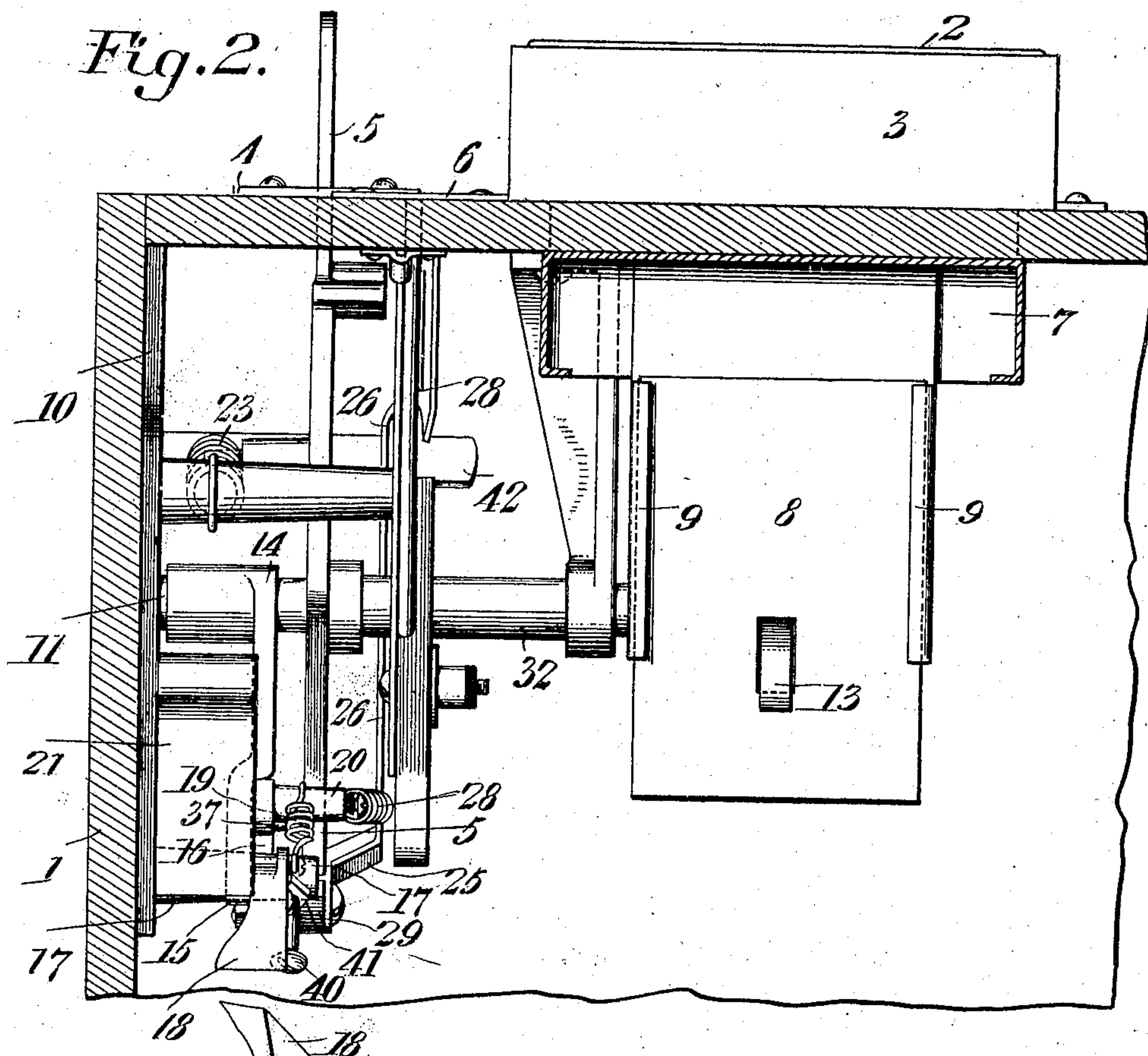
No. 816,107.

PATENTED MAR. 27, 1906.

S. L. LONG.
COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED MAR. 21, 1904.

2 SHEETS—SHEET 2.



Witnesses
E. J. Stewart
Jno. E. Carter

Sidney L. Long Inventor
by *Chas. Snow & Co.* Attorneys

UNITED STATES PATENT OFFICE.

SIDNEY L. LONG, OF MINNEAPOLIS, MINNESOTA.

COIN-CONTROLLED VENDING-MACHINE.

No. 816,107.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed March 21, 1904. Serial No. 199,251.

To all whom it may concern:

Be it known that I, SIDNEY L. LONG, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Coin-Controlled Vending - Machine, of which the following is a specification.

This invention relates to improvements in vending - machines of that general class in which the weight of a deposited coin serves to move a catch to such position as to couple the operating-lever to the delivery mechanism.

One object of the invention is to provide a machine which will insure the delivery of the articles when a coin of proper value is inserted, so that there will be no risk of the intending purchaser losing money if he fails to properly operate or to depress the actuating-lever fully at the first attempt.

A further object of the invention is to provide a machine of this character in which after the operating movement of the lever has been started it will be impossible to force it to return to initial position until after it has completed the full discharging movement, thus preventing manipulation of the machine and the delivery of more than a single article in return for each coin inserted.

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

In the accompanying drawings, Figure 1 is a sectional elevation of a coin - controlled vending-machine constructed in accordance with the invention. Fig. 2 is a sectional plan view of the same. Fig. 3 is a detail perspective view of the bell-crank lever and pawl for preventing return movement of the delivery devices in advance of a complete depression of the operating-lever. Fig. 4 is a detachable perspective view of the coin-receiving bucket and the catch connected thereto.

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

The working parts of the machine are con-

tained in a suitable casing 1, which may be of ornamental character, and at the front of the casing is a delivery-table 2, on which the goods are discharged, the articles being delivered through a suitable opening that is shielded by a hood 3. The front of the casing also carries a slotted plate 4 for the passage of an operating-lever 5 and has a slotted escutcheon 6 in alinement with the end of the coin-chute. Within the casing is a magazine 7, adapted to contain the articles to be delivered, such as small packages of chewing-gum or candy, the delivery being accomplished by a slide 8, adapted to suitable guides 9, carried by the casing. To the inner wall of the casing is secured a cast base-plate 10, having a bearing for the reception of one end of a shaft 11, the shaft being provided with a support in the form of a bracket projecting from the front wall of the casing. To the outer end of the shaft is secured a rocker-arm 13, that extends upward through the slot in the said slide and forms an actuating means therefor.

To the inner end of the shaft 11 is rigidly secured a bell-crank lever 14, having two arms 15 and 16, the upper and longer arm normally resting against a lug 17, formed integral with the base and serving as a stop for limiting movement of the lever. To the upper end of the longer arm 15 is pivoted a pawl 18, that is normally held in a central position or in the general plane of the arm 15 by means of a coiled tension - spring 19, that is connected at its lower end to a lug 20, projecting from the arm 15, the spring serving to permit swinging movement of the pawl in both directions. The pawl is adapted to engage the teeth of a rack 21, carried by the base-plate 10 and arranged on a curved line struck from the axis of the shaft 11, the pawl traveling freely over the teeth as the lever is moved in both directions, but when once in mesh with the rack-teeth serving to positively prevent any return movement after the movement in either direction has commenced and the return movement cannot be permitted under any circumstances until a full stroke of the lever has been accomplished.

To the shorter arm of the bell-crank lever 14 is pivoted a bell-crank lever 25, the longer arm 26 of which is provided at its outer end with a coin-receiving cup 27, disposed at the end of the coin-chute 28, the bottom of the coin-cup having a slot of such size as to permit of the passage of coins or other articles of

smaller diameter than that of the coin necessary to operate the machine. The longer arm of the lever is connected to the lug 20 by means of a light tension-spring 28, and the shorter arm 29 of said bell-crank lever is in the form of a catch that is adapted to engage with the rear end of the operating-lever 5.

The operating-lever 5 is loosely mounted on the shaft 11, being held in proper position on said shaft by an auxiliary sleeve or collar 32, and the front end of the lever is normally held in elevated position by means of a strong tension-spring 33, extending between the lever and a lug carried by the frame, the lug serving also as one of the supports for the frame. The rear end of the lever is pointed in order that it may be properly engaged by the catch 29, and downward movement of the rear end of said lever is limited by a pin 37, carried by the arm 16 of the bell-crank lever 14, so that the stress of the spring 33 is thus transferred in part to the bell-crank lever 14, and the upper arm 15 of the latter is held against the stop-lug 17. When the parts are in normal position, the lever may be depressed without effecting any movement of the discharge-slide until after a coin has been inserted. On the insertion of a coin, if of proper value, the coin will pass down through the chute and will be caught in the cup of said lever, its weight overcoming the stress of the light tension-spring 28 and causing the catch 29 to engage the rear end of the operating-lever 5. When the lever is depressed, its rear end will carry the catch 29 with it, and this movement will be transmitted to the bell-crank lever 14 and through the lever 14 to the shaft 11 and the delivery-slide, causing the discharge of the lowermost article in the magazine. The discharging movement of the lever causes the pawl 18 to engage with the teeth of the rack 21, and during this movement the pawl is shifted to a position at an angle to the general plane of the arm 15, so that the radial distance between the axis of the shafts 11 and the end of the pawl when the latter is engaged with the rack will be less than the normal distance when the pawl is straight, so that when once the pawl is engaged with the rack it will be impossible for any backward movement to occur unless some of the parts break, and if the pawl is released before its full downstroke is accomplished it will remain in the position to which it has been moved, so that the downstroke may be completed at any time, and thus secure the delivery of the article and avoid danger of the loss of the money inserted and the non-delivery of goods. In order to prevent the disengagement of the catch 29 from the end of the operating-lever, the lug 17 has a threaded opening for the passage of a screw 40, having a lock-nut 41. The end of this screw is disposed immediately above the catch 29 during all the time the latter is in

engagement with the operating-lever after the movement of the latter has been started, and it will be observed that the outer face of this catch is disposed on a curved line struck from the center of movement of the shaft 11, so that the screw will at all times be in position to prevent disengagement of the operating-lever from the catch should the operating-lever be moved for only a portion of its stroke. On the release of the operating-lever if the full stroke has been accomplished the pawl will move to the opposite angle and will travel rapidly over the teeth of the rack 21 under stress of the heavy tension-spring 23. The coin deposited in the cup 27 comes into contact with a spring 42 at a point near the limit of downward movement of the operating-lever, and the coin will thence be elevated, or rather will be held from further downward movement, while the cup continues its downward movement and effects the discharge of the coin.

In the coin-chute is placed a magnet 45, which serves to deflect any paramagnetic disk or slugs which may be inserted in the machine.

Having thus described the invention, what is claimed is—

1. In a coin-controlled vending-machine, the combination with a delivery-slide, of a shaft, means for operatively connecting the slide and shaft, an operating-lever loosely mounted on the shaft, a bell-crank lever secured to the shaft, a spring-held pawl carried by one arm of the bell-crank lever, a rack for engaging the pawl, the distance between the fulcrum-point of the lever and the point of the pawl when the latter is disengaged from the rack, being greater than the distance between said fulcrum-point and the rack-teeth, thereby preventing rearward movement of the pawl in advance of the complete stroke of the bell-crank lever, a pivotally-mounted coin-actuated pawl carried by the shorter arm of the bell-crank lever, the outer face of said pawl being on an arcuate line approximately concentric with the axis of the shaft, and an adjustable screw serving to prevent release movement of the pawl until the completion of the delivery operation.

2. In a vending-machine, a shaft, a delivery means connected thereto, an operating-lever loosely fulcrumed on the shaft, a bell-crank lever secured to the shaft, a pawl pivotally mounted on the longer arm of the bell-crank lever and free to yield in both directions, a spring tending to hold the pawl in a central position, a rack with which the pawl engages, a stop for limiting movement of the bell-crank lever, a second bell-crank lever pivoted to the shorter arm of the first bell-crank lever, and including a locking-pawl and a coin-receiving bucket, the outer face of said pawl being on an arcuate line approximately concentric with the axis of the shaft, means

for preventing release movement of the pawl
until the completion of a delivery operation,
a spring tending to maintain the operating-
lever in normal position, and a lug serving by
5 engagement with the bell-crank lever to trans-
mit a portion of the stress of the spring there-
to, substantially as specified.

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

SIDNEY L. LONG.

Witnesses:

J. A. KUNZ,

F. A. GROSS.