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PATENTED SEPT. 29, 1903.

B. F. D. MILLER.

COUNTERFEIT EXCLUDER FOR NICKEL-IN-THE-SLOT MACHINES.

APPLICATION FILED SEPT. 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

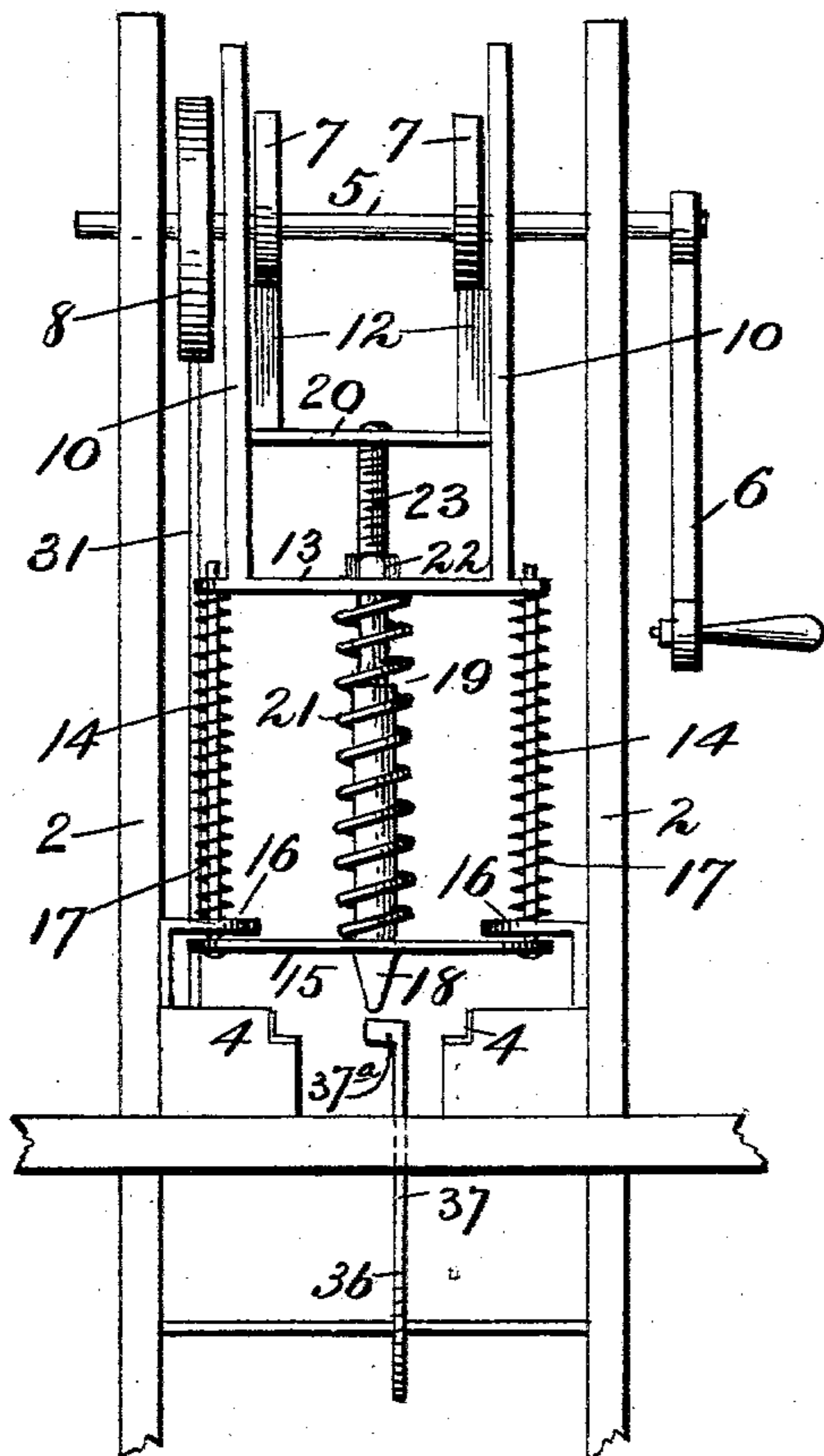


Fig. 1.

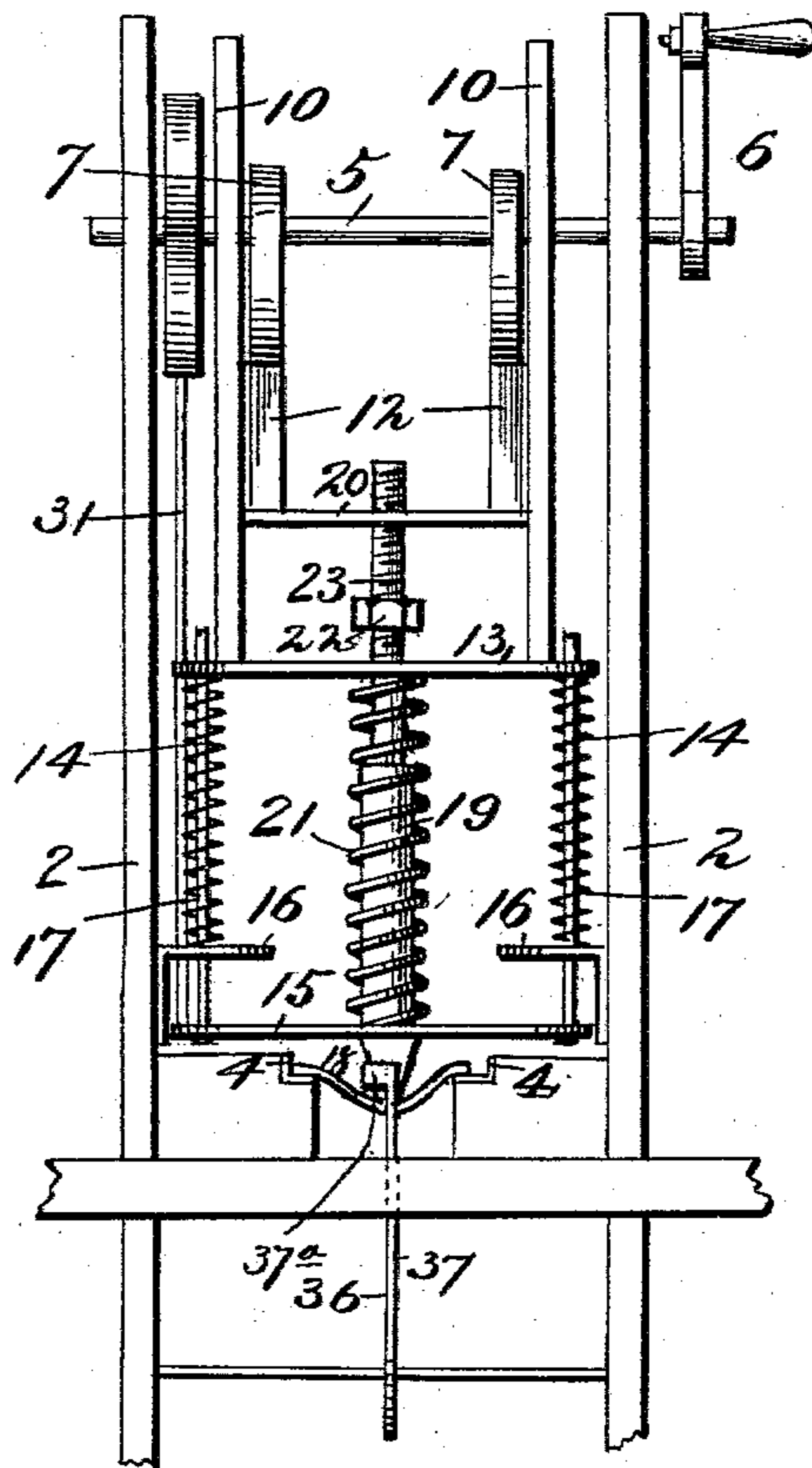


Fig. 2.

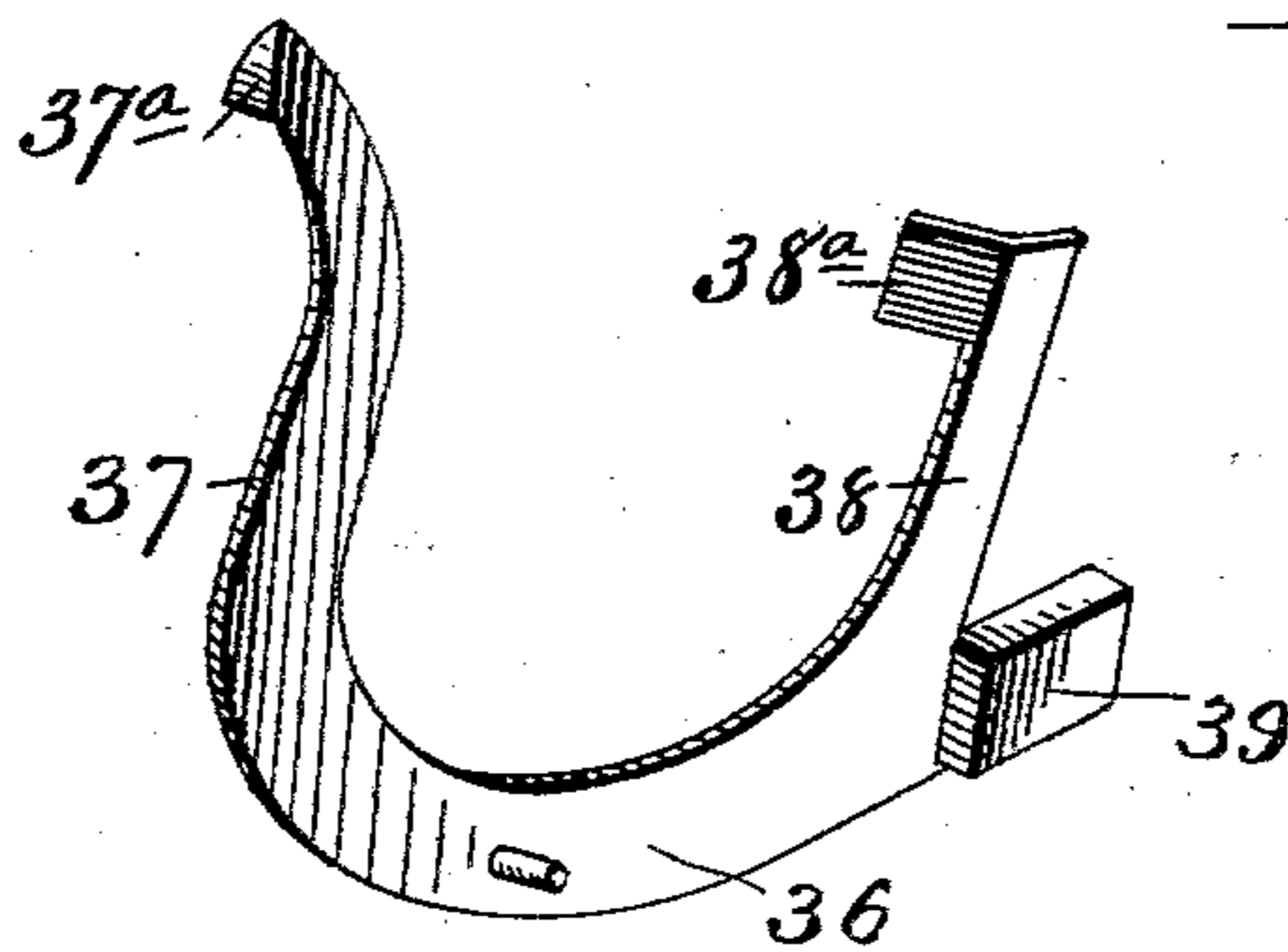


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 3.

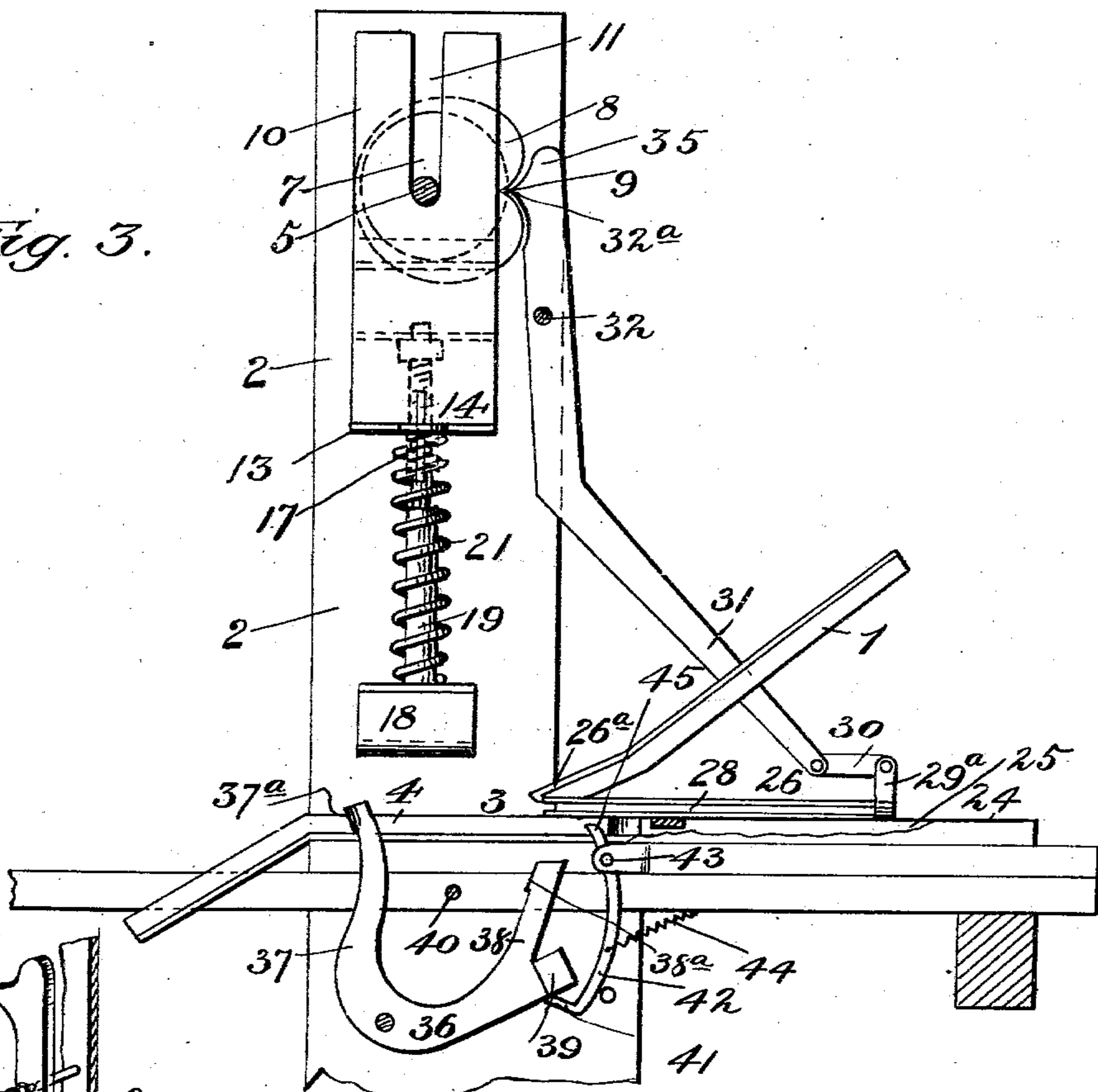


Fig. 5.

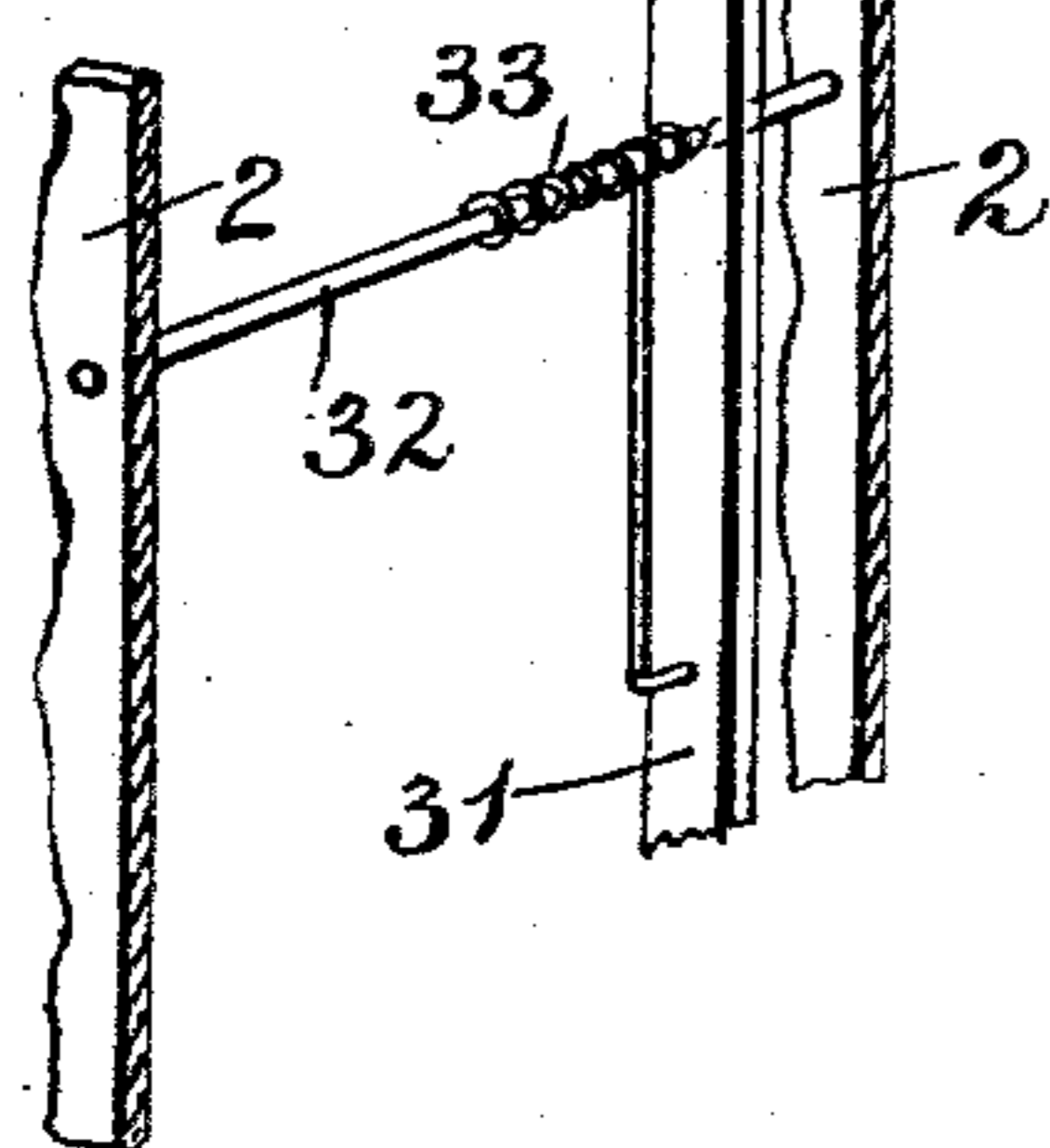
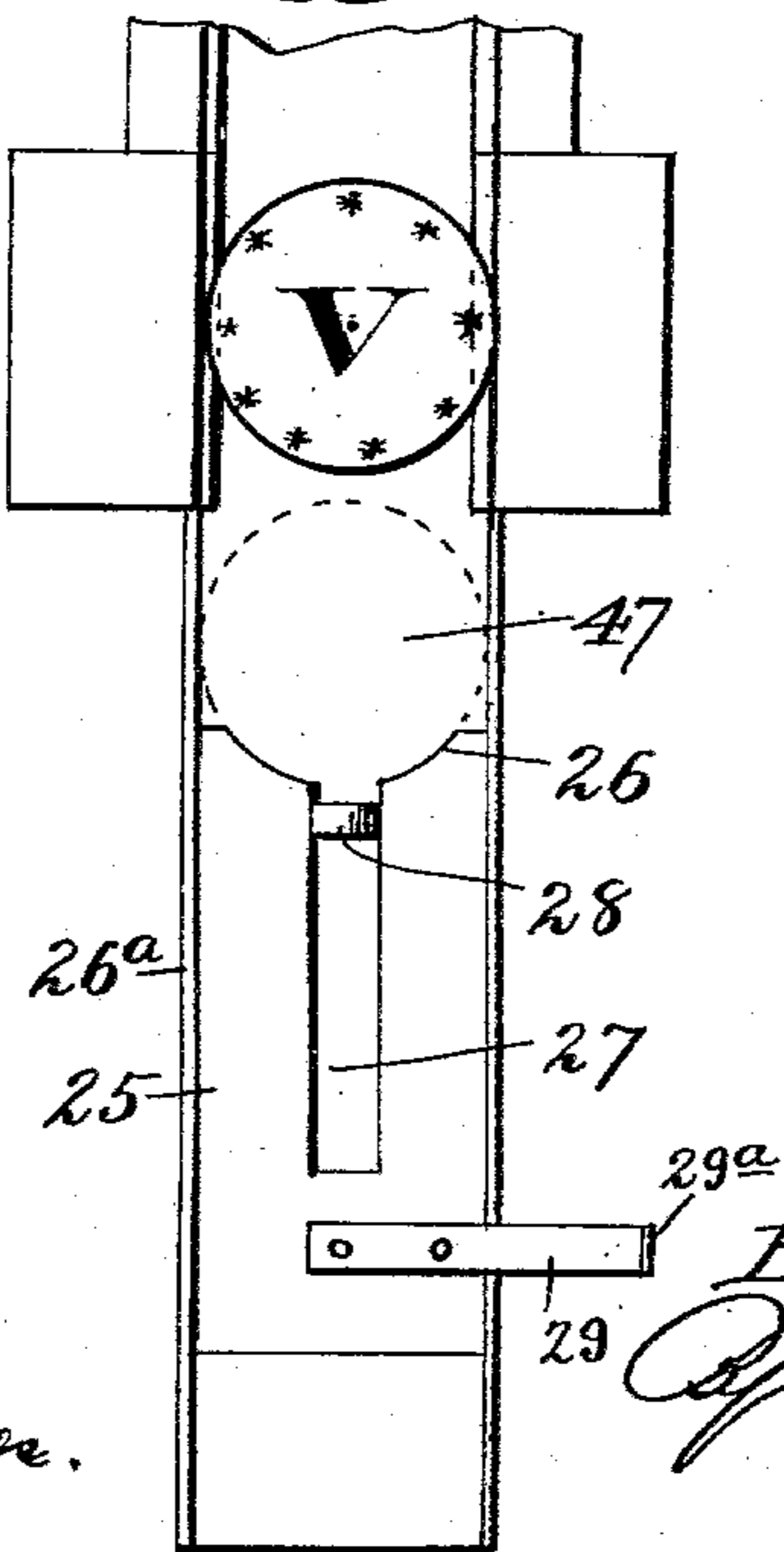


Fig. 6.



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UNITED STATES PATENT OFFICE.

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COUNTERFEIT-EXCLUDER FOR NICKEL-IN-THE-SLOT MACHINES.

SPECIFICATION forming part of Letters Patent No. 740,158, dated September 29, 1903.

Application filed September 9, 1902. Serial No. 122,714. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. D. MILLER, a citizen of the United States, residing at Wooster, in the county of Wayne and State of Ohio, have invented new and useful Improvements in Counterfeit-Excluders for Nickel-in-the-Slot Machines, of which the following is a specification.

My invention relates to counterfeit-excluders for nickel-in-the-slot machines, and the object of the same is to provide a device of this character which will force the counterfeit coin out of the track pursued by a good nickel before such coin can come in contact with the trigger for setting off the machine. With this object in view I have devised a novel mechanism which will bend or break lead or anti-mony slugs and attract iron ones and in this way prohibit them from setting off the machine. The construction by which this is accomplished is fully described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a front elevation of my device with the hammer up. Fig. 2 is a front elevation of the same with the hammer down. Fig. 3 is a side elevation of the same. Fig. 4 is a detail of the kicker. Fig. 5 is a detail of the upper end of the lever and spring. Fig. 6 is a plan view of the magnet and guides.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates the upper portion of an inclined track for coins, which track connects with the slot (not shown) in which the coin is inserted. My excluder is supported in two uprights 2, planted one on each side of the track 1. A level place 3 is formed in the track and the bottom is omitted, leaving only guides 4 to support the coin, which is held from sliding past by means to be hereinafter described.

My device consists of three parts, a crusher, a magnet, and a kicker, which parts will be taken up and described in the order named. The crusher is operated by hand-power by the person who deposits the coin, and with this object in view a shaft 5 is journaled in the standards 2 and fitted with a crank 6, which is located outside of the casing of the

nickel-in-the-slot machine in reach of the person dropping in the nickel. Keyed to the shaft 5 at points intermediate the standards 2 are two eccentrics 7 and a cam 8, having a rounded V-shaped notch 9 therein. Arms 10, slotted at 11, extend up and embrace the shaft 5. These arms 10 are located one on each side of the eccentrics 7 and support bearing-blocks 12, with which the eccentrics 60 contact. A cross-head 13 is supported on the lower ends of the arms 10 and is slidingly mounted on two guide-rods 14. A second cross-head 15, which is rigid on the rods 14, ties them together, and they slide intermediate their ends in apertured arms 16, which are supported by the uprights 2. Spiral springs 17 surround the rods 14 and are held by the arms 16 and cross-head 13. By this arrangement the bearing-blocks 12 are always 70 held up in contact with the eccentrics 7. A hammer 18 for testing the coins is mounted on the end of a rod 19, which passes through the cross-head 15, is keyed therein, and extends up and through the cross-head 13 and a cross-bar 20. A spiral spring 21 surrounds the rod 19, which spring is confined by the cross-heads 13 and 15, and its tension is regulated by means of a nut 22, which fits a threaded portion 23 on the rod 19. This nut 80 22 also serves to prevent the withdrawal of the guides 14 and the rod 19, and thus holds the structure together. It will be evident from the above disclosure that when the crank 6 is turned the eccentrics 7 will bear on 85 the blocks 12, which action will press the hammer 18 down with a force equal to the differential stress of the springs 21 and 17.

A small space intervenes between the lower end of the track 1 and a base 24, which space 90 accommodates a flat steel bar-magnet 25, mounted to slide in guides 26. This magnet 25 is cut away at the end, at 26, to fit a nickel and is traversed by a slot 27, which is spanned by a bridge 28, for a purpose which will appear. An arm 29 is secured to the rear end of the magnet 25, and pivoted to the upturned end 29^a thereof is a toggle 30, which is oppositely pivoted to the lower end of a lever 31. This lever 31 is fulcrumed intermediate its 100 ends on a shaft 32, supported in the standards 2. A coiled spring 33 surrounds the shaft

32, is secured by one end thereto, while the other end is prolonged and hooked around the lower arm of the lever 31. By means of this arrangement a rounded bill 32^a on the head 35 of the lever is held in contact with the cam 8 and in engagement with the notch 9 therein. When the cam 8 is turned, the lever 31 is actuated and the magnet 25 reciprocated in its guides.

The before-mentioned kicker is provided to do two things—first, to stop the nickel under the hammer, and, next, to kick or push it along after the breaking or bending test has been completed. With these ends in view a U-shaped member 36 is pivoted intermediate its arms 37 and 38. Each of these arms is provided with an arm, (designated by 37^a and 38^a, respectively,) which arms are perpendicular to the plane of the U. The arm 38 is loaded by a weight 39, which overbalances the arm 37 and throws the arm 37^a up to obstruct the track of the coin to bring it to a stop immediately under the hammer of the tester. A stop 40 limits the upward swing of the U. The downward movement is limited by a hook 41, which extends at right angles to the lower arm of a lever 42, fulcrumed intermediate its ends on a cross-pin 43. A spring 44 retracts the lower arm of this lever and thus brings its head 45 up and into the track of the reciprocating magnet 25. The head 45 is rounded off on the top in one direction to enable the little bar or bridge 28, heretofore described, to ride over it on its forward movement and to engage it in its backward, thereby actuating the lever 42, bringing the arm 41 in contact with the arm 38 of the U, tilting the U, and simultaneously lowering the arm 37^a to release the coin and bring the arm 38^a in contact with the coin, if good, to start it down a track 46 on the second stage of its journey into the machine. In case the coin was bad it would be forced through by the hammer 18 into a trash-box placed below, unless it was iron or steel, in which case it would be retracted by the magnet 25 and brought under the chute 1 to the position 47, where the guides 4 are cut away, when it would also fall into the trash-box.

The complete operation of my device can now be given; but as the function of each part has heretofore been fully stated it is thought that a brief résumé will suffice. The nickel or a counterfeit thereof is inserted in the slot (not shown) and slides down the track 1 and is brought to a stop by the arm 37^a. The depositor, in obedience to instructions posted on the cabinet of the machine, will then turn the crank 6. The turning of the crank will bring down the hammer 18 on top of the nickel and actuate the magnet. The spring 21 having been previously adjusted by the nut 22 to a tension a little less than the breaking strain of a good nickel, the crank 6 may be revolved clear around if the coin is good without injuring it, but if bad it will be broken or bent and fall through, unless of steel or iron, in which

case it will be caught by the magnet. The magnet on moving forward will ride over the head 45 of the trigger-lever 42, but on being drawn back will snap up the lever, actuate the U 36, and send the coin along, if still there. The coin will continue down, spring the machine, when all will be ready for the next.

It will be evident from the foregoing that my device provides for a large number of contingencies and affords complete protection to the machine against all forms of counterfeit coin. I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. In a coin-controlled apparatus, the combination substantially as described, of a track or chute for a coin, a U-shaped member pivotally mounted and located with one arm extending into the track of the coin to stop it, means for tilting said U to bring the other arm thereof in forcible contact with said coin and start it on its journey.

2. In a coin-controlled apparatus, the combination, substantially as described, of a shaft bearing eccentrics, a cross-head, means for connecting said cross-head to said eccentrics, a rod having a hammer at one end, which rod is slidably mounted in said cross-head, a second cross-head rigidly mounted on said rod, a stop-nut fitted on said rod to limit the movement of said first-mentioned cross-head in one direction, and a spiral spring surrounding said rod and held between said cross-heads.

3. In a coin-controlled apparatus, the combination of a shaft bearing a cam having a V-shaped notch therein, a lever pivoted intermediate its ends and bearing a bill on one arm located to be engaged by said cam, a slidingly-mounted magnet connected to the other arm of said lever, a U-shaped kicker pivotally mounted to engage and stop the coin, and to be operated by said magnet to start the coin again on its journey, and means for operating said shaft to operate said cam, substantially as described.

4. In a coin-controlled apparatus, the combination of a chute for receiving the deposited coin, a U-shaped kicker pivoted intermediate its arms and located with one of its arms extending upwardly into the path of the coin to bring it to a stop, a stop located to limit the movement of said kicker, and means for operating said kicker to bring the other arm thereof in forcible contact with said coin and start it along, substantially as described.

5. In a coin-controlled apparatus, the combination of a guideway for receiving a deposited coin, a U-shaped kicker pivotally mounted and located with its arms in position to be brought into the path of the coin to bring it to a stop or to start it along its journey, a slidingly-mounted magnet, a lever mounted

to engage said kicker, and to be engaged and operated by said magnet, and means for operating said magnet, substantially as described.

6. In a coin-controlled apparatus, a guide-way or chute for receiving the coin, a U-shaped pivoted kicker mounted with its arms in position to extend into the path of the coin to bring it to a stop or start it along, a trigger-lever engaging said kicker, a stop to limit the movement of said lever, and means for engaging said lever to operate said kicker, substantially as described.

7. In a counterfeit-excluder for a coin-controlled apparatus, the combination of guides engaging the edges of a coin, a plunger provided with a head to serve as a hammer, a spiral spring surrounding said plunger, and bearing at its lower end on said head, a cross-head slidably mounted on said plunger and bearing on the upper end of said spring, a stop-nut mounted on said plunger and located to limit the upward movement of said cross-head, and means for actuating said cross-head, substantially as described.

8. In a coin-tester for a coin-controlled apparatus, the combination of a guide engaging the edges of a coin, a plunger provided with an enlarged head to serve as a hammer, a spiral spring surrounding said plunger and bearing on said head, a cross-head engaging said spring, a nut fitted on said plunger and bearing on said cross-head to limit its movement, a shaft bearing concentrics bearing on said cross-head, substantially as described.

9. In a coin-tester for a coin-controlled ap-

paratus, the combination of a guide for a coin, a plunger mounted to engage a coin resting in said guide, a cross-head secured to said plunger, guide-rods rigidly mounted in said cross-head, arms having guide-apertures therein through which said guide-rods pass, a spiral spring surrounding said plunger, spiral springs surrounding said guide-rods and bearing on said arms, a cross-head slidably mounted on said guide-rods and said plunger and bearing on all of said spiral springs, a nut fitted on said plunger to limit the movement of said last-mentioned cross-head, and means for actuating said cross-head, substantially as described.

10. In a counterfeit-excluder for a coin-controlled apparatus, the combination of guides for a coin, a U-shaped member pivotally mounted with one arm extending up into the path of the coin to bring it to a stop, a pivoted trigger-lever engaging said U, a slidingly-mounted bar-magnet carrying means for engaging said trigger to actuate said U to start the coin, a lever connected by a link to said magnet and means for actuating said last-mentioned lever to reciprocate said magnet and bring it in contact with the coin to test its magnetic properties, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BENJAMIN F. D. MILLER.

Witnesses:

E. W. NEWKIRK,
W. C. YOST.