

No. 739,979.

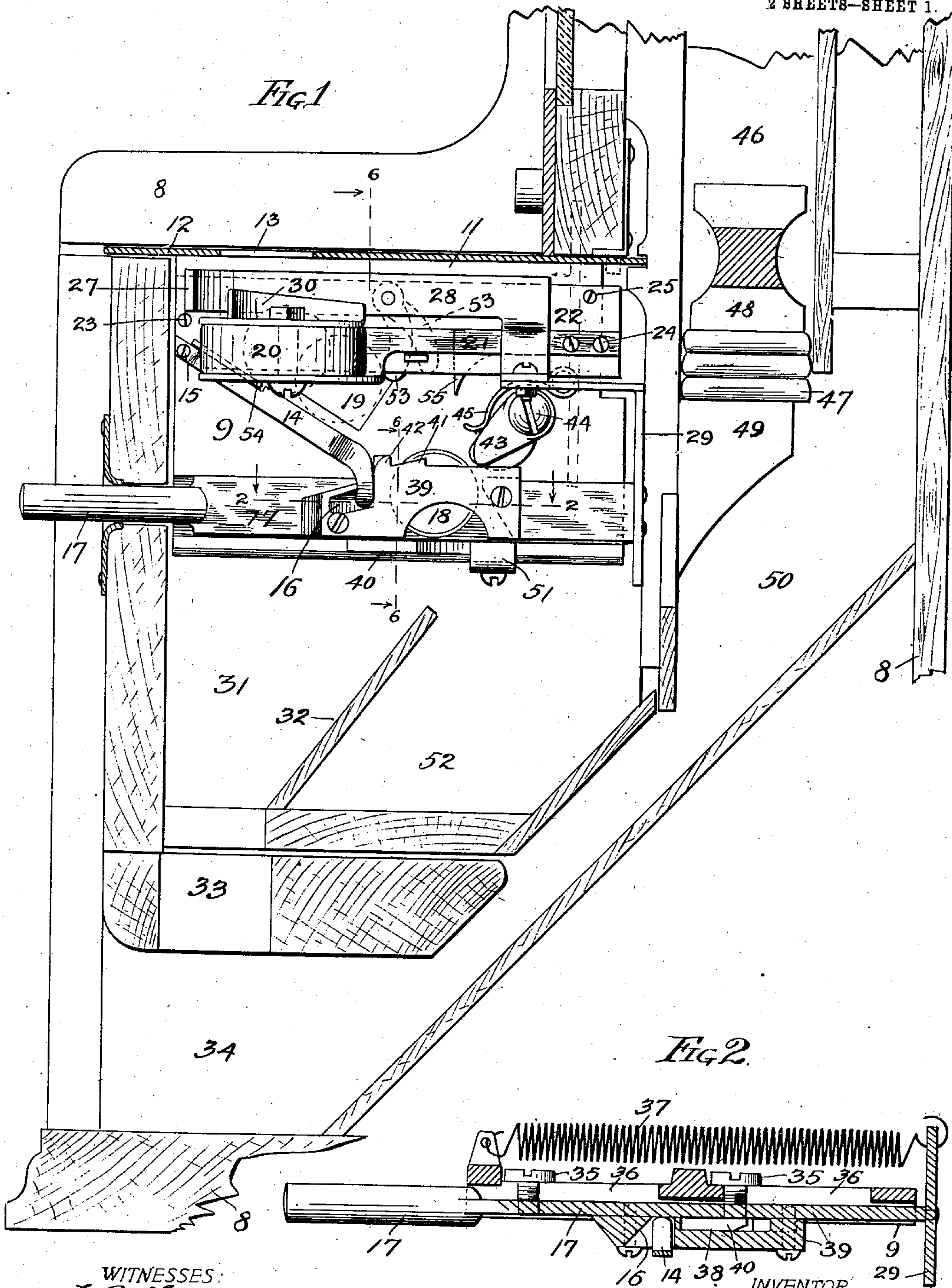
PATENTED SEPT. 29, 1903.

C. A. BREWER.  
VENDING MACHINE.

APPLICATION FILED DEC. 23, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:  
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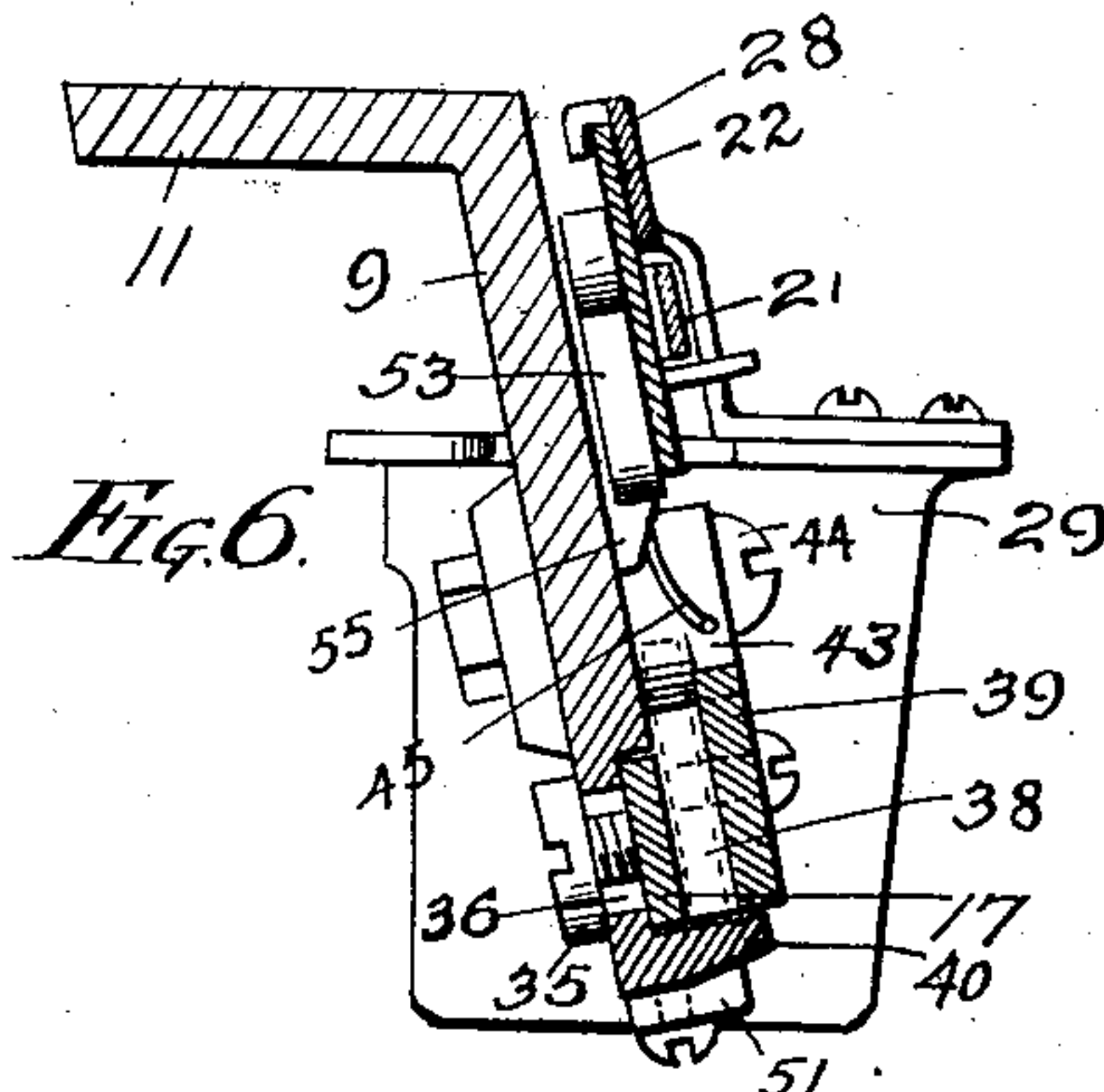
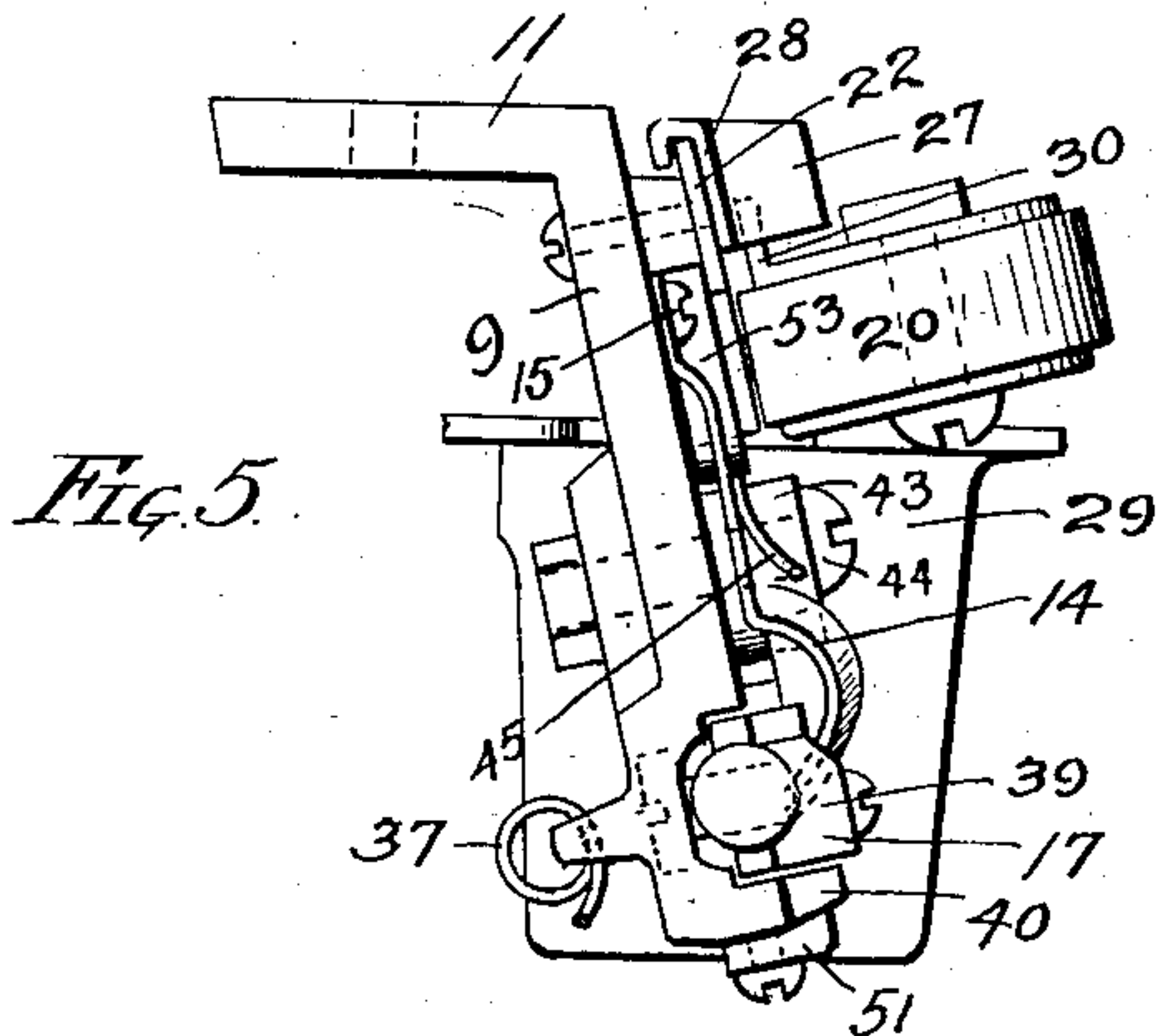
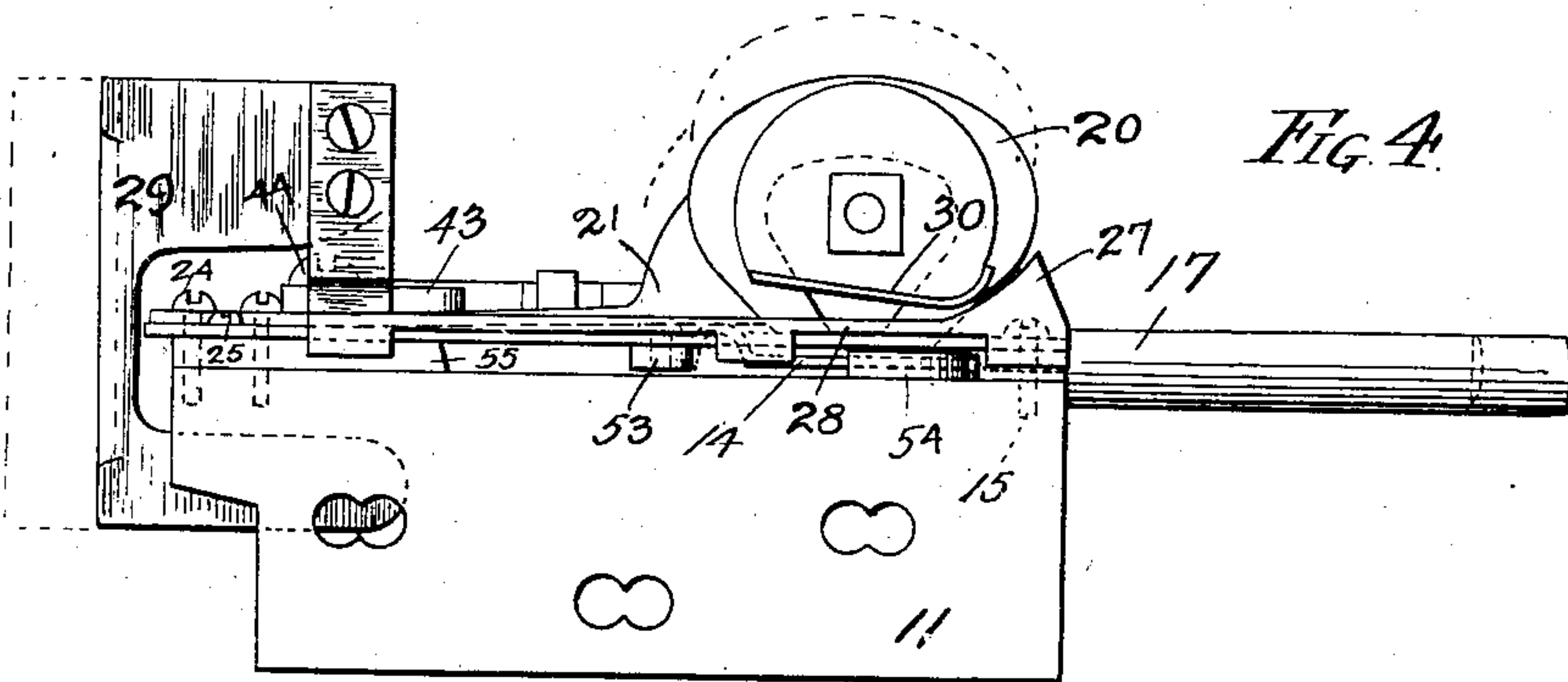
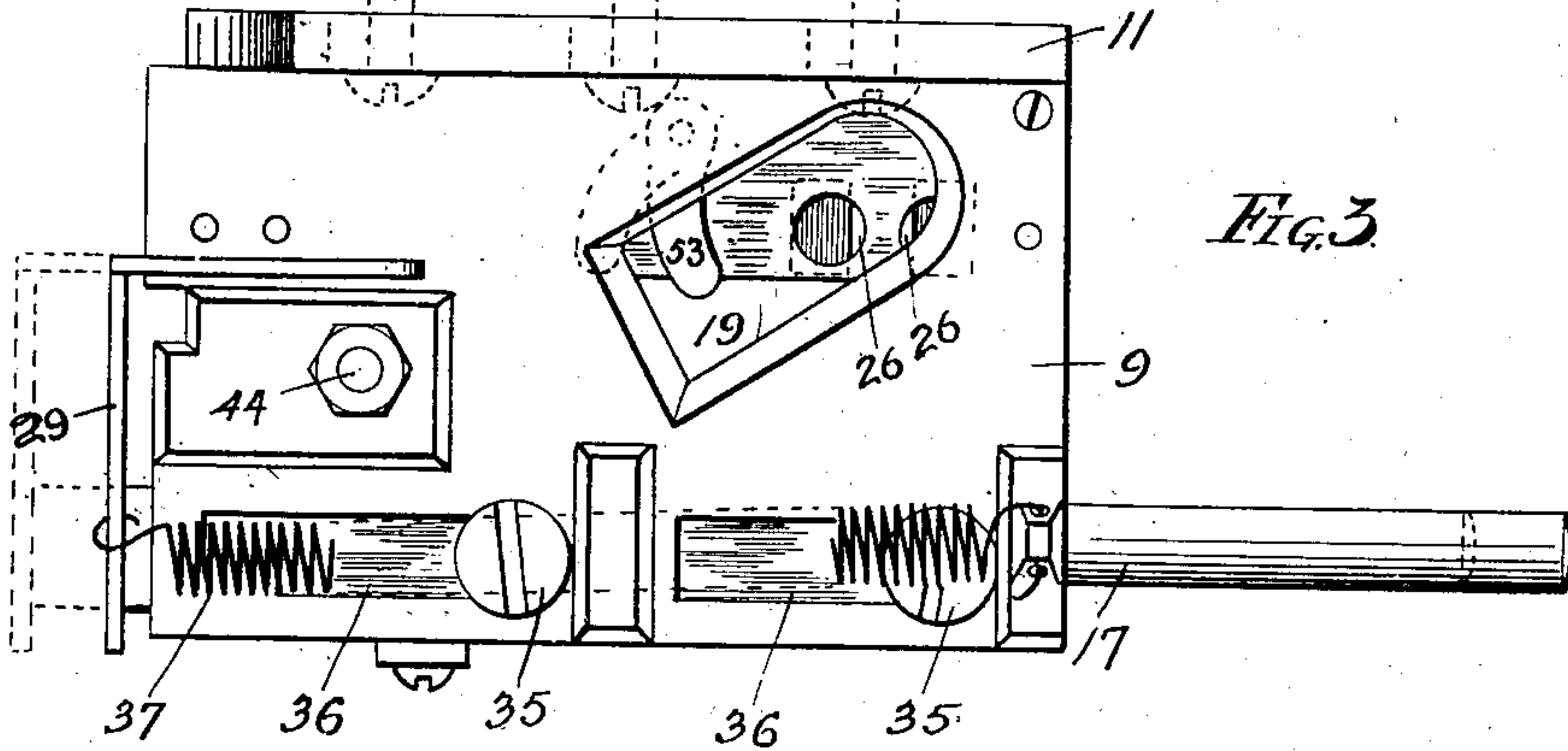
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# UNITED STATES PATENT OFFICE.

CHARLES A. BREWER, OF CHICAGO, ILLINOIS.

## VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 739,979, dated September 29, 1903.

Application filed December 23, 1901. Serial No. 86,959. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. BREWER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Vending-Machines, of which the following is a specification.

This invention relates to the coin-controlled mechanism of vending-machines, and is a modification of and in some respects an improvement upon the construction shown in my Patent No. 629,334, of July 25, 1899.

One of the main objects of the invention has been to devise a coin mechanism which, while it is efficient in detecting spurious and imitation coins, at least as much so as the ordinary coin-controlled machine, will also prevent any clogging or choking of the coin-passage by improper coin.

The nature of the present invention is fully set forth below and is also illustrated in the accompanying drawings, in which latter—

Figure 1 is a partial vertical section of a vending-machine having my present improvements embodied in it. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is an elevation of the coin mechanism, showing the reverse of the side given in Fig. 1. Fig. 4 is a plan of said mechanism. Fig. 5 is a front view. Fig. 6 is a section on the line 6 6 of Fig. 1.

In said drawings, 8 8 represent portions of the casing of the vending-machine, and 9 is an inclined metal plate forming the frame of the coin mechanism and supported in an inclined position by a top horizontal flange 11, adapted to be secured to the top or plate 12, in which is formed the slot or mouth 13 of the coin-chute.

The coin entering at 13 falls onto the inclined spring-rail 14, arranged edge uppermost along the bottom of the chute, which is formed between plate 9 and plate 22. This rail is fast at its upper end to the frame-plate, as at 15, and its lower end is forced and bent down and inward, so that its point will ride upward on the incline 16, formed on the plunger 17 and so that when the plunger is pushed in to release the merchandise sold the incline will force the lower end of the rail laterally, and thus allow any coin which may have been too thin and may have entered the narrow opening between the rail and the frame-plate

or which may then be resting on the rail to drop out instead of continuing along the rail until it falls into its operative position. (Shown at 18 in Fig. 1). The plunger is permitted both partial and full strokes, as will be understood later on, and the rail is thus opened at the partial as well as the full strokes of the plunger.

The plate-frame is cut out, as shown at 19, back of the rail 14, so that coins which are too small in diameter may drop out of the chute through the opening before it reaches the operative point. The inclination of the plate predisposes the coin to take this course, and if it is so small that its top does not engage the top of the opening, it is sure to be disposed of in this way.

If the coin is made of spurious metal, but of the proper size, it is attracted by the magnet 20, attached to the free end of a flat spring 21, attached to a plate 22, secured to the plate-frame by screws 23, 24, and 25, the latter also securing spring 21. The plate-frame at the points where the screws are located is provided with bosses adapted to form an open space between the frame and the plate 22 sufficient for the passage of the coin between them. The plate 22 forms a side wall to the chute for a portion of the latter's length and with the frame on the other side keeps the coin upright on the rail 14. The magnet does not come in contact with the coin, but acts thereon through the plate 22, which is non-magnetic, and is cut out, as at 26, opposite the magnet, the opening being smaller than the coin. While the magnet is thus enabled to attract the coin, it is compelled at each actuation of the plunger to move laterally of the chute and away from the plate 22 by a projection 27 on an arm 28, carried by the merchandise-releasing device 29, secured to the inner end of the plunger, said projection 27 encountering an incline 30 on the magnet. This movement of the magnet is sufficient to cause the release of the coin by it, and the coin then falls from the chute instead of continuing on its course to the position 18, the rail being deflected so that it will not support the coin at the time the magnet is thus moved from its operative position. All the coins thus prevented from reaching their operative position, including those intercepted by the rail, by the side open-



ing in the chute and by the magnet fall into the open space 31, having an inclined side 32 and connecting by the passage 33 with the front opening 34, where all the merchandise packages are delivered and rendered accessible to the purchasers. In this manner any would-be patron of the machine is enabled to recover any coin inserted by him which may be defective in any way, and the coin is returned to him at the same opening through which he expects to receive the merchandise and which he is almost sure to inspect, and he is thus prevented from overlooking the returned coin. This may be a matter of small moment with people who try to defraud the machine by inserting spurious coins and imitations of coins; but it frequently happens that coins having real value are inserted through carelessness or ignorance, and this feature of the machine makes it reasonably certain that the person depositing any such coin will receive it back.

The plunger works in a slot in the plate-frame and is confined therein by the flat-headed screws 35, secured to the plunger and extending through slots 36 in the frame. A spring 37 retracts the plunger after each operation. A vertical opening or recess 38 is formed in the plunger between its body and the supplemental piece 39, which is attached to it and in which the incline 16 is formed, and this recess receives any coin from the rail 14 which may succeed in passing the detecting devices. A floor for the recess is shown at 40 and may be integral with the plate-frame, and a coin 18 is shown in the recess at Fig. 1.

The plunger on its upper surface is provided with two shoulders 41 and 42, adapted to be engaged by the dog or stop 43, stationarily pivoted at 44 and retained in acting position by a spring 45. When the plunger is forced inward in the absence of any coin in the recess, it can only make a partial stroke, being arrested when the stop encounters the first shoulder 41, and this partial stroke is not sufficient to secure the release of any merchandise. It is sufficient, however, to open the rail 14 and to swing the magnet so that any coin caught by either will be released and allowed to fall into the delivery-opening 34. If a proper coin is in the recess at the time of pushing the plunger, as in Fig. 1, the stop will be lifted by the coin sufficiently to clear both shoulders 41 and 42 and allow the plunger to be moved its full stroke. On the return of the plunger the stop, being no longer held up by the coin, will ride on the shoulders in readiness to engage them in case of attempt to defraud the machine by permitting the plunger to return a part of the way only after a full stroke. The second shoulder 42 is employed merely for the purpose of preventing this kind of robbery, and it is preferably somewhat higher than shoulder 41. The portion of the stop which rides on the coin is rounded off more than the part

which engages the shoulders and also extends more downward.

In order that the coin may raise the stop easily and without unnecessary friction and without catching or indenting itself in the coin, also in order that any coin, spurious or genuine, which reaches the acting position in the machine and which is less in diameter than the proper coin may nevertheless lift the stop sufficiently to clear the shoulders 41 and 42, and thus prevent the clogging which would otherwise occur, because any coin in that position which does not operate the stop cannot be dislodged, will prevent the entrance of subsequently-deposited coins. The part of the stop here referred to is best shown at Figs. 1 and 6.

The merchandise magazine or receptacle is shown at 46, and in it are shown several packages 47 and a weight 48 for feeding them down onto the supports 49, of which only one is shown, at the bottom of the magazine. The lowest package, it will be noticed, is positioned below the plane of the back wall of the magazine, also below the top of the merchandise-releasing device 29, so that when the plunger is given a full stroke the bottom package will be pushed out of the magazine and into the inclined passage or chute 50, which conducts it to the delivery-opening 34, already mentioned.

The coins which unlock the machine are carried by the plunger beyond a clip 51, adjustably secured to the bottom of the frame, and are free to drop into the money-receptacle 52 as soon as they have passed said clip. The clip forms a continuation of the floor 40 and enables me to regulate the time of the release of the coin. By moving it toward the front of the machine it allows the coin to escape earlier; and by moving it back it delays the coin's escape. This adjustability is important, as it enables me to gage the escape of the coin by the release of the merchandise, so that one may not take place too far in advance of the other.

As a further safeguard against fraud, I employ a coin-latch 53. It is a swinging loosely-pivoted device hanging down in the coin-chute, where it will be encountered by all the coin. Its primary object is to break up the momentum acquired by the coin in dropping from the mouth 13, so that if the coin is amenable to any of the detecting devices employed in the machine it will not be able to move past those devices so quickly as to escape their action. The latch is light, so that it yields to and allows coins of the proper weight to pass on to the plunger and then quickly gravitates back to its normal position; but it may arrest some of the coins, and if it does any such will be discharged into opening 34 by the movement imparted to rail 14 when the intending purchaser gives the partial stroke to the plunger.

It is not desirable that any coin or imita-



tion should enter the slot in the bottom of the chute so near the fastening-screw 15 as to render doubtful the release of any such coin when the rail is sprung laterally, and to avoid this I close the upper part of the slot by a narrow strip 54 of metal.

55 is a device placed in the upper part of the chute and in the rear of the retarder and acts to stop the inward movement of the coin and deflect it downward into the plunger.

It will be noticed that my machine is not likely to be clogged by improper coins or imitations. This has been one of the main objects had in view in devising it, because if the chute becomes clogged it is apt to prove a more serious matter than the robbing of the machine by the use of improper coins.

I claim—

1. The combination in a coin-controlled machine, of a coin-chute having a bottom formed by a spring-rail adapted to be bent laterally, a magnet normally positioned against the stationary side wall of the chute and opposite an opening smaller than the coin, and located near the receiving end of the chute, and means for moving the magnet back from the opening and opening the bottom of the chute, substantially as specified.

2. The combination in a coin-controlled machine, of a coin-chute having an opening smaller than the coin in its stationary side wall, a magnet normally positioned at said opening, a spring carrying said magnet and yielding in a horizontal direction, and a merchandise-delivery device having an incline acting to deflect said spring, substantially as specified.

3. The combination in a coin-controlled machine, of a coin-chute having an opening smaller than the coin in its stationary side wall at its receiving end through which the magnet acts, and also having a movable bottom adapted to open and discharge any coin arrested at said side opening, a magnet normally located opposite said opening, a spring supporting the magnet against the opening,

and a merchandise-delivering device connected to and also moving the magnet, and also causing the opening of the bottom of the chute, substantially as specified.

4. The coin-controlled machine wherein are combined a laterally-inclined coin-chute, having an opening smaller than the coin in its upper and stationary side through which a magnet may arrest spurious coins, and also having a discharge-opening in its under side through which small coins may tip out, a magnet at said upper opening, a longitudinal spring-rail in the bottom of the chute, and a delivery-slide having an incline acting both to deflect said rail and to move said magnet away from the chute, substantially as specified.

5. The coin-controlled machine wherein are combined a coin-chute having an opening smaller than the coin in its side wall near the receiving end, a magnet normally stationed at said opening but not entering the same, a spring-blade support for the magnet, and means for moving the magnet laterally of the chute and thus destroying its hold on any arrested coin, substantially as specified.

6. The combination with the coin-chute and the coin-detecting devices thereof, of a latch in the top of the chute acting to break the momentum of the coin and to arrest it if light in weight, a laterally-movable spring-rail in the bottom of the chute below the latch and means other than the coin for moving the rail to release any coin arrested by the latch, substantially as specified.

7. The combination in a coin-chute of a gravitating latch 53 freely hung in the top of the chute and acting to arrest light-weight coins, a movable bottom for the chute below the latch, and means other than the coin for opening said bottom to allow the arrested coin to drop out, substantially as specified.

CHARLES A. BREWER.

Witnesses:

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H. M. MUNDAY.