

No. 625,812.

Patented May 30, 1899.

A. D. SMITH.

COIN CONTROLLED VENDING APPARATUS.

(Application filed Feb. 27, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

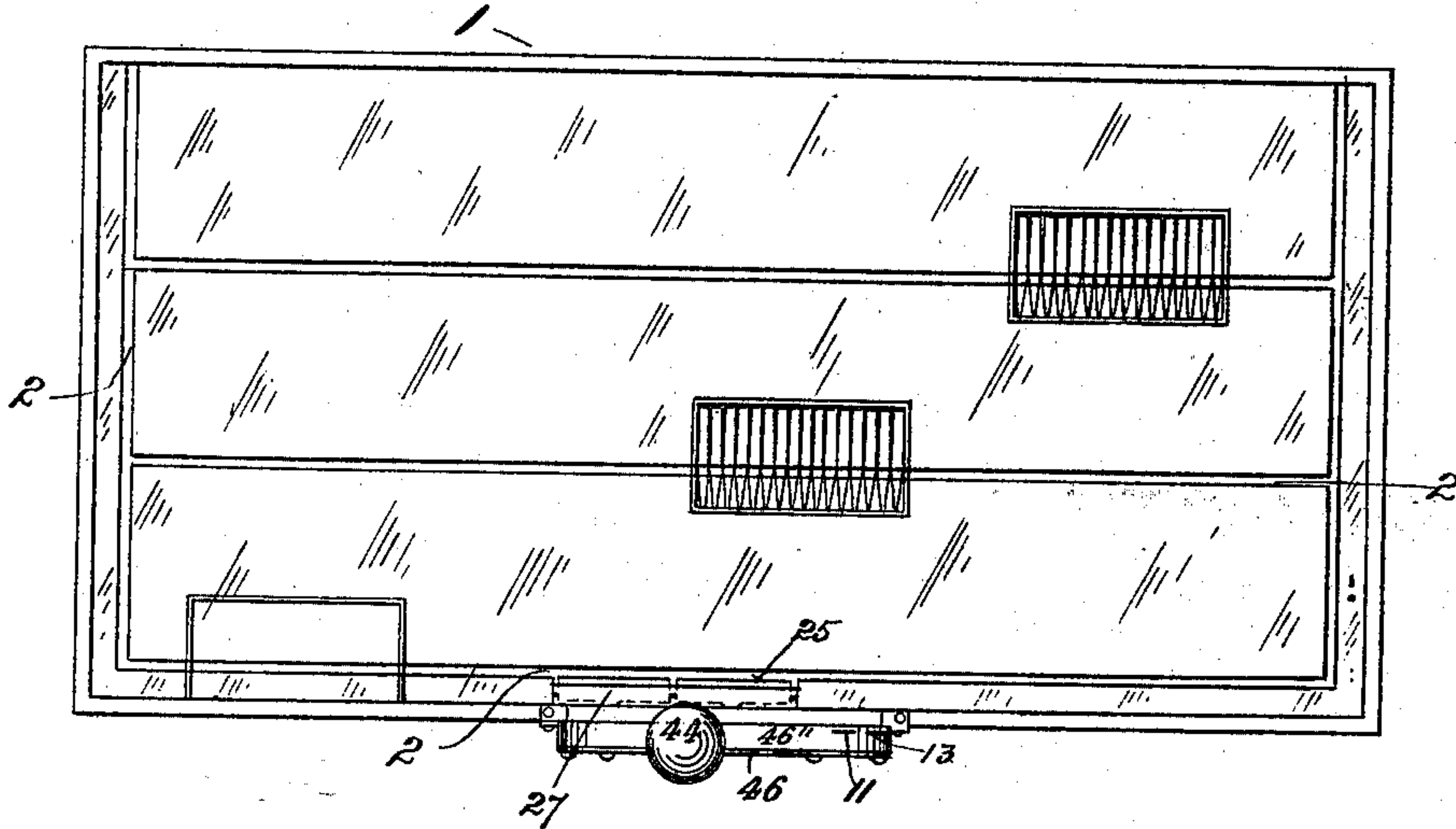


Fig. 2.

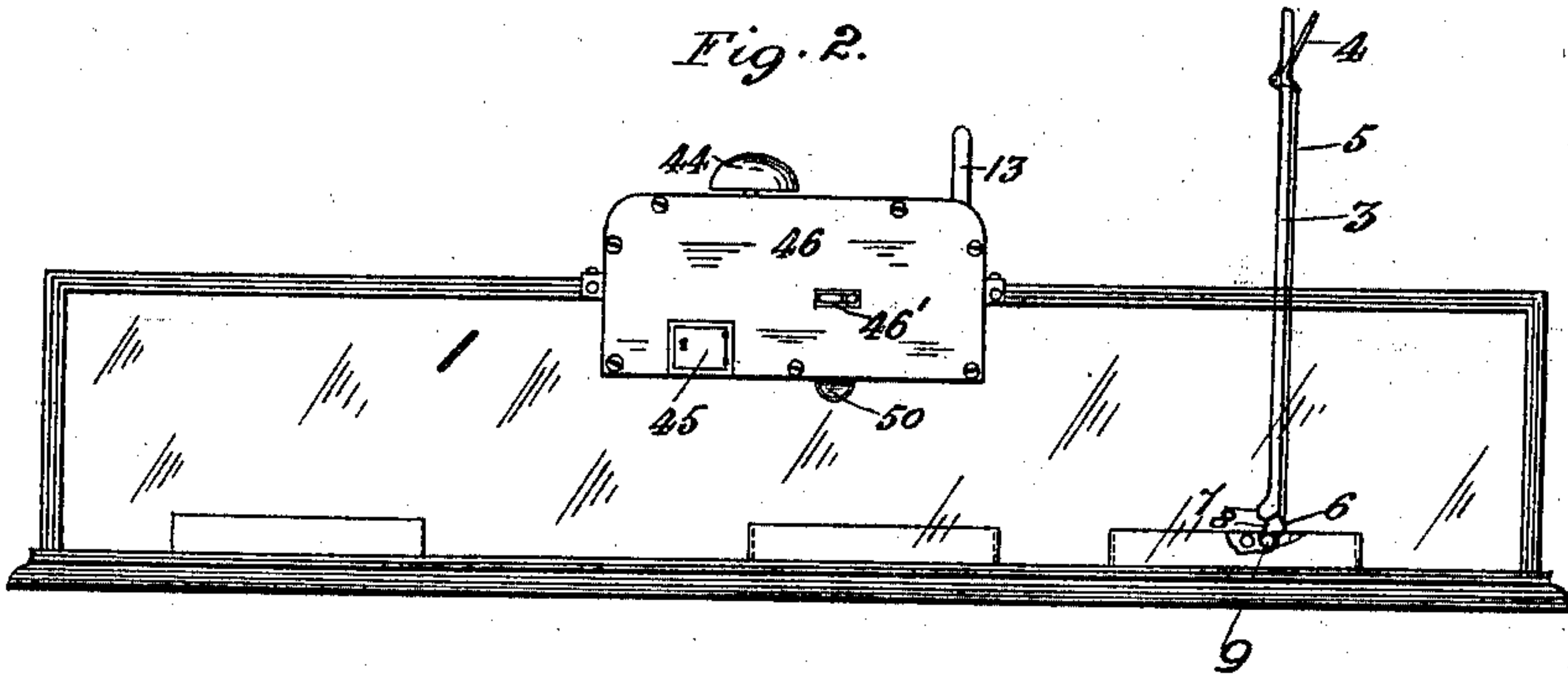


Fig. 3.

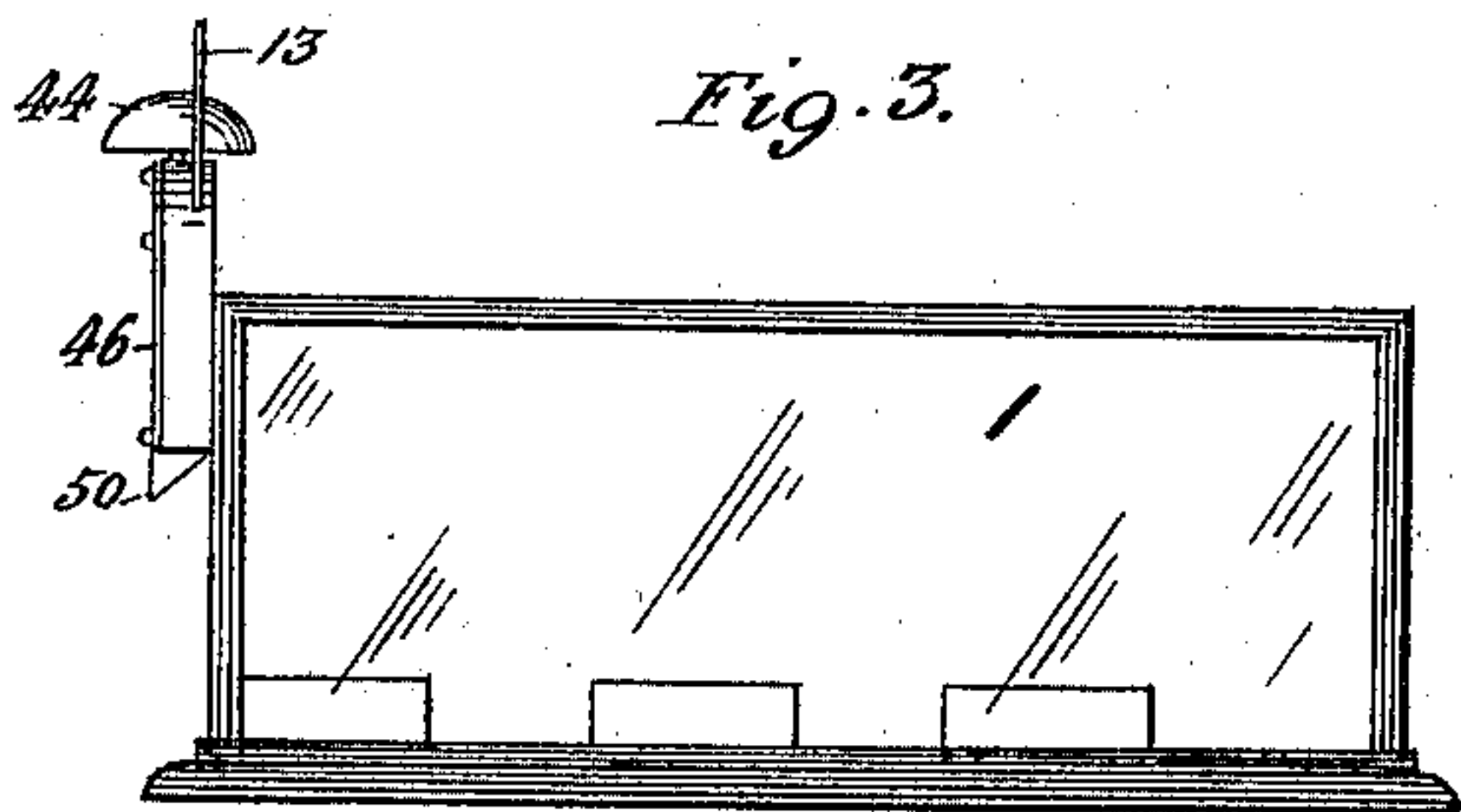
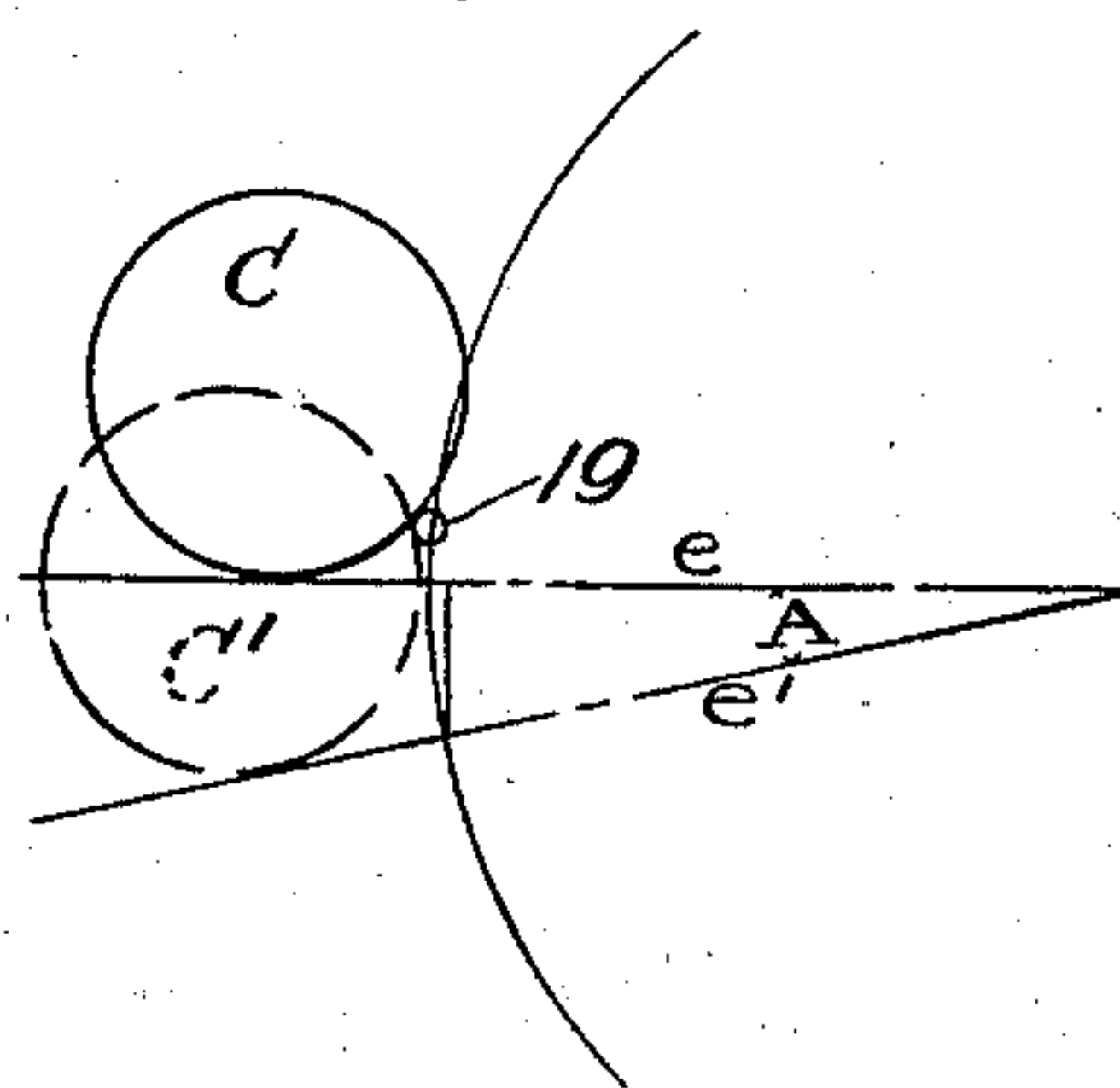


Fig. 4.



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Fig. 5.

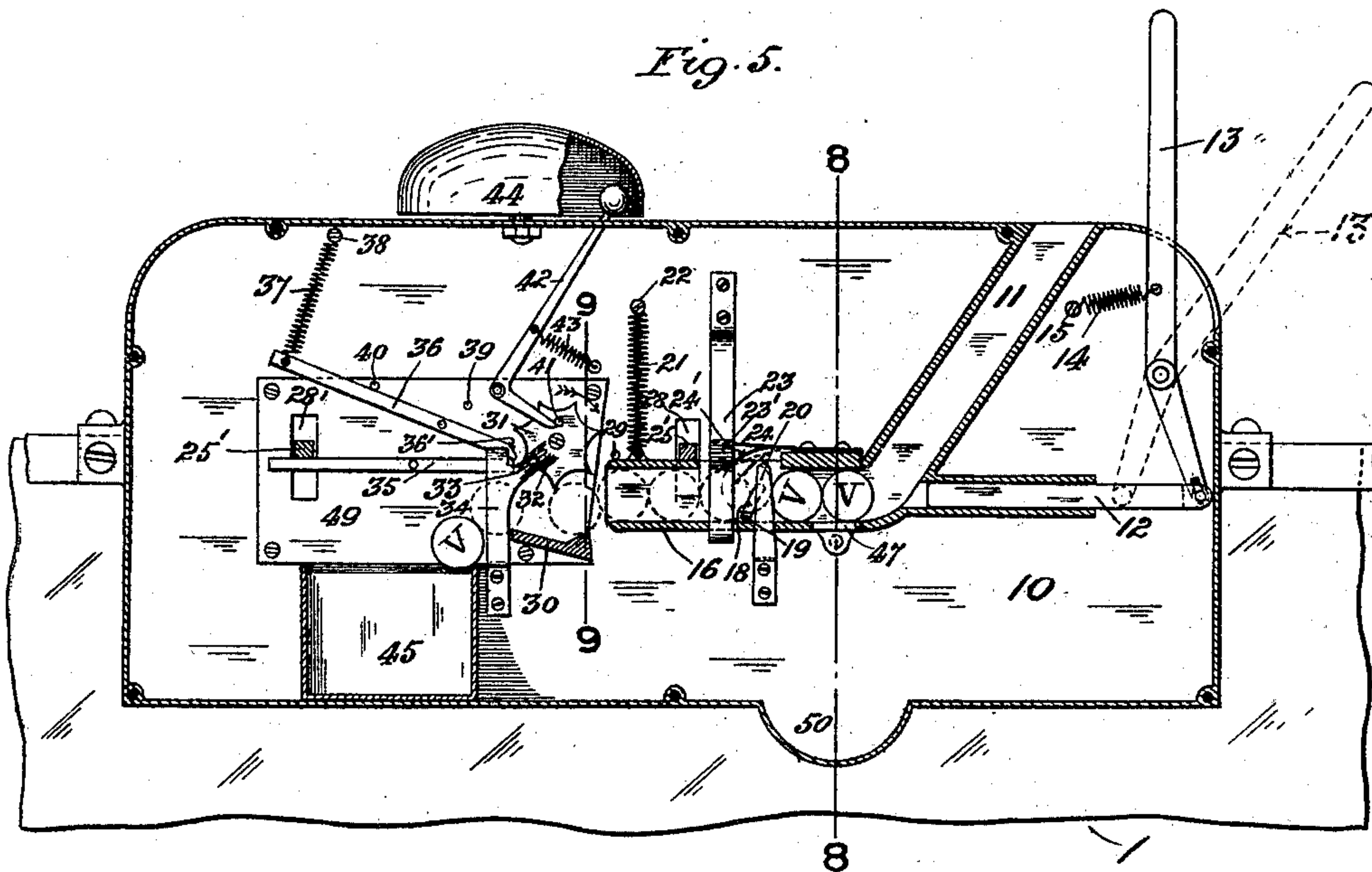
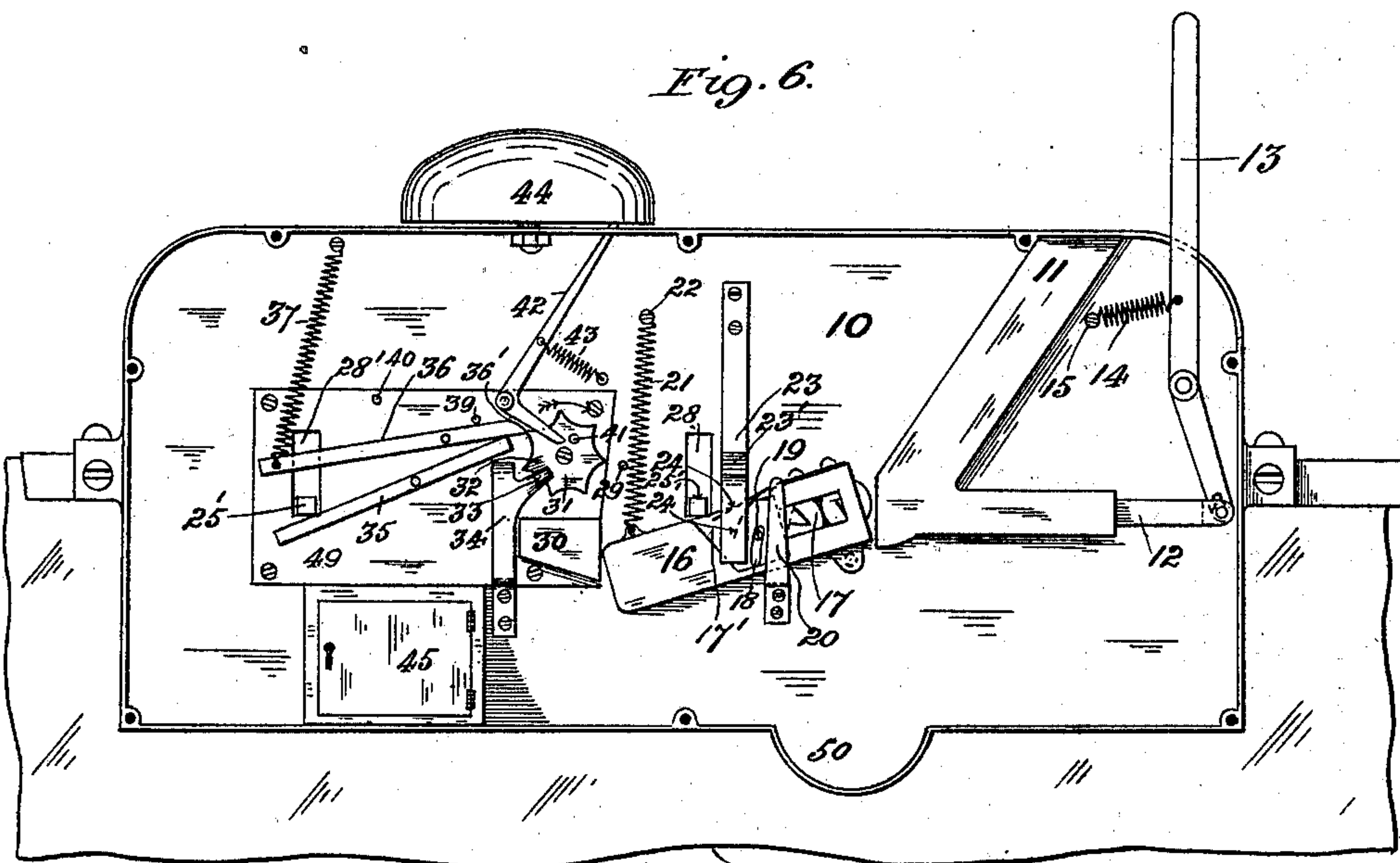


Fig. 6.



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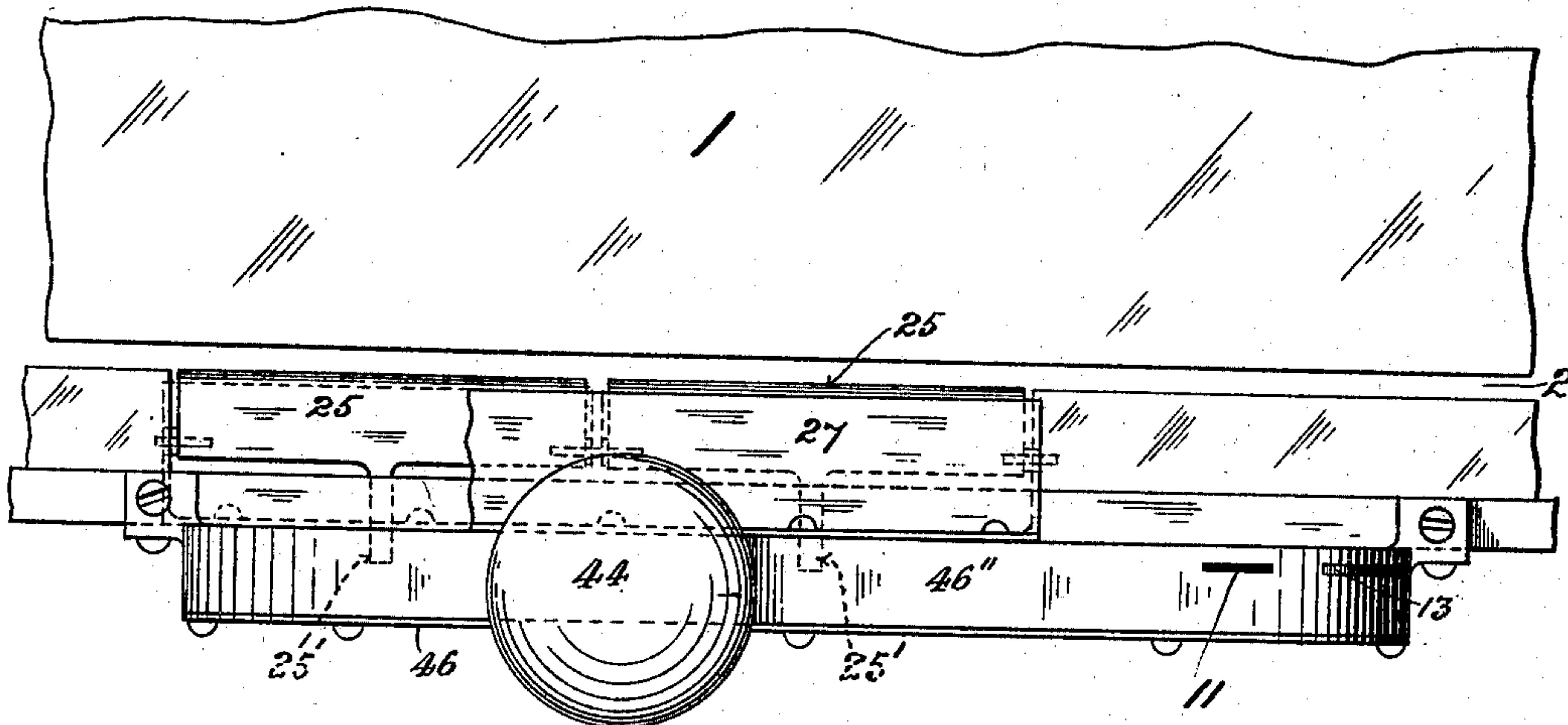
**COIN CONTROLLED VENDING APPARATUS.**

(Application filed Feb. 27, 1899.)

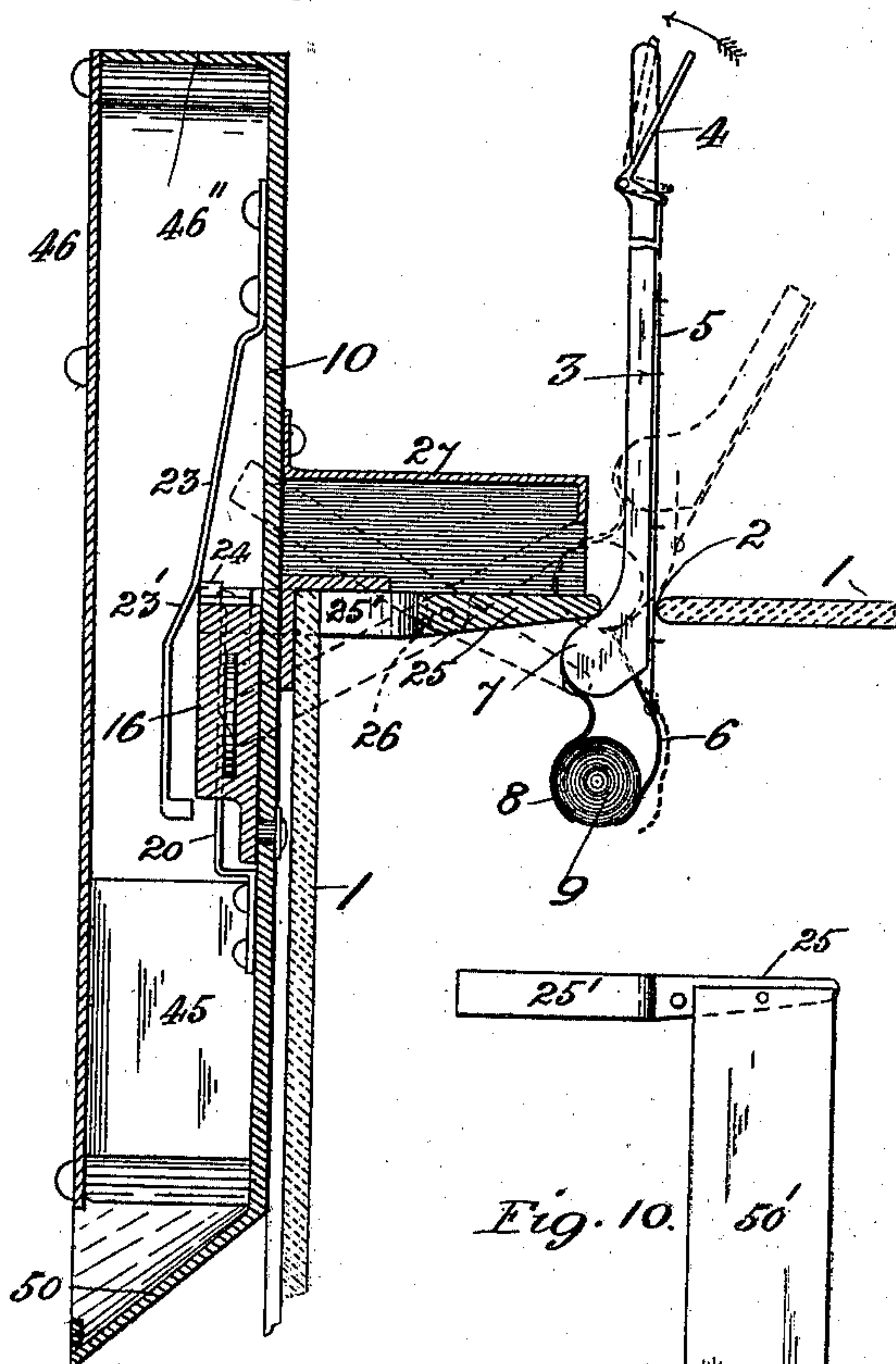
(No Model.)

**3 Sheets—Sheet 3.**

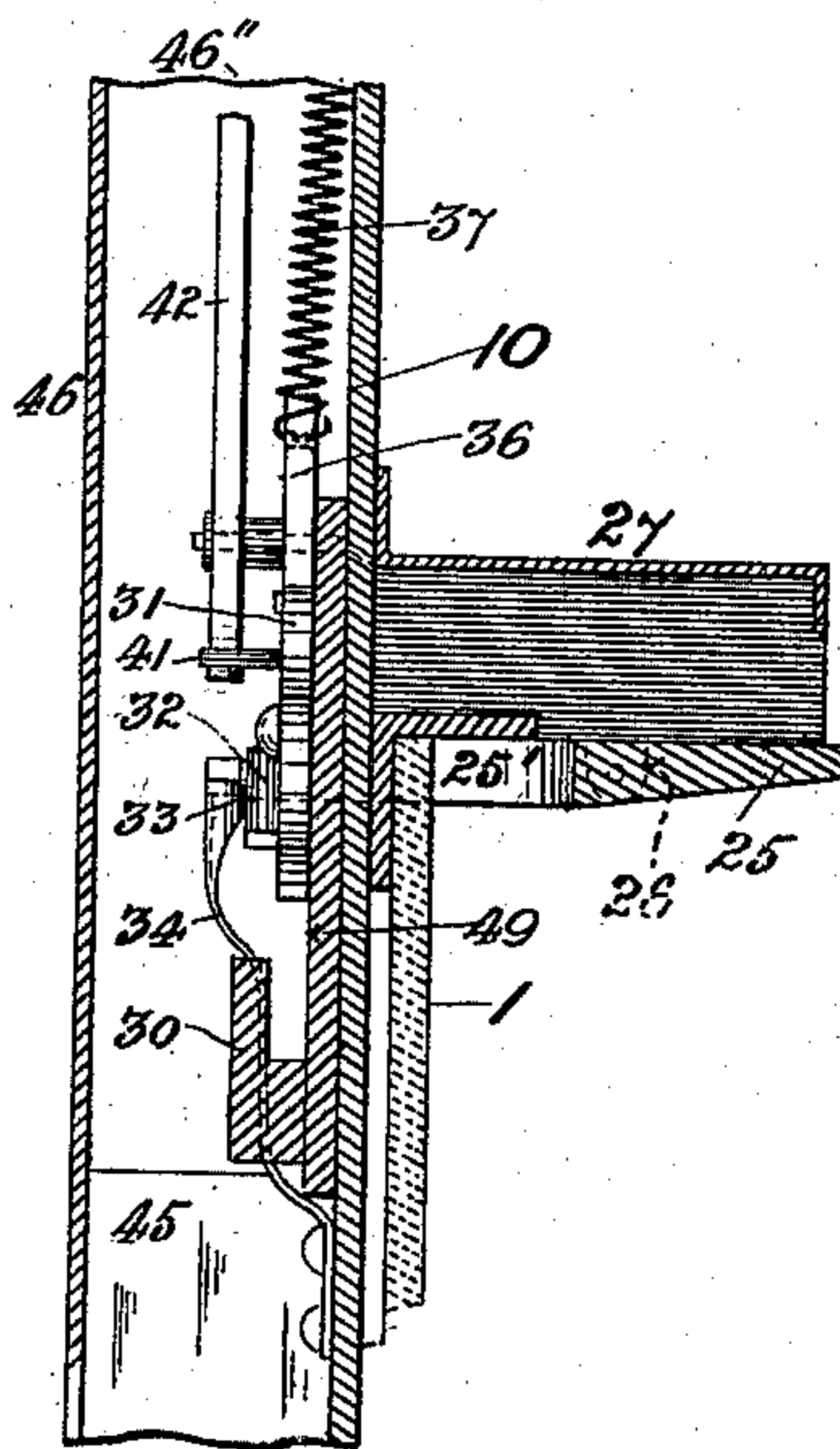
*Fig. 7.*



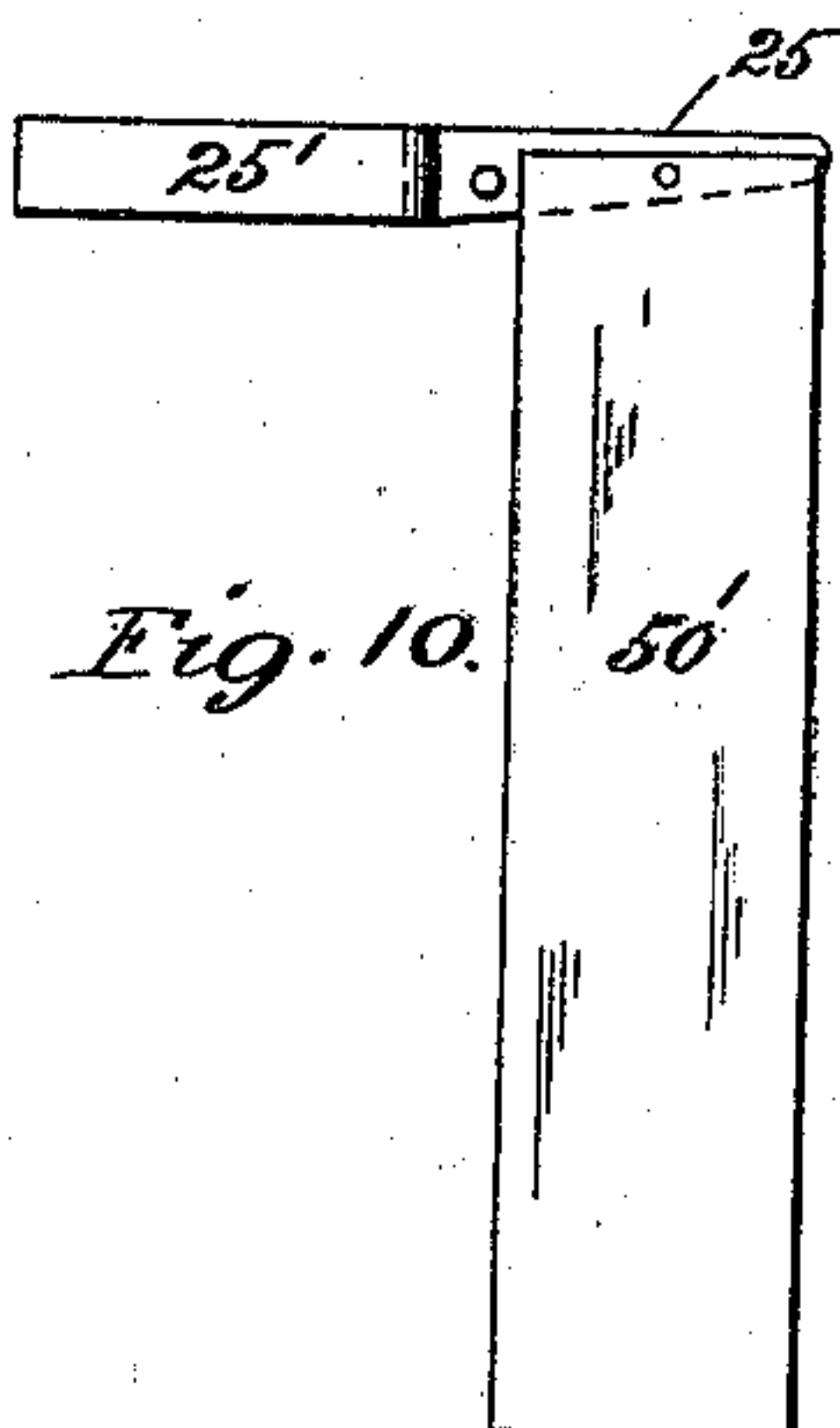
*Fig. 8.*



*Fig. 9.*



*Fig. 10.*



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# UNITED STATES PATENT OFFICE.

ALBERT D. SMITH, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO  
LOUIS SCHAFER, OF SAME PLACE.

## COIN-CONTROLLED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 625,812, dated May 30, 1899.

Application filed February 27, 1899. Serial No. 707,035. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT D. SMITH, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Coin-Controlled Vending Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in coin-controlled vending apparatus; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a show-case having my improvement attached. Fig. 2 is a rear elevation of the show-case, but the front elevation of my device. Fig. 3 is an end view of show-case and my device attached. Fig. 4 is a diagrammatic view showing the amount of advance of the coin as the result of the depression of the coin-chute through which the coin travels. Fig. 5 is a face view of the mounting-plate, (the cover-plate removed,) showing the coin-chute and its pivoted extension in longitudinal section, the parts being in their normal position. Fig. 6 is a similar view, but showing all the parts in elevation and showing the coin-chute extension in its depressed position. Fig. 7 is an enlarged top plan view of my device and portion of the show-case. Fig. 8 is a sectional enlarged detail, the section being taken in line 8 8 of Fig. 5. Fig. 9 is a sectional detail enlarged, the section-line being taken on line 9 9 of Fig. 5; and Fig. 10 is a side elevation of a modified (and preferred) form of gate.

The object of my present invention is to construct a coin-controlled apparatus capable of being attached to any show-case in which the goods to be sold are generally displayed, the apparatus permitting access to the contents of said show-case through a gate leading thereto upon the introduction of a coin of proper denomination into the machine.

I have shown the present invention as specially applicable in the sale of cigars; but it is to be understood that I do not limit the use thereof to this particular commodity, for by

a slight reconstruction of the gate the device may be used in connection with any commodity selling at a uniform price—such as newspapers, soaps, chewing-gum, colognes, and the like.

In detail the invention may be described as follows:

Before attempting the description of the coin-controlled mechanism I shall first describe the show-case and pick-up device or picker used in connection therewith for extracting the cigars within the case. The case 1 may be of any prevailing form, with the usual glass walls, the upper wall in the present case being provided with narrow slots 2 of a width insufficient to permit the extraction therethrough of any cigar within the case. Adapted to travel within the slots or ways 2 is a picker which may be of any approved construction and of sufficient length to reach to the bottom of the boxes in which the cigars are originally packed. The picker comprises a shank 3, adapted to travel along the slots 2, the upper end of the shank having a pivoted bell-crank lever 4, from the free end of whose short arm depends a wire 5, connecting to a resilient spring gripping-arm 6, secured at the lower expanded end or knob 7 of the shank, the knob 7 being further provided with a second rigid arm 8, between which and the free end of the arm 6 the cigar 9 may be seized. By tripping the long arm of the bell-crank, as shown by the arrow in Fig. 8, the cigar is released. To grip the latter and pick the same out of the box, the operator opens out the arms 6 8 by tilting the bell-crank in the direction indicated and then carefully embracing the tapering end of the cigar with the arm thus separated, (see dotted position of parts in Fig. 8,) when upon the release of the bell-crank the spring-arm 6 will firmly grip the cigar. When the cigar has once been picked out of the box, the picker is moved along the slots 2 until the same comes opposite the pivoted gate forming an element of the coin-controlled mechanism to be presently described, it being understood that the free edge of the gate when closed forms a continuation of the wall of the slot along which such gate is disposed.

Having followed the picker as far as the



gate of the coin-controlled mechanism, I shall now proceed to describe the latter in detail.

Referring again to the drawings, 10 represents the mounting-plate, along which the several operating parts are carried, said plate being secured above the slotted top of the show-case and along the rear vertical wall of the show-case—that is to say, the wall farthest away from the customer and nearest the vender or proprietor. Disposed along the front face of the plate 10 is an inclined coin-chute 11, the lower edge wall of which is provided with an opening for the admission of the free end of a plunger 12, whose opposite end is pivotally connected to the lower arm of an operating-lever 13, also pivoted along the plate 10, the lever being retracted to its normal position by a spring 14, connected, respectively, to the long arm of the lever and to a pin 15, projecting from the plate 10. Pivoted to the mounting-plate and adapted when in its normal position to form a continuation of the chute 11 is a hollow coin-chute extension 16, designed to receive the coin from the chute, the plunger 12 being adapted upon the tilting of the lever 13 to force the coin through the said extension, as will presently appear. The front wall of the extension 16 is cut away in the form of a recess 17 to allow for the inspection of the coin passing through the same, said recess being but an extension of a space 17', formed by cutting away a section of the front and top walls of the extension for a purpose presently apparent. Formed in the rear wall of the extension 16 is a curved slit 18, through which passes a pin 19, projecting from the mounting-plate, said pin serving to advance the coin bearing against it with each depression of the extension 16, as will better presently appear. Secured to the mounting-plate sufficiently below the part 16 to allow the latter the necessary room to swing downwardly when depressed, as presently to be explained, is the lower end of a resilient guide-arm 20, the object of which is to guide the coin as it is passing through the machine, the pin 19, previously referred to, bearing against the base of the slot 18 when the parts are in their normal position, the arm 20 being disposed on that side of the pin which is toward the pivotal point of the extension 16. The latter is held in its normal position by a spring 21, having its opposite ends secured, respectively, to said extension and to a pin 22, carried by the face of the mounting-plate, and is prevented from being depressed against the resiliency of said spring by a spring-arm or trigger 23, having its upper end secured to the mounting-plate and its locking end bearing against the bottom wall of the said extension. The trigger has formed along the length thereof an inclined bearing surface or section 23', along which is free to ride the edge of the free end of a trigger-releasing arm 24, mounted along the upper wall of the extension 16 and having an inwardly-deflected yielding coin-actuated finger 24', in

the path of which the coin is advanced. As the coin is pushed along under the action of the plunger the finger 24' is raised by the coin, thereby raising the arm 24, which thus rides up along the incline 23', tripping the trigger out of engagement with the pivoted extension 16 and permitting the latter to be depressed by the gate 25, through which access is had by way of the slot 2 into the show-case. (See Figs. 5 and 8, showing the trigger in its disengaged position.)

The gate 25 is pivoted at its opposite ends between the lugs or ears 26, depending from one of the terminal and middle division-wall of a hood 27, projecting from the rear of the mounting-plate and protecting the gate from above in such a way as to bring the free swinging edge of said gate in continuation with the adjacent side or wall of the slot 2, the opposite edge of the gate being provided with a (preferably) weighted arm 25', which passes through an elongated slot 28, formed in the mounting-plate, the free end of the arm normally resting against the upper wall of the extension 16. The axis of suspension of the gate is to one side of the center of gravity of the gate and arm combined, being on the side of the arm, whereby the tendency of the latter is to always tilt the gate to a closed position—that is, to cause the arm to rest against the extension 16. Assuming that the coin in the extension 16 has been far enough advanced to raise the arm 24, as already described, and thus release the trigger from its locked position, (see Figs. 5 and 8,) the extension 16 is now free to be depressed by a downward pressure of the arm 25' against the extension 16. (See Fig. 6.) This downward movement or tilting of the arm 25' results from an upward tilting of the free opposite edge of the gate 25. The latter is thus tilted by the knob 7 of the picker as the latter, with its cigar, is being withdrawn from the show-case, the purchaser in so drawing the picker upward being obliged to overcome the tension of the spring 21, by which the extension 16 is held normally closed. By thus opening the gate in the manner indicated the picker and cigar held by it are removed from the case and the cigar extracted. The picker is restored to its position in the slot by passing it through the gate into the case, the gate being free to swing inwardly by reason of the room which the slot 28 affords the arm 25' to swing upwardly. (See Fig. 8.) The advancing coin, which has passed under the finger 24' to raise the arm 24 sufficiently to unlock the trigger, retains the latter in its released position only long enough to enable the purchaser to open the gate once for each coin introduced, the particular coin effecting such release of the trigger resting (from the arrangement of the parts as already described) at the moment of such release with the rear portion of its edge against the coin-advancing pin 19; but as the extension is depressed the pin, which is stationary, forces the coin forward through the



extension during the depression of the latter on account of the circular arc which such extension 16 describes during its travel. This result necessarily follows, for the coin C, being at the time of the trigger's release on the advance side of the pin, cannot retreat, but must be impelled forward by the stationary pin during the rotation of the part 16, the distance the coin is shoved forward being equal approximately to the versed sine of the angle described by the extension 16 in its downward movement. Thus in Fig. 4 let  $ee'$  represent, respectively, the normal and depressed position of the part 16 and A the angle subtended. Let C C' represent the coin in its two positions. The distance the pin 19 has shoved the coin is approximately equal to the distance between the base of the sine of the angle A and the outer end of the radius of the arc described by  $e$  or, what is the same thing, the versed sine of said angle or arc. Thus it follows that a depression of the extension 16 causes the coin to pass beyond the finger 24', and the gate will only open once for each coin, as a release of the trigger from the arm 24 will enable it to reengage the part 16 the moment said part 16 is pulled to its normal position by the spring 21. When a fresh coin is introduced into the chute and the operating-lever operated to push the plunger against such coin, the whole series of coins contained in the extension 16 will be shoved forward and the next succeeding coin will be shoved under the finger 24' and the trigger released, when the previous operation can be repeated.

29 represents a limiting-lug, against which the part 16 impinges when returned to its normal position.

The parts thus far described merely deliver a single cigar for one coin; but the present device is so arranged that at certain intervals the same coin will secure two cigars. This additional mechanism may be described as follows: The coins as they leave the open end of the extension 16 pass through a bracket or housing 30, open on top, above which is pivoted a star-shaped disk 31, between whose arms or teeth are formed concave depressions for the reception of the advancing coins, the latter as they are pushed forward along the inclined bottom of the housing being received by said depressions and impelling or rotating the disk the space of one tooth or arm, as is obvious. The outer surface of the disk 31 has formed thereon a knob or swell 32, which in its rotation passes under the laterally-projecting arm 33 of a second trigger 34, the latter normally locking against the free end of a lever 35, pivoted to the mounting-plate, the opposite end of the lever having normally resting upon it the arm 25' of a second and similar gate 25, also located in the path of the slot 2. When the trigger 34 is released, it is apparent that the second gate can be opened in a manner similar to the first gate and a second cigar extracted from the show-case by

means of the picker, the arm 25' of said second gate being free to operate through a similar elongated slot 28', formed for its reception in the mounting-plate. The lever 35 is restored to its normal position by the inner end of a pivoted arm 36 bearing upon the adjacent end of the lever at a point between the locking trigger and disk 31, the opposite end of the arm being actuated by a spring 37, connected, respectively, thereto and to a pin 38, carried by the mounting-plate. The inner end of the arm 36 is beveled, as at 36', the said beveled end during the opening of the second gate 25 and consequent tilting of the lever 35 striking the tooth of the disk immediately over the knob or swell 32 (which holds the trigger in an unlocked or disengaged position) and advancing the said disk just sufficiently to permit the knob 32 to pass beyond the arm 33 of the trigger, permitting the latter to spring to a position in readiness to engage with the lever 35 the moment the latter is restored to its normal position under the action of the spring 37 after the second cigar has been abstracted, it being understood that the bevel end of the arm 36 is always opposite one of the peripheral concavities of the disk, whereby in rising it will engage the tooth immediately in its path. The inner end of the arm is limited in its upward sweep by a pin 39, and the outer end is similarly limited by a pin 40, the former pin preventing the arm from advancing the disk any more than will be just sufficient to release the knob 32 thereof from the trigger. Were it not for the slight additional advance of the disk by the arm 36 the trigger would remain in a disengaged position indefinitely, and of course any number of cigars could be abstracted by unauthorized persons. The second gate 25, however, becomes locked, as already described, when once the same closes under the action of the spring 37.

To indicate to the purchaser when the trigger 34 has become disengaged to permit the tilting of the second gate 25, I provide the outer face of the disk 31 with a pin 41, which at the proper moment trips a bell-crank hammer 42, pivoted to the mounting-plate, the hammer thereof being retracted sufficiently forcibly under the action of a spring 43 to strike a bell 44, mounted at the top of the device, thereby signaling the fact of the disengagement of the trigger 34 from the lever 35. The coin is not ejected from either the pivoted extension 16 or housing 30 until after it has been shoved beyond the trigger 34, when it drops into a money box or receptacle 45, carried by the mounting-plate. The several operating parts are protected by an outer cover-plate 46, which conceals all except the recess 17 of the pivoted extension, being provided in front of this with a window 46', of glass or mica or any transparent material, by which the progress and genuineness of the coins can be watched, the cover-plate being secured to a flange 46'', formed with the



mounting-plate. The basal wall of the pivoted extension 16 is provided with a slit 47, through which coins of improper size and denomination will drop into a pan 50 and be returned to the purchaser.

From the foregoing it will be observed that the purchaser who happens to operate the machine at the moment when the knob 32 of the disk 31 has tripped the trigger 34 will be the fortunate one in securing an additional cigar for his money. Of course it is obvious that I need not limit the disk 31 to a single knob, but that two or more may be distributed along its face, whereby for a cheaper brand of cigars the proprietor can afford to dispose of the second cigar more frequently than is represented by a single revolution of said disk. It is furthermore obvious that I may in any mechanical manner couple with the disk 31 multiplying-gear, whereby the accessibility to the said second cigar may be had at any predetermined intervals.

In starting the machine the proprietor first introduces into the machine a number of coins (nickels in the present device) sufficient to reach to the finger 24', after which when the purchaser inserts the next coin and operates the plunger to push it the required distance the advancing coin of the series will raise the finger 24' and disengage the trigger 23, as already explained.

It is to be understood that I do not limit myself to the precise details and arrangement of parts here shown, but may alter the device in many particulars without departing from the spirit of the invention, as is obvious.

As the coin emerges from the extension 16 it will, as is obvious, be separated from the surface of the mounting-plate a distance equal to the thickness of the inner wall of said extension, and in order to guide the coin in direct line as it is thus emerging I preferably cast the housing or bracket 30 integrally with a separate plate 49, whose thickness is equal to the inner wall of said extension. In this way the coin travels in a direct line without deviation until it is discharged into the money-box. Were it not for the plate 49 it is obvious that the coin might deviate to the right or left; but as the outer surface of said plate is substantially in the same plane with the surface of the inner wall of the extension the coin is guided the entire length of its travel. As seen in Figs. 5, 6, and 9, the plate 49 serves to directly support the several parts by which the second gate is controlled. The second gate is likewise pivoted between ears 26 of the middle division-wall and opposite terminal wall of the protecting-hood 27. The latter protects the gate from above when the gates are in their upwardly-tilted positions, so that they cannot be seized and held in an open position indefinitely after being once tilted thereto by unscrupulous persons, who might be tempted to abstract more cigars than they were entitled to for their money. To further

prevent "picking" of the gate by unauthorized persons, who might force a wire under the gate through the slot 2 of the show-case, I pivot, as shown in the modification or preferred form in Fig. 10, at each terminal edge of the gate a protecting depending wing 50'. In this way it will be impossible to insert a wire under the gate, and of course it would scarcely be possible to accomplish this from the front edge of the gate, for the cigar in being removed would be in contact with said edge, which the moment of its release would be suddenly returned to its closed position under the action of the coiled spring by which the gate is controlled.

As seen by Figs. 5, 6, and 9, the pin 41 of the disk 31, while of sufficient length to trip the hammer 42 at the proper time, entirely clears the arm 33 of the trigger 34, being disposed nearer the center of rotation of the disk than is the knob 32, by which the said trigger is tripped.

While the diagrammatic view shown in Fig. 4 illustrates the distance the coin is advanced by the pin 19 for a depression of the extension 16, the spring-finger 24', from which the coin is disengaged by reason of this advance, is actually shoved even farther by the spring or resiliency of said finger as it and the arm 24 are resuming their normally-depressed position.

Having described my invention, what I claim is—

1. In a coin-controlled vending apparatus, a coin-chute, a pivoted extension for the same, means for forcing the coins through said extension, a trigger for locking the extension when in its normal position, and intermediate connections between the extension and trigger for temporarily disengaging the latter from the extension by the forward movement of the coins, substantially as set forth.

2. In a coin-controlled vending apparatus, a coin-chute, a pivoted extension for the same, means for forcing the coins through the extension, a trigger for retaining or locking the extension in its normal position, a resilient arm, bearing against the trigger and located in the path of the advancing coins, the arm being adapted to disengage the trigger from the extension when actuated in one direction by the advancing coins, substantially as set forth.

3. In a coin-controlled vending apparatus adapted to be secured to a show-case, a suitable coin-chute, a pivoted extension forming a continuation of the same, means for forcing the coins through said extension, a trigger for retaining the extension in its normal position, intermediate connections between the extension and trigger for disengaging the latter from the extension by the forward movement of the coins, and a pivoted gate adapted to depress the extension upon the withdrawal of the article from the show-case, substantially as set forth.



4. In a coin-controlled vending apparatus adapted to be operated with a show-case, a suitable coin-chute, a pivoted extension forming a continuation of the same, means for forcing the coins through said extension, a trigger for retaining the extension in its normal position, intermediate connections between the extension and trigger for disengaging the latter from the extension by the forward movement of the coins, a pivoted gate adapted to depress the extension upon the withdrawal of the article from the show-case and means for disengaging the said intermediate connections from the particular coin actuating the same, upon the depression or swinging of said extension, substantially as set forth.

5. In a coin-controlled vending apparatus, a coin-chute, a pivoted extension for the same, a trigger for normally locking said extension against movement, a resilient arm bearing against the trigger, a yielding finger carried by said arm and located in the path of the coin forced through the extension, said coin being adapted to raise the finger and arm, and the latter being adapted to trip the trigger out of engagement with the extension, a pin passing through a slot of the wall of the extension, said pin being adapted to advance the coin out of contact with the finger, in the act of depression or rotation of the extension about its pivot and a spring for restoring the extension to its normal position, the trigger being adapted to reengage the same when thus restored, substantially as set forth.

6. In a coin-controlled vending apparatus, a coin-chute, and a pivoted extension for the same, the outer wall of the latter being cut away, and having a coin-exposing recess forming a part of said cut-away portion, a pin projecting through a curved slot formed in the rear wall of the extension opposite the cut-away portion of the front wall, and a yielding arm located adjacent the projecting end of the pin, and serving to guide the coins as the same pass through the extension, substantially as set forth.

7. In a coin-controlled vending apparatus, a coin-chute, a pivoted extension for the same, means for forcing the coins therethrough, a housing or casing for receiving the coins ejected from the free end of the extension, a disk located adjacent to said housing and adapted to be impelled by the advancing coin, a trigger adapted to be tripped by the disk, and a gate controlled by said lever, substantially as set forth.

8. In a coin-controlled vending apparatus, a coin-chute, means for forcing the coin through the machine, a disk adapted to be rotated intermittently by the advance of the coin, a swell or enlargement formed on the face of the disk, a trigger having an arm adapted to be tripped by the said enlargement, a pivoted lever normally locked by said

trigger, a gate pivotally mounted in proximity to said lever and having an arm normally bearing against the same, whereby, upon tilting of the gate the lever may be depressed intermediate connections between the lever and disk for advancing the latter sufficiently to disengage the arm of the trigger from the swell or enlargement on the disk, and means for restoring the lever to its normal position and permitting the reengagement therewith of the locking end of the trigger, substantially as set forth.

9. In a coin-controlled vending apparatus, a suitable show-case having a slot formed in one of the walls thereof, a gate located opposite to, and forming the continuation of one of the walls or sides of the slot, a coin-chute, means for forcing the coin through the apparatus, and effecting a release of the gate from its locked position, whereby upon opening of the gate the slot opposite thereto may be correspondingly increased in width, and the article in the show-case may be abstracted through the slot so enlarged, substantially as set forth.

10. In a coin-controlled vending apparatus, a coin-chute, a plunger for forcing the coins through the apparatus, a gate, means for retaining the gate normally in a locked position, means for disengaging the locking device with the advance of each coin, and permitting the opening of the gate, a case having a slot in the path of which the gate is located, the opening or dimension of the slot being enlarged sufficiently with the opening of the gate to permit the withdrawal of the articles within the case, substantially as set forth.

11. In a coin-controlled vending apparatus, a mounting-plate, a gate pivoted in connection with the mounting-plate and normally held in a locked position, means for releasing the gate upon the introduction of the proper coin into, and its advance within, the machine, an arm forming a part of said gate, the mounting-plate being provided with a slot for the free oscillation of the arm therein, in either direction, a case having a slot, in the path of which the gate is located, whereby upon tilting the gate in one direction the articles can be removed from the case, and upon tilting in the opposite direction access may be had into the case by means of a picker, by which the article may be seized, substantially as set forth.

12. In a coin-controlled vending apparatus, a suitable coin-controlled gate, a picker adapted to grasp the article to be sold, and a knob or enlargement forming a part of said tool and adapted to engage the gate for purposes of tilting the same to an open position, substantially as set forth.

13. In a coin-controlled vending apparatus, a pivoted coin-chute, a spring for retaining the same in its normal position, a resilient



trigger for locking the same in said normal position, the trigger having an inclined portion, a resilient arm carried by the pivoted chute, and cooperating with the inclined portion on the trigger, a resilient finger deflected from the resilient arm and adapted to be actuated by the advancing coin, the arm being operated simultaneously with said finger, and

the trigger disengaged from the pivoted chute, substantially as set forth. 10

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

ALBERT D. SMITH.

Witnesses:

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GEORGE L. BELFRY.