E. F. SPAULDING.

COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED JULY 3, 1908.

935,824.

Patented Oct. 5, 1909.

6 SHEETS—SHEET 1.

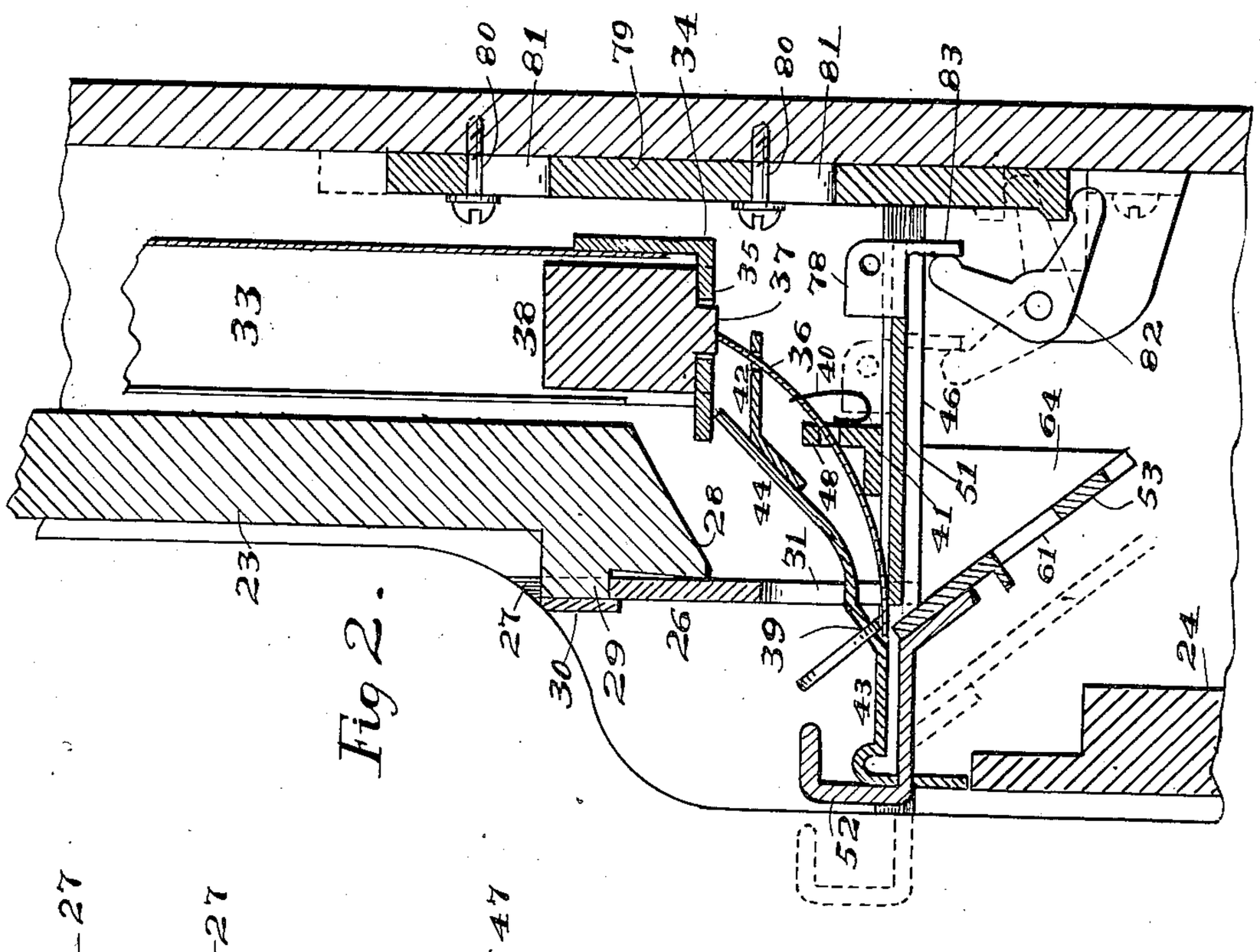

Fig 2.

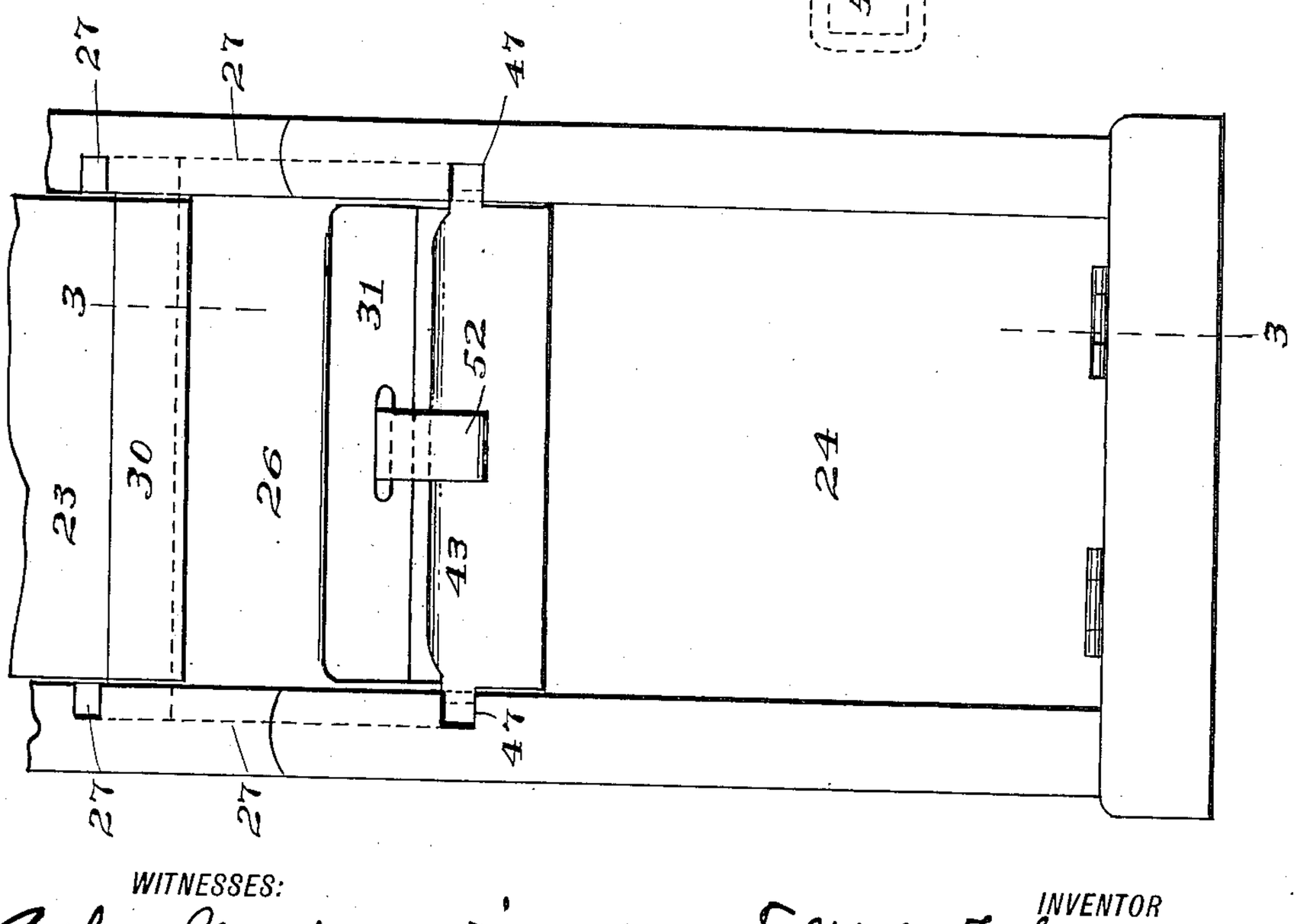

Fig 1.

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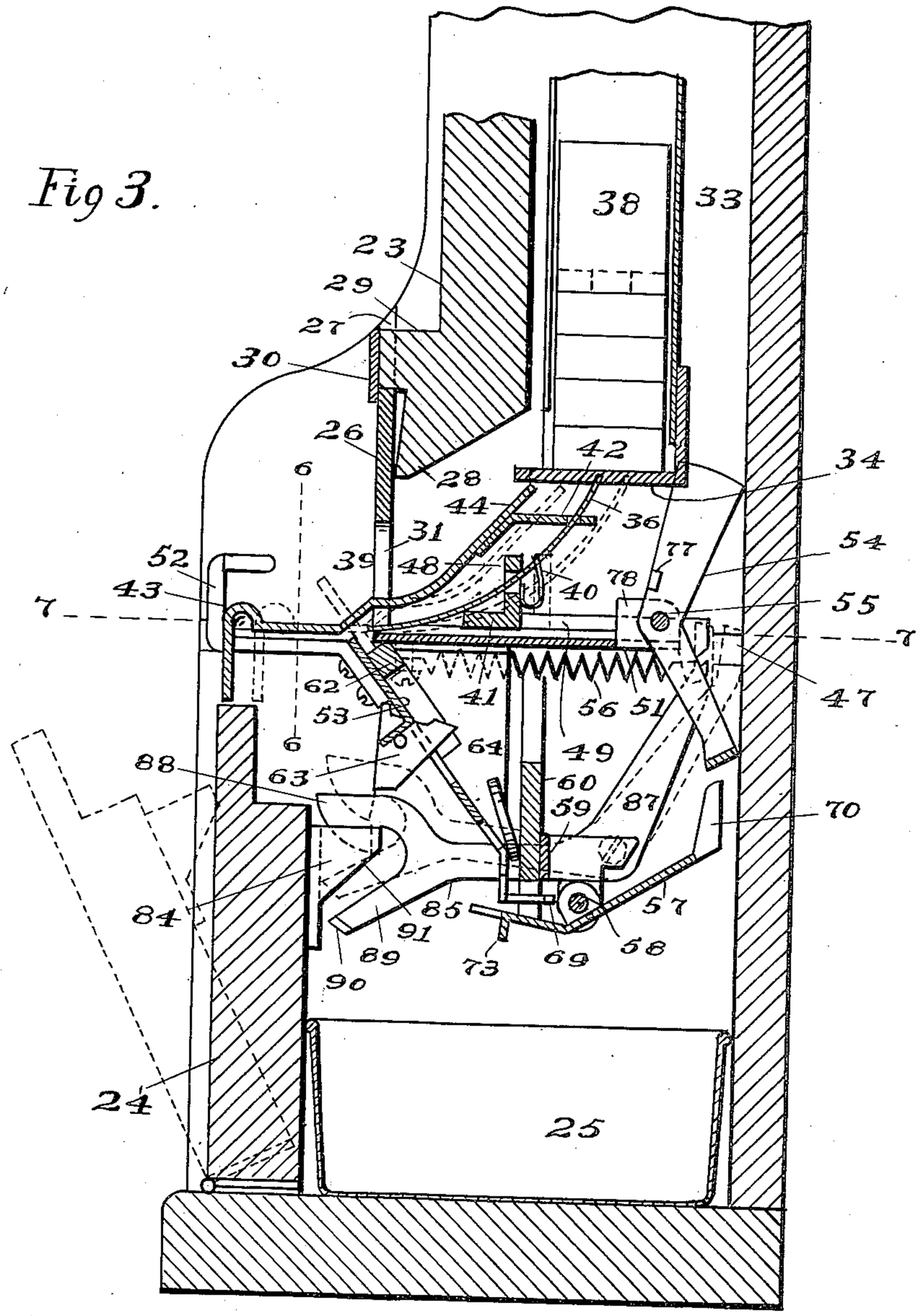
Fig 3.



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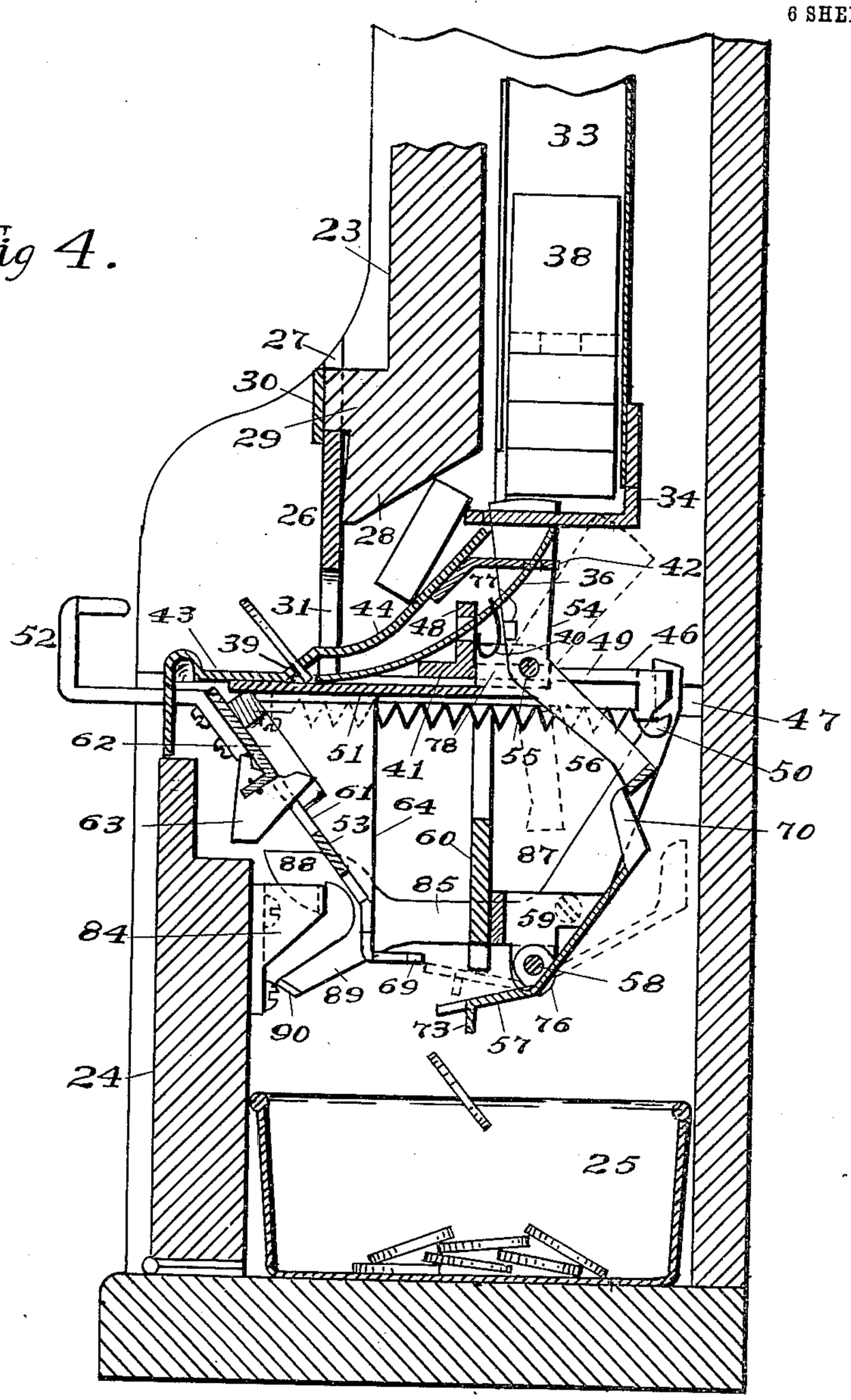
6 SHEETS—SHEET 3.

Fig 4.



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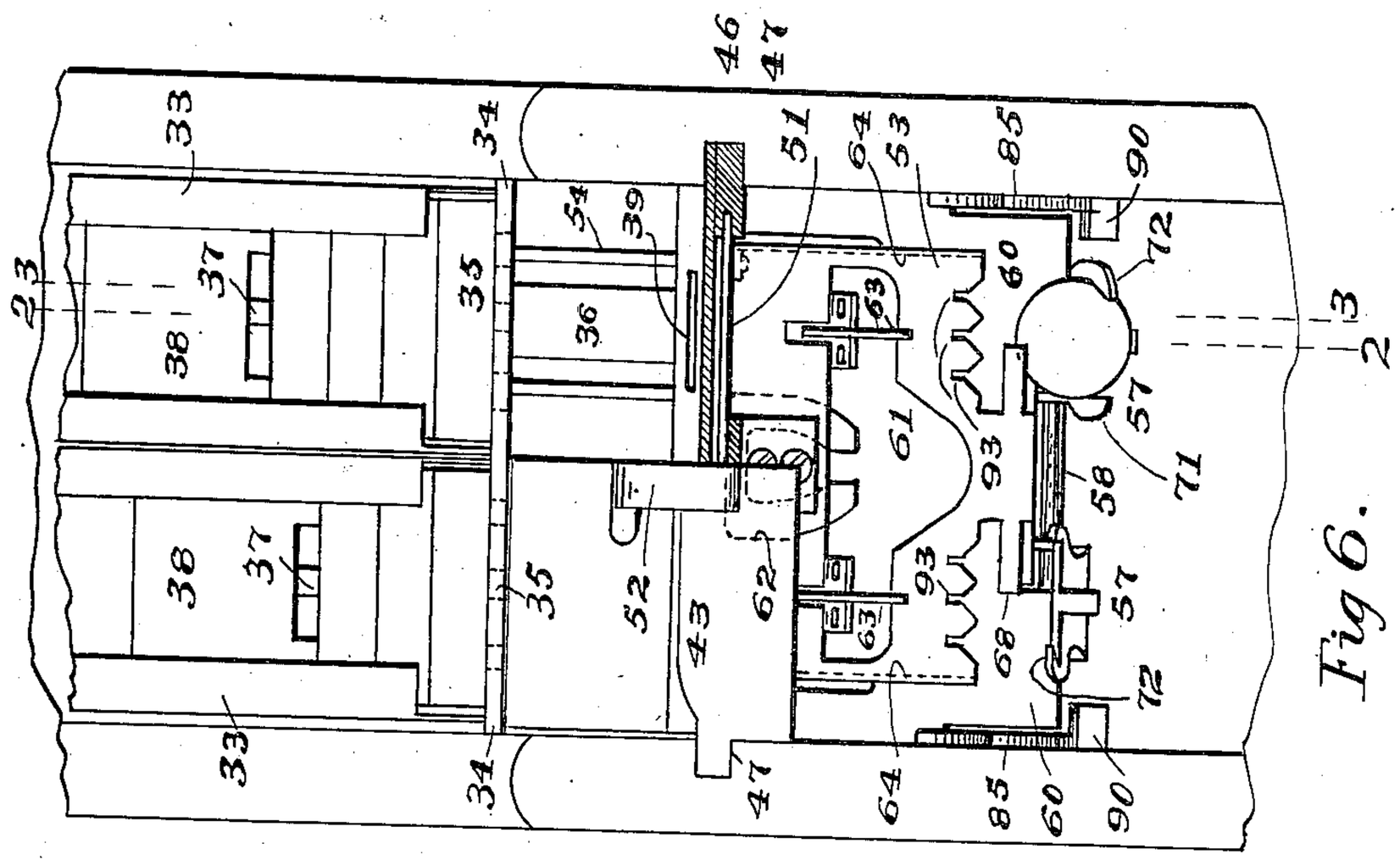

Fig 6.

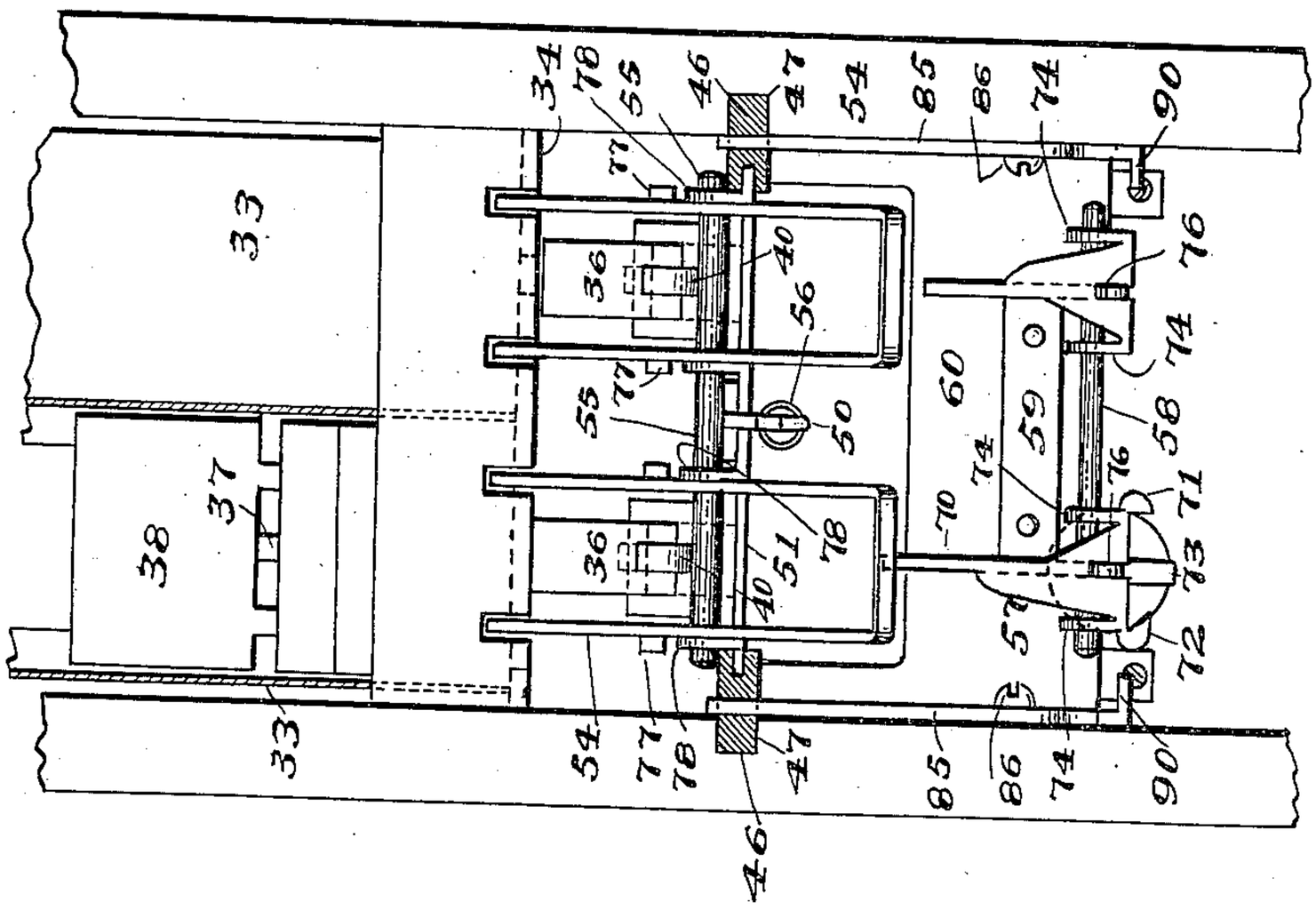

Fig 5.

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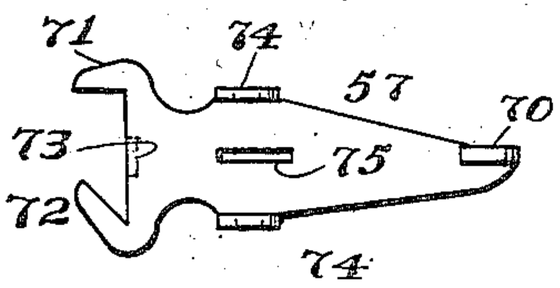


Fig 8.

Fig 9. Fig 10. Fig 11. Fig 12.

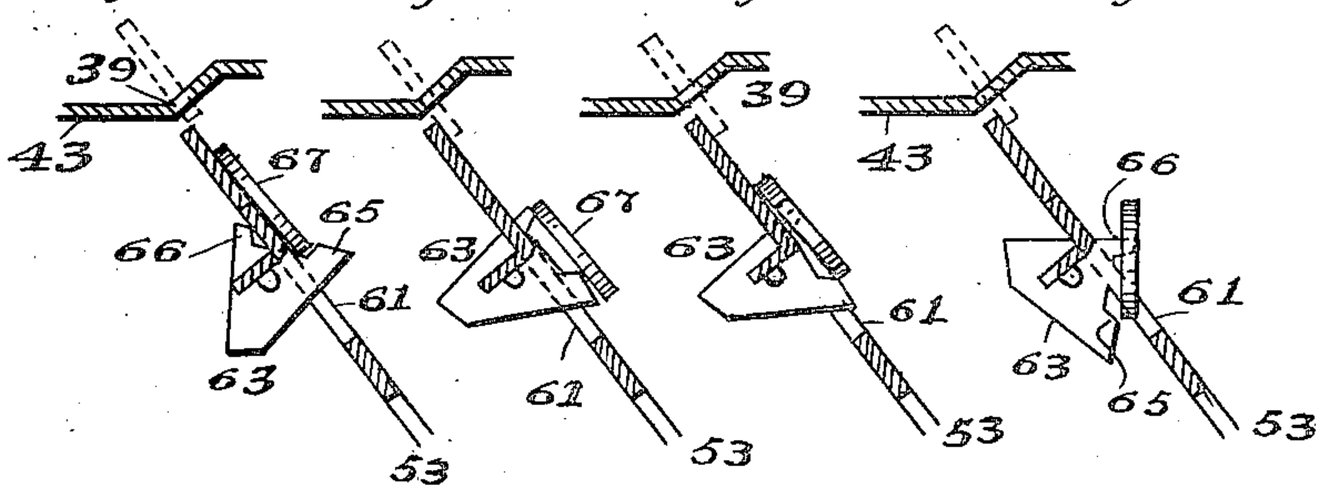
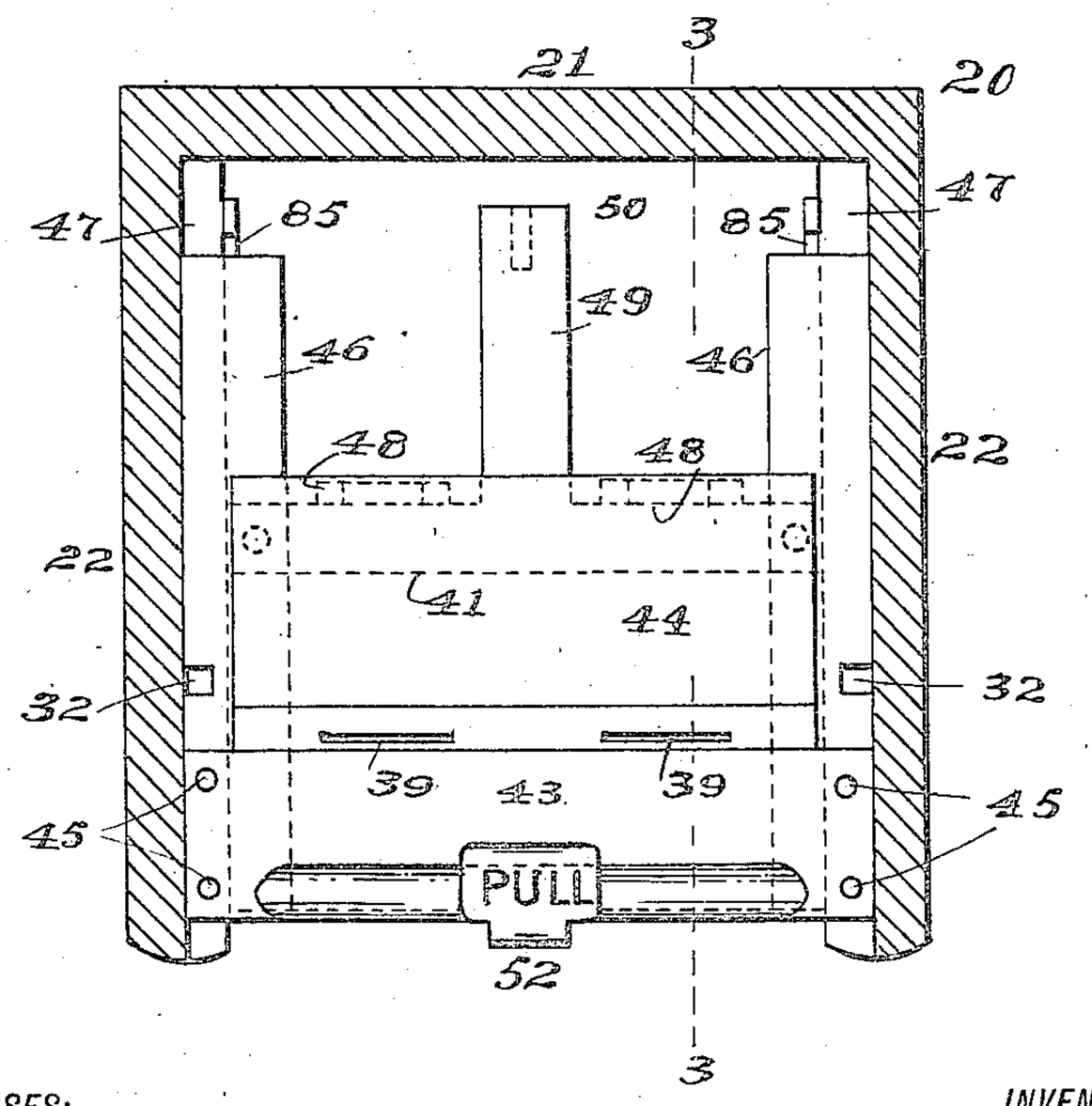


Fig 7.



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6 SHEETS—SHEET 6.

Fig 14.

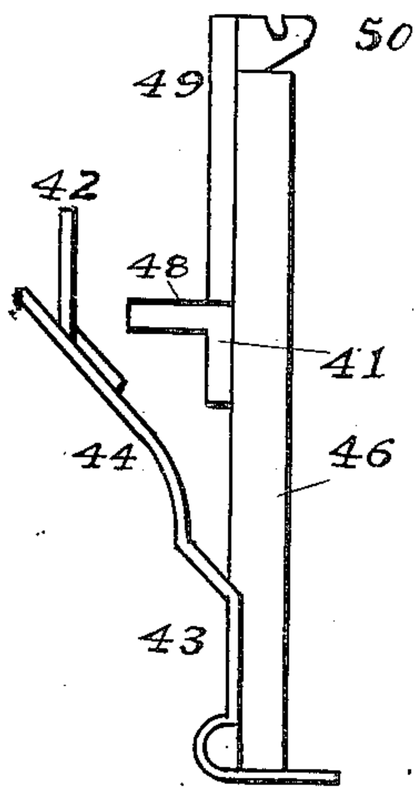


Fig 15.

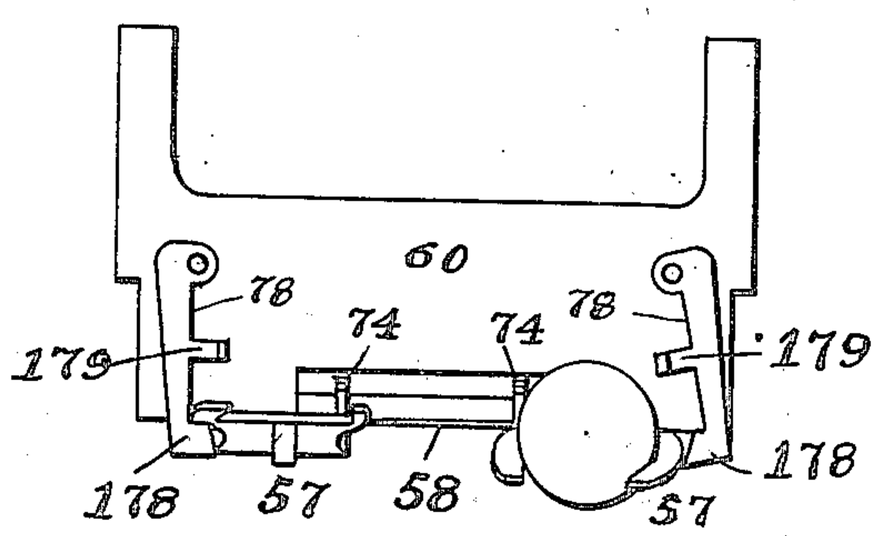
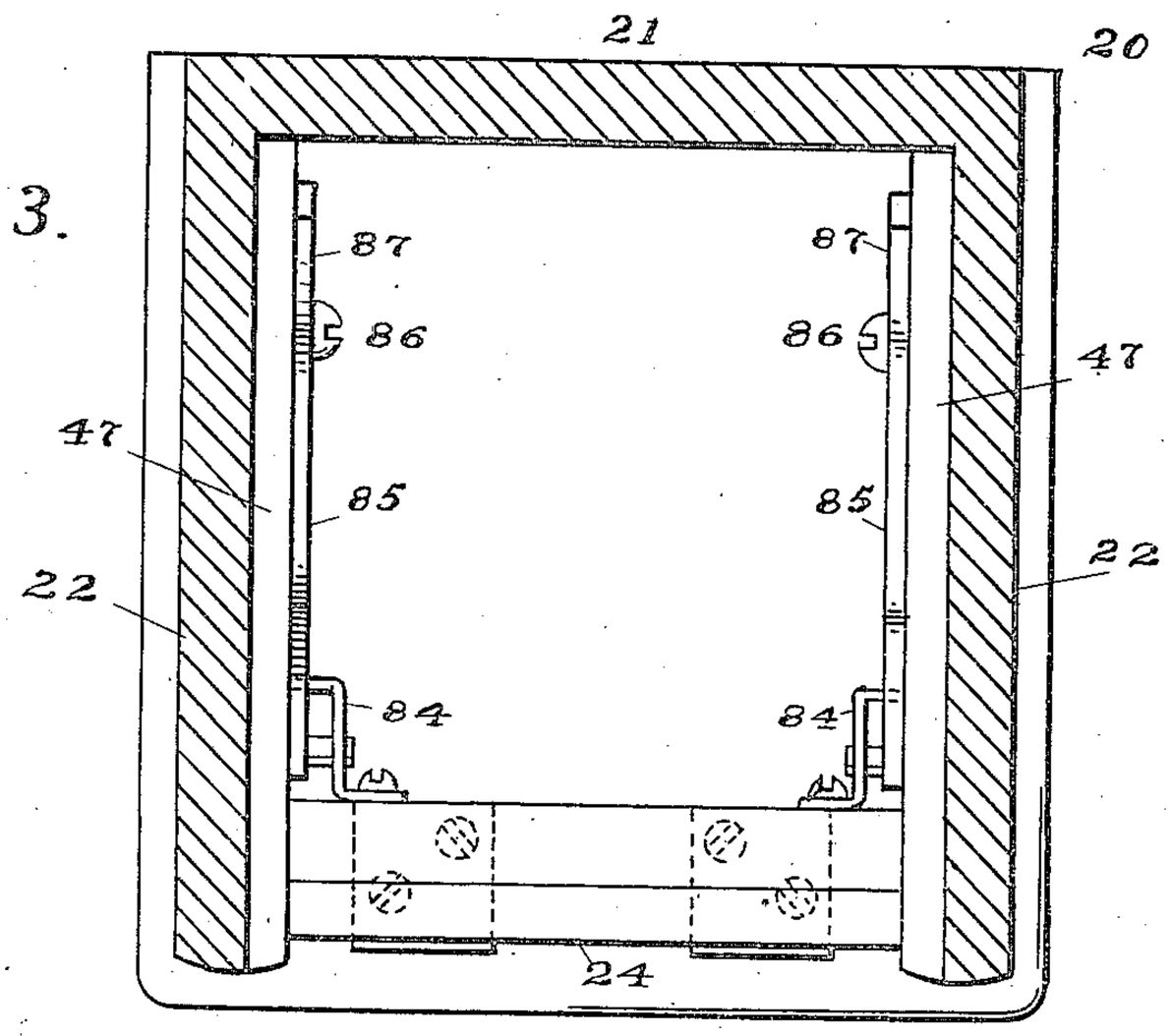


Fig 13.



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED VENDING-MACHINE.

935,824. Specification of Letters Patent. Patented Oct. 5, 1909.

Application filed July 3, 1908. Serial No. 441,723.

To all whom it may concern:

Be it known that I, ELIJAH F. SPAULDING, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification.

The invention relates to improvements in coin-controlled vending-machines, and it consists in the novel features, arrangements, and combinations of parts hereinafter described, and particularly pointed out in the claims.

The object of the invention is to provide an entirely efficient and reliable vending machine, capable of ready manufacture and operation and adapted to be operated for ejecting goods only upon the introduction of the proper coin to the machine.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a front view, partly broken away, of a machine constructed in accordance with my invention, the machine illustrated having two trays or holders for the confections or goods to be sold; Fig. 2 is a vertical section of the same on the dotted line 2—2 of Fig. 6, the pull or handle by which the ejector for either or ejectors for both stacks of confections may be operated being shown in its inner normal position by full lines and in its outer or operated position by dotted lines; Fig. 2 also illustrates a weight as the means for returning the pull or handle from its outer to its inner position; Fig. 3 is a vertical section, partly broken away, through the machine, on the dotted line 3—3 of Figs. 1, 6, 7, and by full lines shows the parts thereof in their normal position; Fig. 4 is a like view of the same illustrating the parts of the machine in their outer or operated position, a coin having been inserted through the coin-slot and the pull or handle having been drawn outwardly to cause the ejection of the coin from the coin-receiver and the discharge of a piece of confection by means of the goods-ejector; Figs. 3 and 4 illustrate the employment of a spring for restoring the pull or handle to its inner normal position in lieu of the weight presented in Fig. 2 for accomplishing the same purpose; Fig 5 is a rear elevation, partly broken away and partly in section, of the machine, the back of the cabinet being omitted and the rear wall of one of the vertical trays for holding the confections being removed; Fig. 6 is a front elevation, partly broken away and partly in section, of the machine, the front portions of the cabinet being omitted for the purpose of disclosing the interior mechanism, and a coin being shown as having been introduced through the coin slot and passed to a coin-receiver, preparatory to the pull or handle being drawn outwardly for the purpose of ejecting the coin from said receiver and the article sold from the stack, as shown in Fig. 4; one-half of the coin-slot-plate is, in Fig. 6, shown in vertical section on the dotted line 6—6 of Fig. 3, and in Fig. 6 the outer end of the pull or handle, which answers for all of the coin-slots, coin-receivers, and goods-ejectors, is shown as cut vertically through its middle portion, the right-hand half of the coin-plate of the machine being in section and the left-hand half of said plate being shown in front elevation; Fig. 7 is a horizontal section through the machine on the dotted line 7—7 of Fig. 3; Fig. 8 is a detached top elevation of one of the tiltable coin-receivers; Fig. 9 is a detached sectional view through a portion of the coin-slot-plate and coin-chute or slide-plate, and illustrates the path of a coin introduced through the coin-slot to and against a pivoted deflector plate supported by said chute or slide; Fig. 10 is a like view of the same illustrating the coin as having moved against and tilted said deflector-plate during the downward movement of the coin to the coin-receiver shown in Fig. 8; Fig. 11 is a like view of the same illustrating the action of the deflector-plate when a washer is inserted through the coin-slot of the machine, the washer being shown as having moved against and tilted the deflector-plate and a finger on said plate being represented as having entered a hole in the washer, the latter not being at once arrested by said finger but held on it; Fig. 12 is a like view of the same showing a further stage in the downward movement of the washer, the weight of the washer being shown as having turned the deflector-plate on its pivot with the washer still on the pin of said plate and said plate having turned to a position to drop the washer through an opening in the coin-chute or slide-plate, said washer being thereby prevented from sliding down said plate and entering the

tiltable coin-receiver; Fig. 13 is a horizontal section through the machine on the dotted line 7—7 of Fig. 3, with the coin-slot-plate and its parts (shown in Fig. 7) omitted, Fig. 13 being presented more particularly to illustrate the coin-door locking mechanism for the lower part of the cabinet; Fig. 14 is a detached side elevation of the coin-slot-plate and connected parts, and Fig. 15 is a detached front view of an inner plate supporting two tiltable coin-receivers and is presented for the purpose of clearly disclosing the pivoted latch-plates employed to firmly hold the said receivers stationary when they are not in use; the said latch-plates are adapted to be freed from the receivers by the passage against them of the coins while the latter are sliding down to enter the receivers.

In the drawings, 20 designates the cabinet as a whole, said cabinet comprising a back 21, sides 22, an upper removable front 23 behind which the trays for the stacks of confections are located, and a lower front hinged coin-door 24, behind which and between the sides and back of the cabinet is formed a chamber to receive a portion of the operative mechanism of the machine and also a receptacle 25 into which the coins fed to the machine finally land and which, when the door 24 is opened, may be removed for transferring the coins from the machine to any suitable receiver provided for them. The removable front 23 is of usual character above its lower end, and these fronts are customarily inserted between the sides of the cabinets and locked at their upper ends to the top thereof, said fronts being removably supported at their lower ends. In the present instance I support the front 23 upon a transverse plate 26 which is mounted to slide in grooves 27 formed in the sides 22. The front 23 is formed with a downwardly extending portion 28 to pass downwardly behind the upper portion of the plate 26 and with a forwardly projecting portion 29 to rest upon the upper edges of said plate, and said forwardly projecting portion 29 will preferably be faced by a metal plate 30 which will project slightly below the same so as to pass below the upper front edges of the plate 26. When the front 23 is locked in its position, it locks the plate 26, but when the front 23 is removed the plate 26 may be slid upwardly in its grooves 27.

The plate 26 is a plain flat plate extending transversely between the sides of the cabinet and is cut out between its lower end portions to form a discharge opening 31 for the confections ejected from the lower ends of the stacks thereof. The lower end portions of the plate 26 constitute two legs which when the plate is in normal position extend downwardly into openings 32 (Fig. 7) to be hereinafter described.

The trays for the stacks of confections are numbered 33 and are of customary character with the exception that in the base 34 of each thereof I form an opening 35 (Fig. 2) within which the upper end of a shutter-plate 36 may extend when the tray contains no confections or in other words is emptied and from which opening 35 said plate 36 is pushed, when the tray is empty, by the descent on the upper end of said plate of a stud 37 formed on the weight 38 which, when the tray 33 is filled, is placed on the stack. The weight 38, less the projecting finger or stud 37, is of known character and in the employment of which said weight remains upon the stack of confections and gradually lowers as the pieces of confections are dislodged from the lower end of the stack. In the present instance when the last piece of confection is discharged from the stack, the weight 38 descends upon the base 34 of the tray and the finger or stud 37 passes into the opening 35 in said base and drives the upper end of the shutter-plate 36 downwardly therefrom, said plate 36 being thereby caused to slide forwardly below the coin-slot 39 for the purpose of preventing the introduction of coins through said slot. So long as the tray remains empty the shutter-plate 36 will be held in its lower position, shown in Fig. 2, closing the coin-slot, but at all other times the shutter-plate 36 will be held in its upper position, shown in Fig. 3, by means of a light spring 40, whose force is exerted to move the plate 36 upwardly and toward the rear so that the upper end of said plate may stand in the opening 35, the coin slot 39 being thus left free for the reception of coins. The plate 36 is a curved plate and is guided in apertures formed in the vertical portions 48 of the transverse bar 41 and horizontal transverse bar 42. There will be one shutter-plate 36 for each coin-slot and tray.

The coin-slot plate is numbered 43 and extends between the lower end leg-portions of the vertical front plate 26, and said plate 43 will preferably be in one integral piece of sheet metal and have an upwardly inclined inner or rear portion 44 to form a slide for the automatic discharge of the confections through the opening 31 in said plate 26, while the outer or front portion of the plate 43 is horizontal to form a shelf to retain the confections which may slide down the inclined portion 44 of the plate. The extreme front portion of the plate 43 will be bent downwardly to meet the upper edge of the lower front door 24. The coin-slots 39 are formed in the plate 43 and in the present instance said plate is formed with two of said slots, the present machine showing only two trays for the confections. The front edge portion of the base 34 of the trays extends frontwardly beyond and is in close relation to the upper edge of the plate 43

to aid in preventing the entrance of an instrument through the opening 31 of the plate 26 in an effort to dislodge the confections held by the trays. The transverse horizontal plate 42, hereinbefore referred to, is secured to the inner face of the inclined portion 44 of the plate 43, and hence remains stationary with said plate. The plate 43 is shown in top plan in Fig. 7, and said plate is secured by rivets 45 to horizontal bars 46 which are adapted to horizontal grooves 47 formed in the sides 22 of the cabinet. The plate 43 has connected with it, directly and indirectly, almost all of the operative parts of the mechanism, and said plate is secured in position by its side-bars 46 being slid into the grooves 47 and by being therein locked by the end leg-portions of the plate 26 entering the aforesaid openings 32 (Fig. 7), which are formed in the said bars 46. The transverse bar 41 hereinbefore referred to is illustrated by dotted lines in Fig. 7, and has formed on it the vertical lug portions 48, in which guide-openings are formed for the shutter-plates 36. The bar 41 is also formed with a rearwardly extending arm 49 carrying on the lower side of its rear end a hook 50.

Below the coin-slot plate 43 and mounted in grooves in the side-bars 46 (Figs. 5 and 6) is mounted a plate slide 51, to which are connected the handle or pull 52, a downwardly inclined chute or plate 53 to receive and direct the coins and the goods-ejectors 54, the latter being pivotally mounted upon a rod 55 which has its bearings in ears turned upwardly from said plate 51, as shown in Fig. 5. The plate 51, handle or pull 52, inclined plate 53 and goods-ejectors 54, are all connected together and all move outwardly together to the position indicated in Fig. 4 when said handle is drawn outwardly to eject a piece or pieces of the confections; and said parts are automatically returned inwardly to their initial position shown in Fig. 3 by means of a coiled spring 56 which is secured at its inner or rear end on the hook 50 of the arm 49 forming a portion of the stationary plate 41, while the front end of said spring is fastened to the head of a screw connected with the plate 51. The spring 56 is always under tension and yieldingly resists the outward movement of the handle or pull 52 and plate 51 and then restores said handle or pull and plate to their inner initial position when the hand of the operator is released from said pull.

The plate 53 inclines downwardly and inwardly and directs the coins introduced through the coin-slots 39 to the coin-receivers 57, which are pivotally mounted on a rod 58 supported from a transverse bar 59 (Fig. 5) held by a rigid transverse plate 60 extending across the chamber below the coin-slot-plate 43 and slidable plate 51. The ends of the plate 59 are projected rearwardly, and these ends at their lower portions afford bearings for the rod 58 and at their rear extremities form inclined stops for the coin-receivers 57, Fig. 4 illustrating one of the coin-receivers in its upper position against one end of said plate 59.

The inclined plate 53 is formed with an opening 61 (Fig. 6) and equipped with a magnet 62 and pivoted deflector plates 63, the latter being more clearly illustrated in Figs. 9 to 12. The magnet 62 is provided for the purpose of attracting any iron or steel disk that might be introduced through the coin-slots and deflecting the same from the straight path for coins leading to the coin receivers 57. The magnet 62 is midway between the two coin-slots 39, and its outer edges form guides defining the inner edges of the paths for the coins from the coin-slots to the coin-receivers 57, the outer edges of said paths being formed by the sides 64 of said plate 53. When an iron or steel disk is introduced to either of the coin-slots it will be attracted by the magnet 62 and roll along the downwardly and inwardly inclined edge thereof toward the enlarged middle portion of the opening 61 in the plate 53 and said iron or steel disk will finally fall from said magnet and pass through said enlarged middle portion of said plate 53, becoming thus discharged and prevented from entering the coin-receivers 57. The one magnet 62 answers for both of the coin-slots 39 shown. The deflectors 63 are directly in the path for the coins and they are pivotally mounted on the plate 53 and hang freely in the end portions of the opening 61 in said plate, as shown in Fig. 6. The deflector plates 63 have their upper portions within slots formed in the plate 53 and at their upper ends are each provided with a shoulder 65 and finger 66 (Figs. 9 to 12). The normal hanging position of the deflectors 63 is shown in Fig. 9, wherein I also illustrate a coin 67 as having just reached the shoulder 65 of the deflector-plate 63. The weight of the coin 67 will, pressing against the shoulder 65, turn the deflector-plate 63 downwardly and toward the front, as shown in Fig. 10, and said coin will continue its passage downwardly to the coin-receiver 57. The deflector-plate 63 does not perform any special duty when a proper coin 67 has been introduced to the machine, the coin then tilting the plate from the position shown in Fig. 9 to that illustrated in Fig. 10 and passing practically unobstructedly to the coin-receiver. In the event, however, that a washer should be introduced to a coin-slot of the machine, its edge will strike the shoulder 65 of the plate 63 and tilt the plate downwardly and rearwardly, with the result that the finger 66 of the plate will pass into the hole in the washer, as shown in Fig. 11; the weight of the

washer during its continued downward movement will then be against the finger 66 and the plate 63 will be moved by the washer to the tilted position shown in Fig. 12, and finally the washer will fall from said finger and pass through the opening 61 in the plate 53, being by the plate 63 thus deflected from the path for the coins and prevented from entering the coin-receiver. The deflector-plates 63 are thus intended to prevent washers and the like from reaching the coin-receivers. There will be one deflector-plate 63 in the path extending from a coin-slot to a coin-receiver, as shown in Fig. 6.

The plate 53 at its lower central portion is formed with laterally extended fingers 68 (Fig. 6), which aid in directing the coins to the coin-receivers 57, and at the extreme lower inner end of the plate 53, said plate is formed with laterally projecting fingers 69 which stand in rear of the front portions of the coin-receivers 57 and serve when the handle or pull 52 is drawn frontwardly to eject the coins from said receivers, allowing the coins, as shown in Fig. 4, to descend into the receptacle 25.

The coin-receivers 57 are blanked up from sheet metal and at their rear ends are formed with upwardly extending arms 70 and at their front ends with fingers 71, 72 and downwardly extending lips 73, the fingers 71, 72 being sufficiently separated from each other to enable a coin to rest between them and against the lip 73 without permitting the coin to pass entirely downwardly between them. The finger 71 is preferably straight and the finger 72 inclined in a direction toward the finger 71. A coin receiver having the fingers 71, 72 and lip 73 is illustrated in Letters Patent No. 875,128 granted to me December 31, 1907, and therefore this special construction for receiving and holding the coins is not separately claimed herein and will be understood without detailed explanation. The coin-receivers 57 are each formed with upwardly-turned ears 74 to receive the pivot-rod 58 and with a substantially central slot 75 into which the downwardly extending ears 76 of the bar 59 project to prevent the shifting of the receivers on said rod 58. The ears 76 support the rod 58 upon which the coin-receivers 57 are mounted. The arms 70 formed on the rear ends of the coin-receivers 57 extend upwardly and normally stand slightly below the lower ends of the goods-ejectors 57, as shown in Fig. 3, but when a coin descends between the fingers 71, 72 of a coin-receiver, the weight of the same will depress the front end of the receiver until the rear end thereof tilts upwardly to position in front of the said lower end of the goods-ejector, so that upon the outward movement of the handle or pull 52, the lower end of the goods-ejector will become arrested by the arm 70 of the coin-receiver with the result, as shown in Fig. 4, that the upper member of the goods-ejector due to the outward movement thereof will be turned on its pivot and carried against the lower piece of confections in the tray 33 and eject said piece to descend to the purchaser.

The goods-ejectors 54 are pivotally mounted on the rod 55, hereinbefore referred to, and, as more clearly shown in Fig. 5, formed of plates of sheet metal bent into substantially U-shape, those portions of the goods-ejectors above the rod 55 being preferably somewhat wider than those portions thereof below said rod, as shown in Fig. 3. The upper and lower portions or members of each goods-ejector 54 stand at an oblique angle to each other, and the upper edges of the two vertical members of each goods-ejector are curved or rounded upwardly, so as to present convex surfaces at the proper time to the confections remaining in the tray 33, as shown in Fig. 4. The base of the trays 33 are recessed, as shown in Fig. 5, to admit the upper ends of the goods-ejectors 54. In the normal initial condition of the machine the goods-ejectors 54 stand in the position in which they are represented in Fig. 3, the upper ends of the ejectors being at the rear of the lower end of the trays 33 with a slight portion thereof within the grooves in the said trays. In the operated condition of the machine, shown in Fig. 4, the upper ends of the goods-ejectors 54 are below the confections remaining in the tray 33. When the pull or handle 52 is drawn frontwardly to eject a piece of the confection, the upper ends of a goods-ejector are carried frontwardly against the lower piece of confection in the stack and press said piece forwardly from the tray. When the pull or handle 52 is released to return to its inner initial position the upper curved ends of the ejectors ride against the lower piece of confection remaining in the tray and finally reach the position shown in Fig. 3. The goods ejector 54 is enabled to move from its position shown in Fig. 3 to that illustrated in Fig. 4 by reason of the fact that preparatory to the movement of the pull or handle 52 a coin has, as hereinbefore described, tilted the arm 70 of a coin-receiver upwardly in front of the lower end of said ejector, thereby restraining it and compelling the upper portion of the ejector to turn on the rod 55 and press against the lower piece of confection. The goods-ejectors 54 are provided on their outer sides above the rod 55 with lugs 77 (Fig. 5) which may engage forwardly extending portions of the ears 78 in which the rod 55 has its bearing and operate as stops to prevent any further forward tilting movement of the upper portions of said goods-ejectors than that represented in Fig. 4, in which it may be seen that upon the tilting

frontwardly of the upper portion of the goods-ejector the shoulders 77 engage the ears 78 and arrest the ejectors. During the return or inward movement of the handle or pull 52 the lugs 77 by their engagement with the ears 78 enable the goods-ejectors while standing in the position shown in Fig. 4, to move inwardly until the lower ends of said ejectors strike the back of the cabinet and become arrested by it, whereupon the continued inward movement of the handle or pull 52 results in the upper portions of the ejectors turning rearwardly on the rod 55, leaving the stack of confections and taking the position in which they are illustrated in Fig. 3. The ears 78 are useful also in that they contact with the upwardly turned portions 48 of the plate 41, when the handle or pull 52 is drawn to the limit of its forward movement; said ears by their engagement with said portions 48 serve as stops to arrest the handle or pull 52 and parts connected therewith at the proper time.

The pull or handle 52 has connected with it the slidable-plate 51, the downwardly inclined coin-plate 53 and goods-ejectors 54, and after a coin is introduced into the machine and slides down the plate 53 and enters a coin receiver 57, the handle or pull 52 is drawn outwardly to effect the ejection of a piece of the confections; upon the release of the handle 52 the spring 56 will restore the handle, plate 51 and coin plate 53 to their initial position, the inward movement of the plate 51 causing the ejectors 54 to travel inwardly. The shutter plate 36 is not movable with the plate 51, but is moved upwardly by the spring 40 and downwardly, when a tray is empty, by the weight 38. The coin-receivers 57 are, except for their tilting motion, stationary with the bar 59 and plate 60, and the upward movement of their rear arms 70 is limited by the rearwardly projecting ends of said bar 59, as shown in Fig. 4, while upward movement of the front portions of said coin-receivers is limited by the lower projecting portions of the plate 60, as indicated by dotted lines in Fig. 4 and full lines in Fig. 3. I preferably latch the coin-receivers 57 in their initial position and depend on the coins fed to the machine to release the latches and free the coin-receivers to tilt. The latches for automatically engaging and holding the coin receivers in their initial position are shown in Fig. 15 and numbered 78. These latches are pivoted at their upper ends to the supporting plate 60 and have lower arms or hooks 178 to pass below the adjacent edges of the coin-receivers and intermediate arms 179 against which coins passing to the receivers will strike and thereby move the latches free of the receivers before the coins enter the latter. The arms 179 have their outer ends bent at right angles to the main body of the arms so as to afford adequate surfaces against which the descending coins may move to force the latches outwardly from the coin-receivers. A coin fed to the machine and descending to a coin-receiver will first move against the arm 179 of a latch 78 and force the latter to turn outwardly from and release the receiver and said coin will then enter the receiver and by its weight cause the receiver to tilt downwardly at its front end and upwardly at its rear end. After the coin has been ejected from the receiver, the front end of the latter will ascend and its rear end descend, and during the upward movement of the front end of the receiver its edge will ride against the upwardly inclined edge of the end of the arm or hook 178 of the latch and finally attaining its full upper position permit said arm or hook 178 to automatically pass below it. I provide the latches 78 as a precautionary measure; they prevent the rear ends of the coin receivers from being tilted upwardly in the path of the lower ends of the goods-ejectors by the peculiar jarring actions to which some of these machines are subjected in an attempt to operate them without the use of coins.

It is preferable to employ means for automatically restoring the handle or pull 52 and parts connected therewith to their inner position after each operation or outward pull of said handle, and in Figs. 3 and 4 I illustrate the spring 56 for securing this result. In Fig. 2 I illustrate a substitute for the spring 56, this substitute comprising a vertical weight 79 secured by screws 80 to the back of the cabinet and slidable on said back and screws by reason of elongated slots 81 formed in said weight. The weight 79 is employed in connection with a bell-crank lever 82, one arm of which is engaged by a lip 83 formed on the plate 51 and the other arm of which is directly below and engaged by the lower end of the weight 79. When the handle or pull 52, in the construction shown in Fig. 2, is pulled outwardly, the lip 83 will turn the bell-crank lever 82 to the position shown by dotted lines and the lower arm of said lever will move the weight 79 upwardly. Upon the release of the handle 52 the weight 79 pressing against the lower arm of the bell-crank lever 82 will restore said lever to its initial position and cause the same, acting through the lip 83, to restore the handle 52 and parts connected therewith to their inner position.

The lower front door 24 is hinged to the bottom of the cabinet and has secured on its inner face near its side edges, the latch-plates 84 (Fig. 13), which coöperate with pivoted latch-bars 85 in securing the door 24 in closed position. The latch-bars 85 are pivotally secured, on screws 86, against the

inner faces of the sides 22 of the cabinet, and said latch-bars comprise upwardly and inwardly extending rear members 87, whose form is illustrated in Figs. 3 and 4, and front members which are bifurcated and comprise a hook portion 88 and a lower arm 89, which when the hook 88 is in engagement with a latch-plate 84 on the door 24 holds its laterally deflected forward end 90 below said latch-plate, as shown in Figs. 3 and 4. The latch-plates 84 have upwardly and inwardly inclined lower edges 91 to be engaged by the portions 90 of the latch-bars 85 at the proper time. When the door 24 is turned to its closed position the upper inner edges of the latch plates 84 will ride against the curved lower edges of the hooks 88 and lift the latter until the door 24 has become fully closed, whereupon the hooks will pass to the front of the inner ends of said latch plates and by engaging the same lock the door in its closed position, this locking of the door being done automatically.

One advantage of the locking mechanism in its combination with the slides 46 and other features, is that the unlocking of the door 24 may be performed with great convenience and without the use of a key. When it is intended to replenish the trays 33 with confections and empty the coin receptacle 25, the attendant will remove the front 23 of the cabinet and slightly raise the plate 26 to free the lower end portions of the same from the slides 46, and thereupon by pressing inwardly on the handle or pull 52, the coin-slot-plate 43, slides 46, plate 51 and other connected parts, will be driven slightly inwardly toward the back of the cabinet and the inner ends of the slides 46 will at such time be pressed against the upper rear ends of the latch-bars 85, forcing the same rearwardly and turning the hooks 88 upwardly from the latch-plates 84 and causing the lower ends of the arms 89 of said latch-bars to ride upwardly against the inclined lower edges of said latch-plates and thereby force the door 24 to an open position. The inward movement of the handle or pull 52 beyond its normal initial position thus operates through the slides 46 to not only unlatch the door 24 but to force it to an open position. After the receptacle 25 has been emptied and the trays 33 replenished, the front 23 may be restored to its position and the door 24 closed and latched, the act of closing the door 24 resulting in its being automatically latched, as hereinbefore explained.

The operation of the machine will largely be understood from the description hereinbefore presented. The normal condition of the machine when ready for operation is shown in Fig. 3. The purchaser will introduce the proper coin into the coin-slot 39 and then draw the handle or pull 52 outwardly to discharge the goods. The coin will slide down the coin plate 53 and enter a coin-receiver 57 and tilt the arm 70 thereof upwardly into the path of the lower end of the goods-ejector 54. Upon the outward movement of the handle or pull 52 the goods-ejector 54 will be turned on its pivot as well as at its upper portion carried forwardly, with the result that it will move against the lower piece of confections in the stack and dislodge the same, as indicated in Fig. 4. Upon the release of the handle or pull 52 the spring 56 or weight 79, as the case may be, will restore the handle or pull and parts connected therewith to their inner position. During the inward movement of the goods-ejector which had been operated, the lower end thereof will strike against the back of the cabinet and, becoming arrested thereby, will cause the upper portion of said ejector to turn rearwardly from below the tray 33 to the position shown in Fig. 3. To secure the proper operation of the goods-ejector a proper coin must be introduced to the machine and enter the coin receiver 57 so as to tilt the arm 70 thereof upwardly into the path of the goods-ejector. After all the pieces of confection in a stack have been sold the stud 37 on the lower end of the stack-weight 38 will enter the opening 35 in the base of the tray and force the shutter plate 36 downwardly therefrom, thereby causing the forward end of said plate to pass below and exclude coins from the slot 39.

If a steel or iron disk or the like should be placed in the coin slot it will be caught by the magnet 62 and discharged through the wider portion of the opening 61 without reaching the coin receivers 57.

Should a washer be fed to the machine it will be caught on the deflector plate 63, as shown in Figs. 11 and 12, and drop through the opening 61 in the plate 53 and be thereby prevented from reaching a coin receiver. A coin less than the proper size fed to the machine will not operate the coin receivers but will slide between the fingers 71, 72 thereof. A light weight disk that might enter and be caught by the coin receiver will be insufficient to overbalance the rear portion of the receiver, and hence will not operate to move the arm 70 of the receiver into the path of the goods-ejector. Upon the operation of the handle or pull 52 the fingers 69 on the plate 53 will pass against any disk or coin held in the coin receivers and dislodge the same, these fingers acting as coin ejectors. Should a coin of the proper size and weight but tied to a string be fed to the machine, the string extending upwardly from the coin reaching a coin receiver will be caught in one of the slots 93 in the lower edge of the plate 53 with the coin below said edge, and thereby the coin will be held within the machine and its further use prevented.

A wire inserted down through a coin-slot to tilt a coin-receiver into its operative position, cannot be successfully used with the present machine since the goods ejector must have a given forward movement with the plate 51 and handle or pull 52 before it is rendered operative by its lower end meeting the upwardly projected arm at the rear end of said receiver and this forward movement to an adequate extent is prevented by the presence of a wire in the coin-slot, said wire obstructing the forward movement of the plate 51 and parts connected with it.

One feature of my invention is that the one handle or pull 52 answers for and operates all of the goods-ejectors during the outward movement of the handle. It is convenient, therefore, in using the present machine, to introduce a coin through each of the coin slots and then effect the ejection of the two or more pieces of confections by a single outward pull of the handle 52. The handle 52 may thus, when pulled outwardly, be utilized for the sale of one piece of goods or as many pieces as there are stacks in the machine. The coin-receivers 57 are independent of each other and hence only that coin-receiver is set into operative position which receives a coin. The outward movement of all the goods-ejectors with the handle 52 does not necessarily mean that each ejector will dislodge a piece of the goods, since only those ejectors may operate at such time as have their lower portions arrested by coin-receivers moved to their operative position by the entrance of coins thereto.

What I claim as my invention and desire to secure by Letters Patent, is:

1. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold; substantially as set forth.

2. In a coin-controlled vending machine having a coin-slot-plate and holder for the goods to be sold, a slide below said plate, an exposed handle connected with said slide, a concealed coin-chute connected with said handle and a goods ejector connected with said slide, combined with a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector for rendering the latter operable when said handle is pulled out, and a latch for holding said coin-receiver normally stationary and operable by a coin fed to the machine for freeing said receiver; substantially as set forth.

3. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said goods-ejector being, at its upper end, normally in rear of the lower end of said holder so as to compel the pulling of said handle, slide and ejector outwardly for operating the machine; substantially as set forth.

4. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said goods-ejector being, at its upper end, normally in rear of the lower end of said holder so as to compel the pulling of said handle, slide and ejector outwardly for operating the machine, and the lower end of said ejector being normally spaced from and in rear of said coin-receiver so that the ejector and slide may move outwardly a given distance before the goods-ejector is acted on by the receiver; substantially as set forth.

5. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a

pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said goods-ejector being, at its upper end, normally in rear of the lower end of said holder so as to compel the pulling of said handle, slide and ejector outwardly for operating the machine, combined with means for automatically returning said handle, slide and goods-ejector to their inward position after each operation of the machine; substantially as set forth.

6. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said goods-ejector being, at its upper end, normally in rear of the lower end of said holder so as to compel the pulling of said handle, slide and ejector outwardly for operating the machine, combined with means for automatically returning said handle, slide and goods-ejector to their inward position after each operation of the machine, and means on the return inward movement of said ejector for engaging the lower end of the same and thereby compelling its upper end to turn rearwardly to its initial position; substantially as set forth.

7. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said coin-chute being connected to move with said handle and having an opening therein and a magnet defining one edge of the path for coins down said chute, and said magnet having a downwardly and inwardly inclined edge terminating above said opening for drawing a disk attracted by it to said opening and permitting the disk to descend through the same; substantially as set forth.

8. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said coin-chute being connected to move with said handle and having in its lower edge a slot open at its lower end to receive a string should one attached to a coin or the like be carried into the machine; substantially as set forth.

9. In a coin-controlled vending machine having a coin-slot-plate and holder for the goods to be sold, a slide below said plate, an exposed handle connected with said slide, a concealed coin-chute connected with said handle and a goods ejector connected with said slide, combined with a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of said ejector for rendering the latter operable when said handle is pulled out, said chute carrying a finger which initially stands in rear of a coin held by said receiver and which serves to eject said coin from the receiver when said handle is pulled out; substantially as set forth.

10. In a coin-controlled vending machine having a coin-slot-plate and holder for the goods to be sold, a slide below said plate, an exposed handle connected with said slide, a concealed coin-chute connected with said handle and a goods-ejector connected with said slide, combined with a tiltable coin-re-

ceiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of said ejector for rendering the latter operable when said handle is pulled out, said chute having an opening therein and a deflector pivoted in a slot above said opening and having a shoulder normally standing in the path for coins and a finger to project upwardly when the deflector is turned on its pivot by pressure applied against said shoulder; substantially as set forth.

11. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said ejector frame being of approximately U-shape and comprising two sides connected together at their lower ends by a bar; substantially as set forth.

12. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle for operating said slide, a pivotally mounted goods-ejector carried by said slide and comprising a frame whose lower portion extends downwardly below said slide and whose upper portion extends above the same to engage the lower piece of goods in said holder, a coin-chute extending downwardly below said slide, and a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of the lower end of said ejector to hold the same arrested during the movement of said handle and slide to carry the upper end of said ejector against the piece of goods to be sold, said chute having an opening therein and a deflector pivoted in a slot above said opening and having a shoulder normally standing in the path of the coins and a finger to project upwardly when the deflector is turned on its pivot by pressure applied against said shoulder; substantially as set forth.

13. In a coin-controlled vending machine having a coin-slot plate and a holder for the goods to be sold, a slide below said plate, an exposed handle connected with said slide, a goods-ejector connected with said slide, a tiltable coin-receiver adapted to receive the coins fed to the machine and to be thereby tilted in the path of the ejector for rendering the latter operable when said handle is actuated, a chute for directing the coins from the coin-slot to said receiver, and a latch for normally holding said receiver stationary and operable by a coin fed to the machine for freeing said receiver; substantially as set forth.

14. A coin-controlled vending machine comprising an upper part containing a tray for holding the stack of goods to be sold, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a coin-slot-plate above said chamber and having side-bars adapted to enter grooves in the sides of said cabinet, a slide mounted in grooves in said side bars, an exposed handle connected with said slide, a concealed coin-chute connected with said handle and a goods-ejector connected with said slide, combined with a tiltable coin-receiver secured below said chute to receive at one end the coins therefrom and have its other end thereby tilted upwardly in the path of said ejector for rendering the latter operable when said handle is pulled out; substantially as set forth.

15. A coin-controlled vending machine comprising an upper part containing a tray for the stack of goods to be sold and having a removable front, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a coin-slot-plate above said chamber and having side bars adapted to enter grooves at the sides of said cabinet, a vertically movable plate for locking said coin-slot-plate in position, and means connected with the lower end of said removable front for securing said locking plate in position; substantially as set forth.

16. A coin-controlled vending machine comprising an upper part containing a tray for the stack of goods to be sold and having a removable front, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a coin-slot-plate above said chamber and having side bars adapted to enter grooves at the sides of said cabinet, a slide having a handle and carrying a goods-ejector supported in said side-bars, and means for locking said coin-slot-plate in position by the securing of said removable front; substantially as set forth.

17. A coin-controlled vending machine comprising an upper part containing a tray for holding the stack of goods to be sold, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a hinged door for said chamber, a slidable frame at the top of said chamber affording the coin-slots, means for locking said frame stationary when the machine is in use, and mechanism for locking and free-

ing said hinged door, said mechanism comprising a latch adapted to automatically lock the door at its inner side when it is closed, and means for freeing said latch from the door by a movement of said slidable frame when the latter is free to move; substantially as set forth.

18. A coin-controlled vending machine comprising an upper part containing a tray for holding the stack of goods to be sold, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a hinged door for said chamber, a slidable frame at the top of said chamber affording the coin-slots, means for locking said frame stationary when the machine is in use, and mechanism for locking and freeing said hinged door, said mechanism comprising a latch adapted to automatically lock the door at its inner side when it is closed, and means operable by a sliding movement of said slidable frame, when it is free to move, for freeing said latch and pushing said door open; substantially as set forth.

19. A coin-controlled vending machine comprising an upper part containing a tray for holding the stack of goods to be sold, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a hinged door for said chamber, a slidable frame at the top of said chamber affording the coin-slots, means for locking said frame stationary when the machine is in use, and mechanism for locking and freeing said hinged door, said mechanism comprising a latch-plate secured to the inner side of the door, and a pivoted bar concealed within said chamber and having a hook at one end to engage said latch and a member at the other end standing in rear of said slidable frame, whereby on the inward movement of said frame said bar will be turned to free the door; substantially as set forth.

20. A coin-controlled vending machine comprising an upper part containing a tray for holding the stack of goods to be sold, a lower part forming a chamber to contain the machine's operative mechanism and receive the coins, a hinged door for said chamber, a slidable frame at the top of said chamber affording the coin-slots, means for locking said frame stationary when the machine is in use, and mechanism for locking and freeing said hinged door, said mechanism comprising a latch-plate secured to the inner side of the door and having an inclined lower edge, and a pivoted bar concealed within said chamber and having at its forward end a hook member to engage said latch-plate when the door is in closed position and an arm member to move against the inclined edge of said latch-plate for forcing the door open when the said bar is turned to free the hook from said plate, the rear end of said bar being projected in the path of said slidable frame, so as to be actuated thereby when said frame is moved inwardly for operating said bar to unlock the door and force it open; substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 2nd day of July A. D. 1908.

ELIJAH F. SPAULDING.

Witnesses:

ARTHUR MARION,

CHAS. C. GILL.