

June 1, 1937.

H. S. BENJAMIN

2,082,533

COIN CONTROLLED VENDING MACHINE

Filed July 12, 1935

4 Sheets-Sheet 1

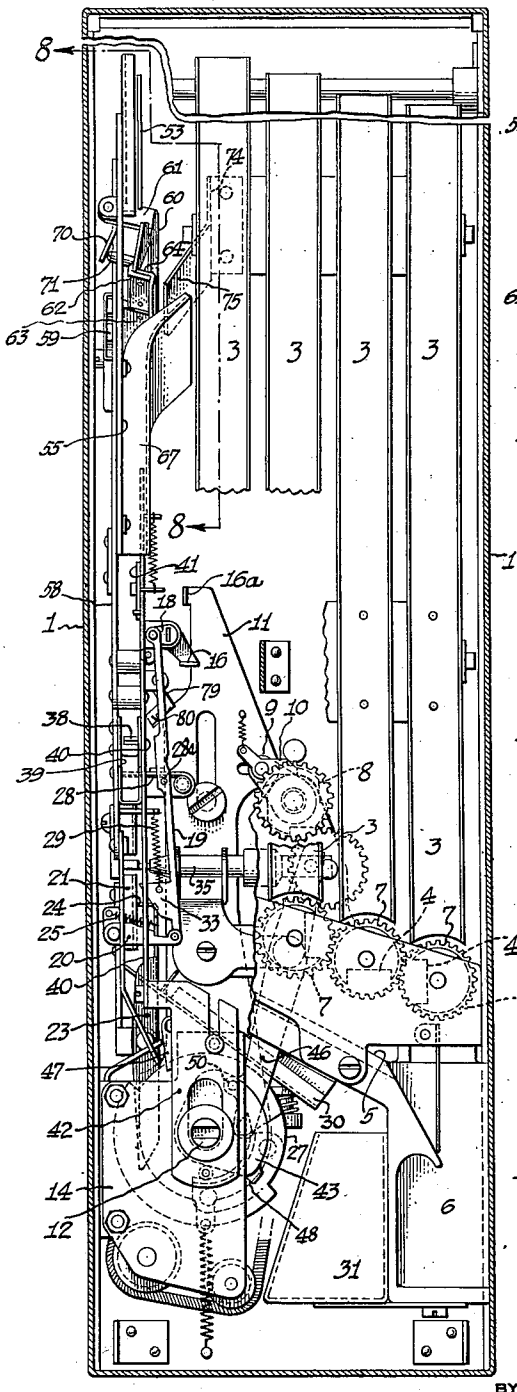


Fig. 1.

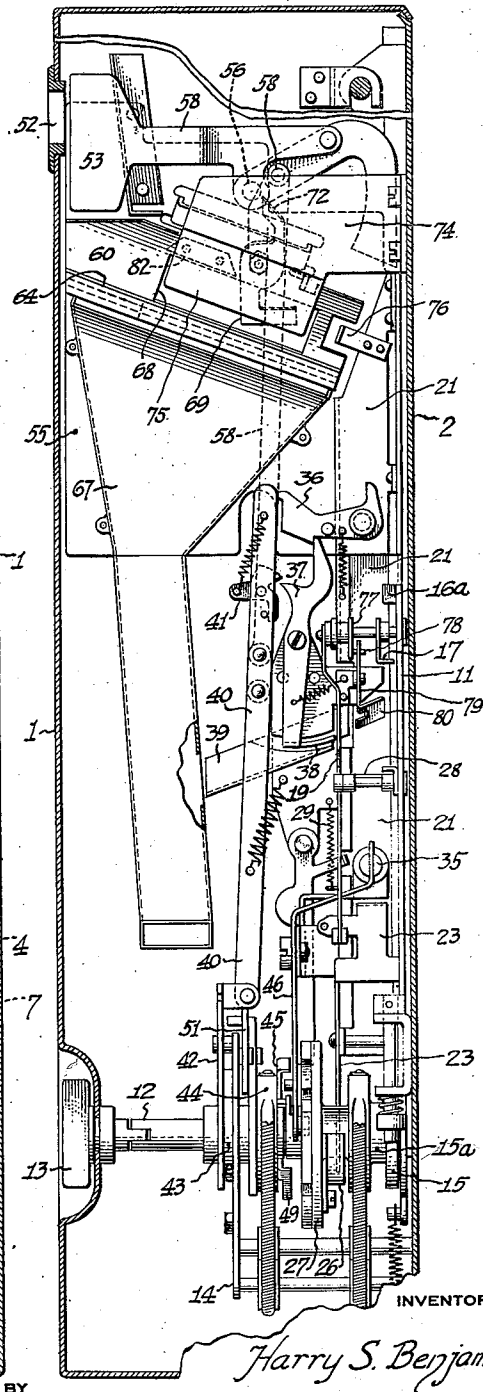


Fig. 2.

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4 Sheets-Sheet 2

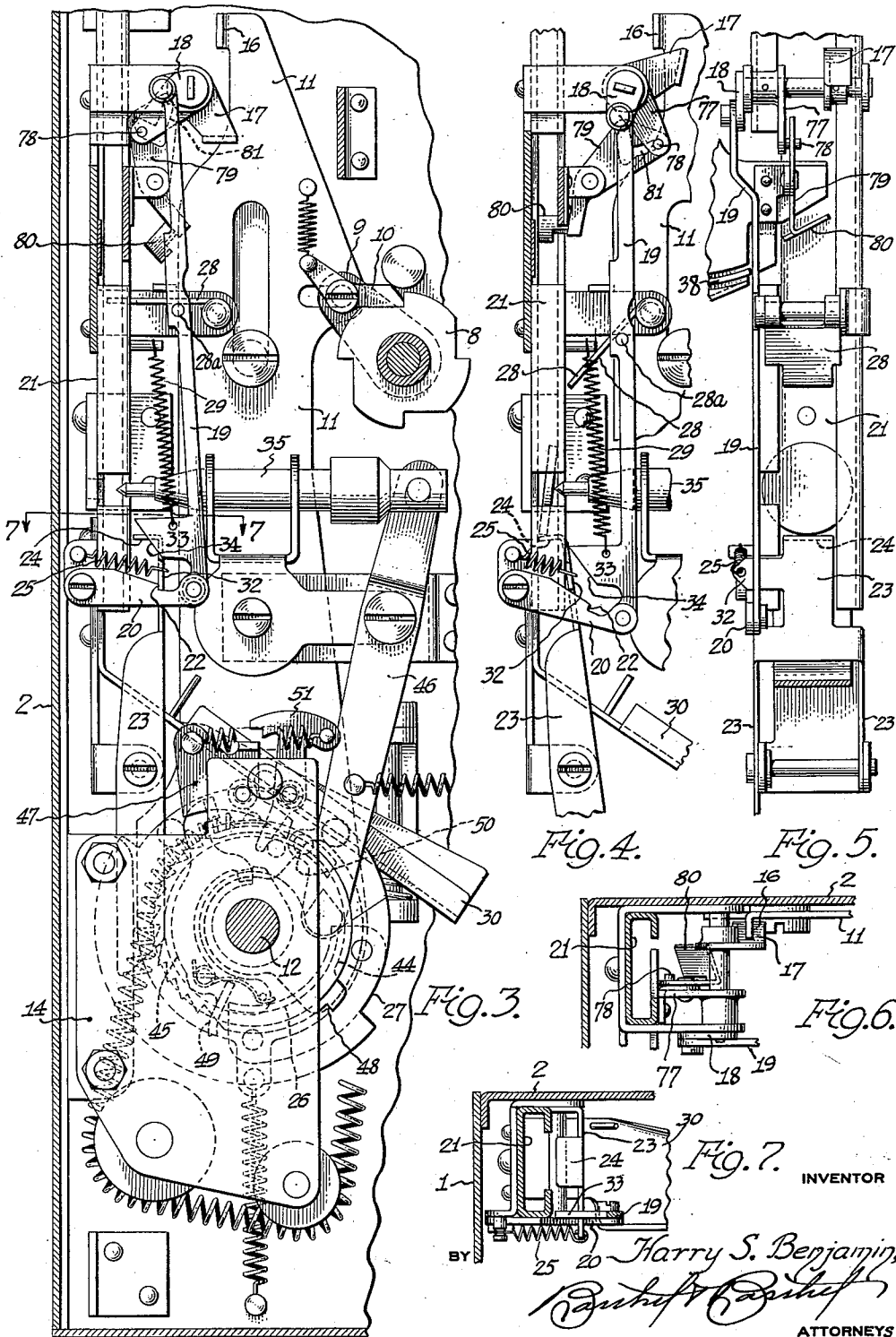


Fig. 4.

Fig. 5.

Fig. 3.

Fig. 6.

Fig. 7.

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4 Sheets-Sheet 3

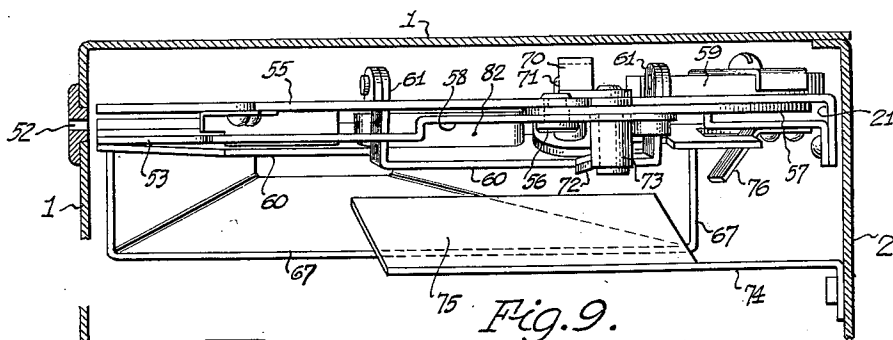


Fig. 9.

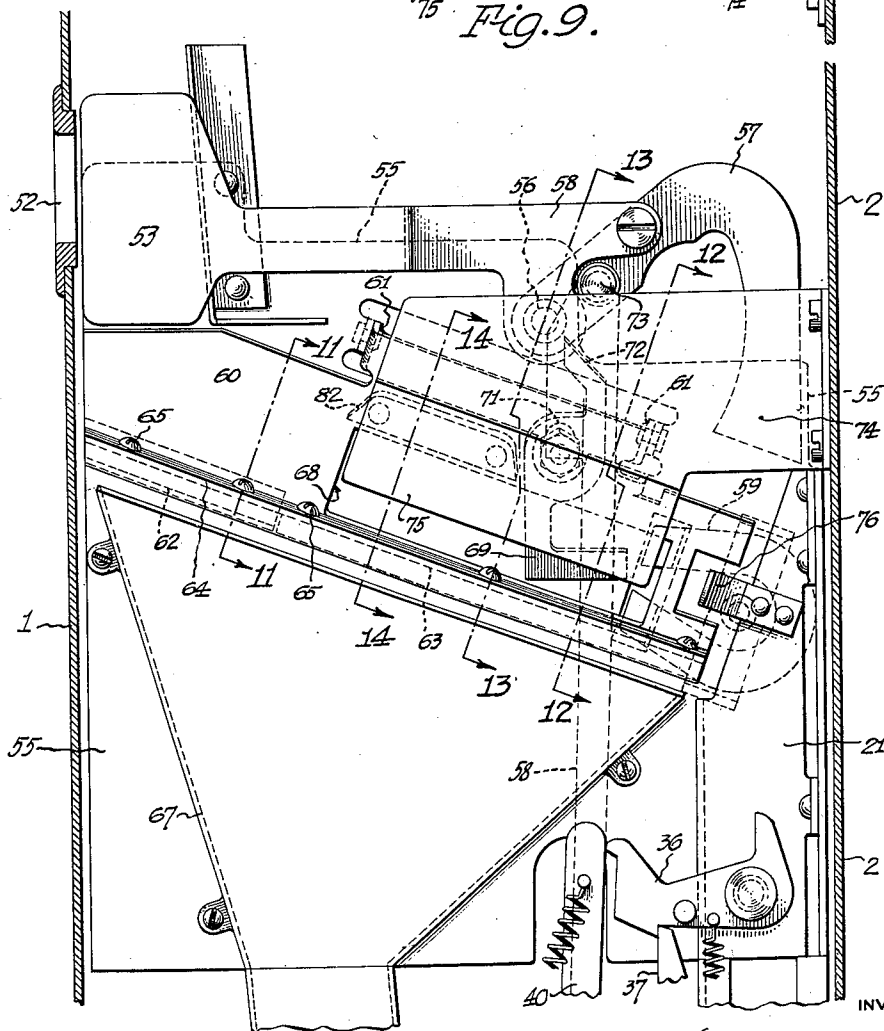


Fig. 8.

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COIN CONTROLLED VENDING MACHINE

Filed July 12, 1935

4 Sheets-Sheet 4

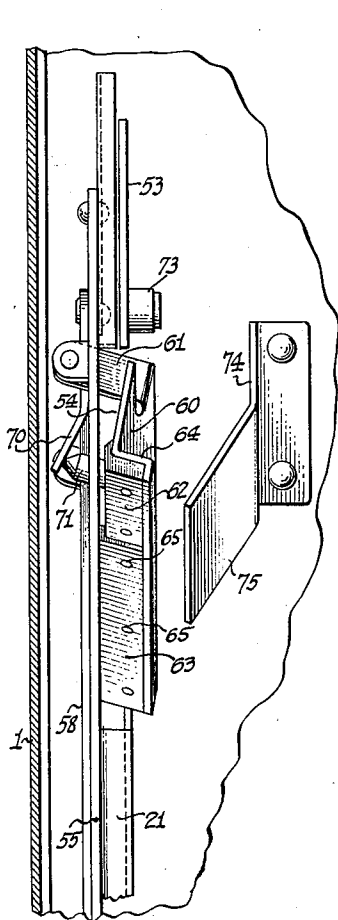


Fig. 10.

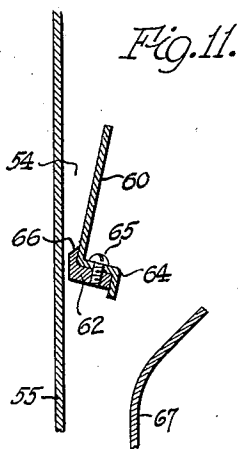


Fig. 11.

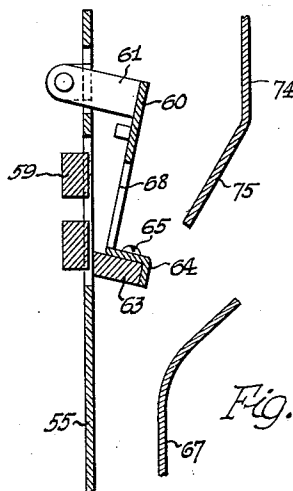


Fig. 12.

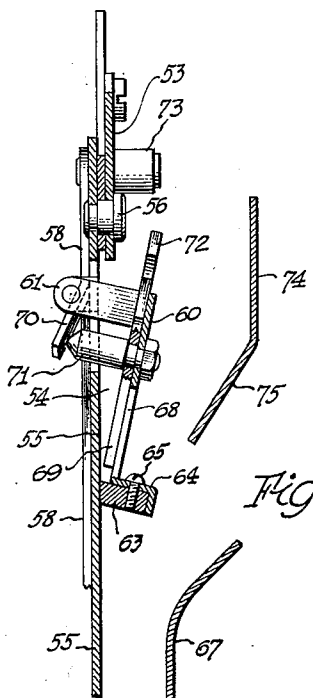


Fig. 13.

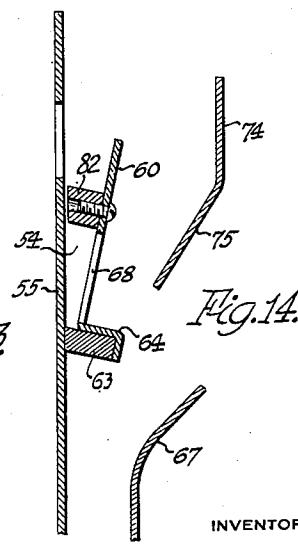


Fig. 14.

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UNITED STATES PATENT OFFICE

2,082,533

COIN CONTROLLED VENDING MACHINE

Harry S. Benjamin, Utica, N. Y.

Application July 12, 1935, Serial No. 31,068

6 Claims. (Cl. 194—97)

This invention relates to a machine for vending merchandise, and more particularly to that class of machines shown and described in my Patent No. 1,851,081 of March 29th, 1932.

5 An object of the present invention is to provide a machine of such class, with means for clearing the coin slot and passage leading therefrom, of paper or other material which may be inserted through such slot in an endeavor to operate the machine without inserting a good coin or in an endeavor to put the machine out of commission. A further object is to provide such a machine with means whereby a coin or other article which may become lodged in a coin chute of the machine, will be forcibly dislodged; and also to provide means whereby, should the operator of the machine insert a coin to operate the machine and immediately thereafter insert another coin, the second coin will be returned to him.

20 It is also an object to provide an arrangement of latch mechanism for preventing the operation of the machine to deliver merchandise, when other than a good coin is inserted, and which latch mechanism will be positively reset after release, by power applied in operating the machine; and further, to provide an arrangement of coin chute whereby a coin or substitute therefor in passing therethrough, will be subjected to test as to its thickness, diameter and weight, and also as to the kind of metal from which it is made, means being provided to positively eject any spurious coin or slug from said chute.

35 A further object is to provide certain refinements in the construction and arrangement of the several parts and to provide certain other new and useful features, all as hereinafter set forth and more particularly pointed out in the appended claims, reference being had to the accompanying drawings wherein;

40 Figure 1 is a front elevation of the interior mechanism of a machine illustrative of an embodiment of the invention, with the machine casing in section and parts of said mechanism broken away to disclose parts lying beyond;

45 Fig. 2 is a vertical section substantially at right angles to that of Figure 1 with parts broken away and in section;

50 Fig. 3 is an enlarged detail view of a portion of the mechanism shown in the lower left hand corner of Figure 1;

55 Fig. 4 is an enlarged detail view of latch mechanism and adjacent parts shown in Figure 3 with said latch mechanism in released position;

Fig. 5 is a detail view taken at right angles to that of Figure 4;

Fig. 6 is a sectional detail looking down upon the upper end of Figure 3;

Fig. 7 is a sectional detail, substantially upon the line 7—7 of Figure 3;

Fig. 8 is an enlarged section substantially upon the line 8—8 of Figure 1;

Fig. 9 is a plan view of Figure 8;

Fig. 10 is a detail showing the mechanism shown in Figures 8 and 9 and with parts omitted; and

Figs. 11, 12, 13 and 14 are sections taken substantially upon the lines 11—11, 12—12, 13—13 and 14—14 of Figure 8, illustrative of the construction and arrangement of the several parts shown in section.

This machine comprises a suitable casing 1 having a detachable back 2 upon which much of the internal mechanism of the machine is mounted, there being mounted upon said back, a plurality of rectangular merchandise chutes 3 from the lower open ends of which chutes, the merchandise in packages, is removed, one package at a time by means of feed blocks 4, indicated in dotted lines in Figure 1 and is discharged into a single chute 5 leading to a delivery cup 6. These blocks are rotated through the medium of gears 7 connected to said blocks and intermeshed for simultaneous rotation, motion being transmitted to said gears through idler gears and a ratchet 8 connected with one of said idlers, which ratchet is turned by means of an arm 9 mounted for free turning movement independently of said ratchet and carrying a pawl 10 to engage said ratchet, said arm being connected to a vertically slidable plate 11 connected to said arm by a pin on said arm engaging a slot in said plate. To actuate this slide plate 11, a power shaft 12 has a bearing at its rear end in the wall 2 and extends through a vertical guide slot in the lower end of said plate, into a recess in the front wall of the casing, where it is provided with a button 13 for turning said shaft by hand, said forward end of said shaft being supported adjacent its forward end in a bearing upon a frame plate 14 connected to and rigidly supported from the rear wall 2 of the casing. Mounted upon this shaft 12 to turn thereon independently thereof is a sleeve 15a (Figure 2) having a cam member 15 arranged to engage a pair of pins or studs on said plate, arranged, one at each side of the vertical guide slot in said plate, said plate being normally held in raised position by the engagement of said cam beneath one of said studs. Upon rotation of said cam, said plate

will descend, provided it is not held against such movement by latch mechanism hereinafter described, thereby swinging the arm 9 to engage the pawl 10 with the next notch of the ratchet 8, so that upon further turning of said cam in the same direction, said plate will be positively raised by said cam coming into engagement with the other stud and rotate the said ratchet to effect the delivery of a package from some one of the several chutes or magazines 3, the construction, arrangement and operation of the mechanism thus far described being substantially the same as shown and described in my said Patent No. 1,851,081.

To control the downward movement of said actuating plate 11, so that, if other than a good coin be inserted, the plate will be stopped to prevent delivery of merchandise, the upper end of said plate is provided with a laterally extending lug 16 to engage a stop member 17 pivotally supported to be swung into and out of the path of said lug 16 by means of a crank arm 18 to which the upper end of a bar 19 is pivotally attached. The lower end of this bar 19 is pivotally connected to the free end of a swinging arm 20 pivotally supported at its opposite end upon a coin chute 21 outside of said chute, which arm is formed with a notch or shoulder 22 to engage a coin stop arm 23 having a laterally bent end 24 adapted to be projected through a side opening in said chute across the path of a coin passing down said chute when said stop arm 23 is released from said shoulder 22 and said arm is turned upon its pivot by means of a spring 25 tending to swing said stop arm toward said chute and normally hold it in latched position against said shoulder. To swing said coin stop arm 23 against the action of said spring 25 and bring it into latched or normal position with its end 24 held retracted from said coin chute, a semi-circular flange 26 is secured to one side of a circular head 27 (Figure 2) on said sleeve 15a to engage the lower end of said arm 23 when said sleeve and head are rotated as hereinafter described.

To release the arm 20 from engagement with the stop arm 23, a trip plate 28 is pivotally supported at one end intermediate the ends of the bar 19 to extend transversely thereof and above a laterally extending pin 28a on said bar with its free end extending through an opening in the side of said coin chute 21, so that when a coin passing down said chute strikes said trip plate, said plate will be swung thereby against said pin therebeneath with sufficient force to move said bar 19 downwardly against the action of a light coiled spring 29 which is of just sufficient strength to overbalance the weight of said bar and attached parts, and unlatch said arm 20 from engagement with the coin stop arm 23, the end 24 of which will be immediately projected across the path of the coin passing down said chute and stop and support said coin until such time as the stop is withdrawn as hereinafter described, when it will pass on down said chute 21 and thence into an inclined chute 30 leading to a coin box 31 at the bottom of the casing. This downward movement of the bar 19 swings the stop member 17 out of the path of the lug 16 on the plate 11, so that said plate may move on downwardly, provided it be released and actuated as hereinafter described, all of the elements so far described and their operation being substantially the same as set forth in my hereinbefore mentioned patent.

The latching up of the bar 19 and stop mem-

ber 17 into normal position, as shown in Figures 1 and 3, is accomplished by a turning of the head 27 which brings its semi-circular flange 26 into engagement with the lower end of the coin stop arm 23 at the proper time, thus swinging said arm into position to engage a laterally extending lug 32 thereon, with the shoulder or notch 22 on the arm 20. As shown in my prior patent, the spring 29 is relied upon to raise said bar and arm, but as this spring is necessarily weak, due to the fact that it must yield under the impact of a coin upon the trip plate 28 in passing down the chute 21, in order to release the arm 20 from engagement with the stop arm lug 32, said spring might not function to raise said bar 19 and arm 20 as it should but slightly overbalance the weight of said arm and bar, and therefore in the present construction, said bar 19 is formed with a laterally extending lug 33 of considerable width, adjacent the pivotal attachment of said bar to said arm 20, and this lug is formed with an inclined end edge 34 adapted to be engaged by the upper edge of the lug 32 on the stop arm 23 when the upper end of said arm is positively swung toward said bar by the engagement of the flange 26 with its lower end. The bar and arm 20 are thus positively raised regardless of the operation of the spring 29, due to the downward inclination of the end of this lug 33 into engagement with which said lug 32 comes, when said stop arm is so swung.

While the coin, slug or washer which has been inserted in an endeavor to operate the machine, is supported by the stop 24, means is provided for testing the coin or other member inserted, said means comprising a plunger 35 having an end adapted to be projected through an opening in the chute 21 into engagement with the coin so supported, said plunger being projected endwise in timed relation to the movement of other parts of the mechanism, in the manner as fully set forth in my said patent above mentioned, such coin testing mechanism forming no part of the present invention.

Further, as fully disclosed in said patent, means is provided for returning a coin to the vendee should he insert a coin and no merchandise be delivered by the machine due to the fact that one of the magazines had become empty, but such mechanism forms no part of the present invention other than as it cooperates therewith and with the other parts of the machine to provide in a machine of this character, a combination of cooperative mechanisms to provide for all contingencies in the operation of such a machine, such coin returning mechanism being shown only in part in the present application and as including a dog 36 pivotally attached to one side of the coin chute 21 to engage the upper end of a lever 37 pivotally supported intermediate its ends with its lower end provided with a laterally extending blade 38 curved concentric with the pivot of said lever, to be projected by the swinging of said lever, into the path of a coin passing down said chute and deflect said coin from said chute into the upper end of a chute 39 which discharges into the merchandise chute 5, said lever 37 being operated through the medium of means (not shown) operated by the descent of merchandise in said chute, and released from said dog 36, by mechanism operated by the turning of the said power shaft 12 and including a longitudinally reciprocable operating bar 40, which bar carries a dog 41 to engage and hold said lever 37 with its blade 38 retracted from said

chute until the power shaft 12 is rotated, causing a downward movement of said bar 40, which movement will release said lever 37 so that its blade will be immediately projected across said chute to deflect the coin just inserted and return it to the operator. Said deflector blade will remain in this position until re-set as fully set forth in said patent.

To operate the bar 40, a plate 42 is attached to the lower end of said bar, said plate being formed with a longitudinal slot through which the shaft 12 projects and on said shaft adjacent said plate is a cam 43 to engage pins (not shown) on said plate and raise or lower said plate and bar by the turning of said shaft, and to transmit motion from said power shaft 12 to said sleeve 15a to turn the same in one direction and operate the delivery mechanism after the insertion of the proper coin, a circular head indicated at 44 in Figure 2 is secured to said shaft 12, and pivotally attached to one side of said head, is a pawl indicated at 45 (Figures 2 and 3), to engage in one direction of rotation, said sleeve and rotate the same, said pawl being controlled in its operation by the coin detecting mechanism which includes the plunger 35 arranged so that if a substitute for a good coin be inserted, such substitution will be disclosed by the movement of said plunger which movement will operate through the medium of a lever 46 to prevent the turning of said sleeve 15a and the delivery of merchandise, all of the foregoing coin testing mechanism and its construction and operation, being fully set forth in my said patent, the same operating whenever a spurious coin or a substitute for a coin is inserted, to lock the merchandise delivery mechanism against operation.

Should the operator, after the insertion of a good coin, turn the handle 13 through but a portion of the movement required to complete the delivery operation, and should he then release the handle, he would receive nothing for his coin if the parts be permitted to be returned automatically to normal position. As shown and described in my said patent, to prevent such retrograde movement after the turning of said sleeve 15a has been started, that is after the down-stroke of the plate 11 has begun, a portion of the periphery of said head 44 is formed with a series of ratchet teeth to be engaged by one end of a dog 47 (Figure 3), the opposite end being adapted to engage a tooth 48 on the head 44 when said head has reached the limit of its forward turning movement, and has reached a position where a tail 49 is just brought into engagement with a pin 50 on the lever 46 to disconnect the sleeve and shaft at the end of the delivery stroke, a latch member 51 being provided to engage said dog 47 and insure the latching down of said dog in engagement with said ratchet after a certain degree of turning movement of said head, the parts being arranged to cooperate and function substantially as set forth in my said patent.

Leading from a coin slot 52 in the front wall of the casing, is a chute, one side wall of which is formed by a swinging plate 53 (Figures 2 and 8) and the lower end of which chute opens into the upper end of an inclined connecting chute 54 which opens at its lower end into the upper end of the chute 21, one side of which chute 54 is formed by a flat plate 55 which also forms the side of the entrance end opposite the swinging plate 53. This plate 53 is formed with an arm 75 extending toward the rear of the casing and this

arm is pivotally supported at 56 intermediate its ends and pivotally connected adjacent said pivot, to a sweep 57 pivotally supported by said pivot 5 to swing in timed relation to other movable parts of the machine, by a bar 58 which is secured at its lower end to the upper end of the operating bar 40 which is attached to the upper end of the plate 42 to be operated thereby, said bar 58 being pivotally attached to said sweep 57 adjacent but laterally of the pivot 56 of said sweep, which sweep is located so that its free end will sweep across the poles of a magnet 59 supported with its poles projecting into the lower end portion of the chute 54 adjacent the path of a coin passing down said chute and sweep off any slug which is attracted and held by said magnet, this magnet detector and sweep being set forth and shown in my said patent.

Because of the connection of said plate 53 with said sweep 57, every time the machine is operated by its power shaft 12, this plate which forms a portion of the coin chute adjacent the slot 52, will be swung. Therefor should someone attempt to operate the machine or to put it out of commission by stuffing paper or other material into the chute through said slot, this accumulation of material will be released when said plate 53 is swung, and will fall laterally from the chute into the casing where it will do no harm.

To further insure against the operation of the machine by a spurious coin or substitute for a coin, the coin chute 54 is constructed somewhat similar to the manner shown in my said Patent No. 1,851,081 but including means whereby the same may be readily changed to provide for coins of different diameters and whereby any coin or substitute which becomes lodged in said chute, will be forcibly ejected, upon operation of the machine. To secure these results, the side of said chute portion 54 opposite the plate 55 is formed by a pivotally supported plate 60, said plate being pivotally attached at its upper edge to the plate 55 by means of laterally extending ears 61 projecting laterally from the upper edge of said plate, so that the lower edge of said plate will be swung by gravity toward the adjacent face of the plate 55 with said plate 60 in a downwardly inclined position. The bottom of this chute 54 is formed by two strips 62 and 63 detachably secured to the lower edge of said plate 60 by forming said edge portion of said plate with an offset channel 64 within which said strips 62 and 63 are detachably secured in any suitable manner as by screws 65 so that these strips may be readily removed and others of a different shape or width substituted therefor. It will be noted that the strip 63 is of slightly greater width than the strip 62 and is adapted to abut at its edge, the back plate 55 of the chute, it being normally held thereagainst by the gravitation of the plate 60 forming the opposite or front side of said chute, and that, therefore the narrower strip 62 will be held with its edge spaced a slight distance from the face, of said plate 55 to form a slot in the bottom of said chute of just a little less width than the thickness of a good coin adapted to operate the machine. This strip 62 is located at the upper end of the chute 54 directly below the short vertical chute leading from the slot 52 and one side of which is formed by the swinging plate 53. Therefore a coin inserted through said slot will fall directly upon the projecting edge 66 of said strip 62, the upper face of which edge is beveled away from said plate 60 and downwardly, so that a coin or slug falling thereon will be tilted

laterally and directed toward the slot between the edge of said strip 62 and the face of said wall or plate 55. As this slot is of slightly less width than the thickness of the coin by which the machine as arranged, is adapted to be operated, any thin coin or slug will pass through said slot and fall into the upper end of a slug chute 67 located therebelow. The standard coin adapted to operate the machine, being of greater thickness than the width of said slot, or any slug of greater thickness, will roll on down said inclined chute 54 but in a tilted position toward the plate 60, and an elongated opening 68 is provided in said plate, which opening is of such width that a slug rolling down this chute upon the projecting edge portions of said strips, and of less diameter than that of the standard coin, will not span this opening, but will tilt laterally and fall out through this opening into the upper end of the slug chute 67. With this arrangement of detachable strips 62 and 63 forming the bottom of the coin testing chute 54, these strips may be readily removed and others substituted therefor when it is desired to operate the machine with coins of another denomination having a different thickness or diameter, or both.

To retard a coin or slug rolling down said chute 54 so that if it be not of the standard diameter, it will be retarded opposite the opening 68 sufficiently to give it time to fall laterally through said opening, or if a slug, light in weight but of standard thickness and diameter be inserted, a flap or swinging stop member 69 is pivotally attached to the plate 60 within said chute adjacent the lower end of the opening 68 therein, to be swung by gravity across said opening within the path of a coin or slug rolling down the chute. If the slug be light in weight, it will not have sufficient inertia to swing this stop out of the way and pass on down the chute, but will be stopped thereby, and later will be discharged by the swinging of the plate 60 as hereinafter described.

To swing the plate 60 on its pivotal support away from the plate 55 and thus open the bottom of this chute portion 54 to allow any slug or coin caught therein to drop out, the bar 58 secured at its lower end to the upper end of the operating bar 40, is provided with a cam lug 70 to engage a stud 71 projecting from said plate 60 across said chute and through an opening in the plate 55. Therefore upon each down movement of said bar 58 whenever the handle 13 is turned, said lug 70 will be brought into engagement with the projecting end of said stud 71 on said swinging plate 60, and said plate will be swung away from the plate 55, opening the bottom of said coin testing chute 54 to permit any slugs or coins caught in said chute, to fall into said slug chute 67.

To positively swing the said stop member 69 longitudinally of the chute, from across said opening 68 in the wall of the chute, said member 69 is formed at its upper end above its pivotal support, with a cam projection 72 adapted to be engaged by a stud 73 which is the pivot for attaching the bar 58 to the sweep 57, and therefore each time said bar descends to engage its lug 70 with said stud 71 and swing the plate 60 outwardly, said stud 73 is brought into engagement with the cam 72 and said stop member 69 is positively swung from across the opening 68, so that an ejector plate 74 stationarily secured at one end to the wall 2 of the casing and having a blade portion 75 supported thereby in the path of swinging movement of said plate 60, will be

projected through said opening 68 by the upward swinging of said plate 60, and any slug or coin which may have become lodged upon the ledge formed by the strip 63, will be positively pushed off and fall into the chute 67. The swinging of the plate 60 and the swinging of the stop member 69 being both effected by the down movement of the bar 58, these swinging movements occur in proper timed relation so that said stop member will be swung from across said opening 68 before said plate 60 has been swung far enough to enter the ejector blade 75 through said opening.

To prevent any coin rolling down the chute 54 as the side 60 of said chute swings, from missing the upper end of the coin chute 21, a deflector arm 76 is secured to the upper end of said chute 21 and projects a short distance into the lower end of the inclined chute 54, said plate 60 being notched at its lower end to provide for this deflector which has a laterally bent end portion to be engaged by the coin and deflect it into the coin chute.

Should the operator insert a proper coin in the coin slot 52 and before operating the machine, should he insert a second coin, he would get nothing for one of these coins, were it not that this machine is provided with means shown in detail in Figures 3, 4 and 5 for returning to him, the second coin inserted, this means comprising a crank arm 77 secured to the same pivot shaft to which the stop arm 17 and crank arm 18 are secured, to turn therewith, said shaft being mounted in suitable bearings on a suitable bracket secured to the coin chute 21 at a considerable distance below its upper end into which the inclined detector chute 54 discharges. This arm 77 carries at its free end, a laterally projecting pin 78 to engage within a substantially L-shaped slot in the tail end of a lever 79 pivotally supported intermediate its ends outside of and adjacent said chute, and having at its opposite or lower end, a laterally extending deflector blade 80 adapted to be projected across the path of a coin passing down said chute 21, through an opening in a side wall of said chute when said lever 79 is turned by the turning of the arm 77 with the stop member 17 by the release of the latch mechanism through the medium of the first inserted coin striking the trip plate 28, as previously described. When said latch mechanism is tripped and the stop member 17 is turned thereby to the position shown in Figure 4, the lever 79 is simultaneously turned, projecting its deflector blade 80 across the path of the second coin passing down said chute. This blade is so arranged and positioned relative to the open upper end of the coin chute 39 (see Figure 2) leading laterally from said chute 21, that the second coin striking this blade will be deflected laterally into said chute 39 which leads into the slug chute 67, and therefore this second inserted coin will be returned to the operator by being delivered into the delivery cup 9.

To insure that the lever 79 will be held with its blade 80 projected into said chute 21 after said lever has been turned by the unlatching and dropping of the bar 19, one arm 81 of the L-slot in the lever 79 into which the pin 78 projects, is curved concentric with the pivot of the arm 77, and therefore impact of a coin upon the blade 80 will not tend to jar the lever and cause it to rock, withdrawing the blade from across the chute sufficiently to permit the coin to pass the blade. This curving of said slot also permits the

arm 77 to swing for a considerable distance toward latching up position, before the arm 79 will be swung, the swinging of said arm taking place during the latter part of the swing of the arm 77, and effecting a quick withdrawal of the blade 80 after the stop member 17 has been moved toward position to stop the down movement of the actuating plate 11 which effects the delivery of merchandise.

To further guard against a spurious coin from passing down the detector or testing chute 54 into the coin chute 21 and releasing the delivery machine for operation, a gauge block 82 (Figures 8 and 14) is detachably secured to the plate 60 at the inner side thereof, and this block is accurately spaced from the projecting edge portion of the strip 63, which portion forms the track or bottom of said chute upon which the coin rolls in passing down said chute, and this space between track and block is substantially the same as the diameter of the good coin which is to release the delivery mechanism, and therefore if the coin or substitute inserted is a trifle oversize in diameter, it will be stopped by said block 82, and when said side 60 of the chute is swung outwardly, this coin or substitute will drop off into the chute 67, and should it become wedged or otherwise held upon said ledge, it will be forcibly pushed off by the ejector blade 75. This block 82 may be quickly removed and another of a different dimension substituted should it be desired to operate with coins of a different diameter.

This coin detecting chute 54 therefore serves to apply several tests to the coin or substitute as it passes down said chute, a slug or coin of light weight, being stopped by the swinging stop 68, and one which is formed of a metal attracted by the magnet 59 will also be stopped, while a thin coin or slug will pass down through the slot between the strip 62 and adjacent back wall of the chute. Further, a coin of oversize in diameter will be stopped by the gauge block 82, and all coins or substitutes stopped in said chute, will be positively dislodged therefrom and fall into the return chute 67, by the ejector plate 74. There is, therefore small likelihood of any spurious member getting past these devices and into the coin chute 21, but should any do so, it will again be subjected to test by the plunger 35 which will operate to lock the delivery mechanism should the inserted piece be too thin, be of soft metal or have a center hole, all as more fully set forth in my said patent. Further, to protect the buyer against loss should all merchandise have been discharged from any one of the several magazines, the swinging deflector 38 will operate to return his coin to him, and should the operator insert a second coin before operating the delivery mechanism after the insertion of the first coin, his second coin will be returned to him by the deflector 80. A construction is thus provided to guard against all contingencies and against the possibility of operating the delivery mechanism without inserting a good coin of proper denomination, the several changes in the machine shown and described in my said patent and which changes embody the present invention, residing in the several new features, arrangement and combination of elements set forth herein and as more particularly pointed out in the appended claims.

Having thus fully described the invention, what I claim is:

1. In a vending machine, the combination with a casing, a coin chute in said casing having an

opening in one side of said chute, and merchandise delivery mechanism in said casing; of a pivoted coin stop member projecting into the path of a coin passing down said chute and swingable by impact of a coin thereagainst passing down said chute, and means operated by said delivery mechanism for positively swinging said stop member from across said opening.

2. In a vending machine, the combination with a casing, a downwardly inclined coin chute in said casing, and merchandise delivery mechanism including coin controlled means for releasing and permitting said mechanism to operate; of a member forming a side wall of said chute and formed with an opening, an ejector adapted to project through said opening, a coin stop member pivotally supported to swing within said chute longitudinally thereof and across said opening, and means operatively connected with said delivery mechanism, for swinging said stop member from across said opening to permit said ejector to enter said chute through said opening and eject a coin lodged in said chute.

3. In a vending machine, the combination with a casing, a downwardly inclined coin chute in said casing, and merchandise delivery mechanism including coin controlled means for releasing said mechanism to operate; of a pivotally supported member forming a side wall of said chute and formed with an opening, a stop member pivotally supported upon said swinging member to swing across said opening therein, means operatively connected with said delivery mechanism for positively swinging said stop member from across said opening, means for swinging said chute member laterally outward of said chute, and a fixed ejector member adapted to project through said opening when said member is swung laterally and said stop member is swung from across said opening to eject any coin or substitute therefor lodged in said chute.

4. In a vending machine, the combination with a casing, a downwardly inclined coin chute in said casing, and merchandise delivery mechanism including coin controlled means for releasing and permitting said mechanism to operate; of a fixed wall forming one side of said chute, a plate forming the other side wall of said chute, said plate being pivotally supported adjacent its upper edge for swinging movement laterally of said chute and provided adjacent its lower edge with a projecting ledge spaced throughout a portion of its length only from said fixed wall and forming the bottom of said chute, said space permitting the escape of thin coins or slugs, means within said chute above and spaced from said ledge to gauge coins rolling down said chute and stop those of greater diameter than the distance between said means and ledge, said plate being also formed with an opening through which coins of small diameter may fall laterally from said chute, a coin stop member pivoted to swing within said chute across said opening, means operated by said merchandise delivery mechanism for swinging said coin stop from across said opening, an ejector member adapted to project through said opening when said plate is swung and eject a coin stopped in passing down said chute, and means for swinging said plate in timed relation to the operation of said delivery mechanism.

5. In a vending machine, the combination with a casing, and merchandise delivery mechanism in said casing including coin controlled means for controlling the operation of said delivery

mechanism; of an inclined coin detecting chute including a plate forming a side wall of said chute, and formed with an offset channel along its lower edge, a pair of strips placed end to end
 5 in said channel, one of said strips being of slightly greater width than the other and together forming a ledge projecting laterally from said plate with a limited space between said narrow strip and opposed wall of said chute for
 10 the escape of thin slugs, said strips being detachable from said channel, a gauge block on said plate and spaced from the bottom of said chute to accurately gauge coins rolling down said chute, said plate being formed with an open-
 15 ing through which coins of small diameter may fall laterally in passing down said chute, a coin stop in said chute pivoted to swing across said opening and means operated by said delivery mechanism for swinging said coin stop from
 20 across said opening and moving said plate to dislodge a coin lodged in said chute.

6. In a vending machine, the combination with a casing, and merchandise delivery mechanism including coin controlled mechanism for con-
 25 trolling the operation of said delivery mechanism; of a downwardly inclined coin chute in

said casing including a pivotally supported plate forming a side wall of said chute and provided with a laterally projecting ledge along its lower edge to engage the opposite wall of said chute and form a bottom for said chute down which
 5 coins are adapted to roll, said plate having an opening, a stop member pivotally supported within said chute to hang downwardly therein across said opening in the path of coins rolling down
 10 said chute, said member being adapted to be swung by the impact of a heavy coin thereagainst and being adapted to stop a coin of light weight, a bar operatively connected with
 15 said delivery mechanism to be operated thereby, said bar being adapted to engage and swing said stop member upon downward movement of said bar, and means on said bar to swing said plate
 20 upon downward movement of said bar, a second chute extending downward from the lower end of said inclined chute, and a fixed deflector arm at the lower end of said inclined chute and piv-
 25 oted side plate thereof to deflect coins into the open upper end of said vertical chute, the lower end of said plate being notched to receive said deflector arm.

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