

Nov. 24, 1925.

1,562,771

O. D. JENNINGS
COIN CONTROL APPARATUS

Filed Dec. 1, 1924

3 Sheets-Sheet 1

Fig. 1.

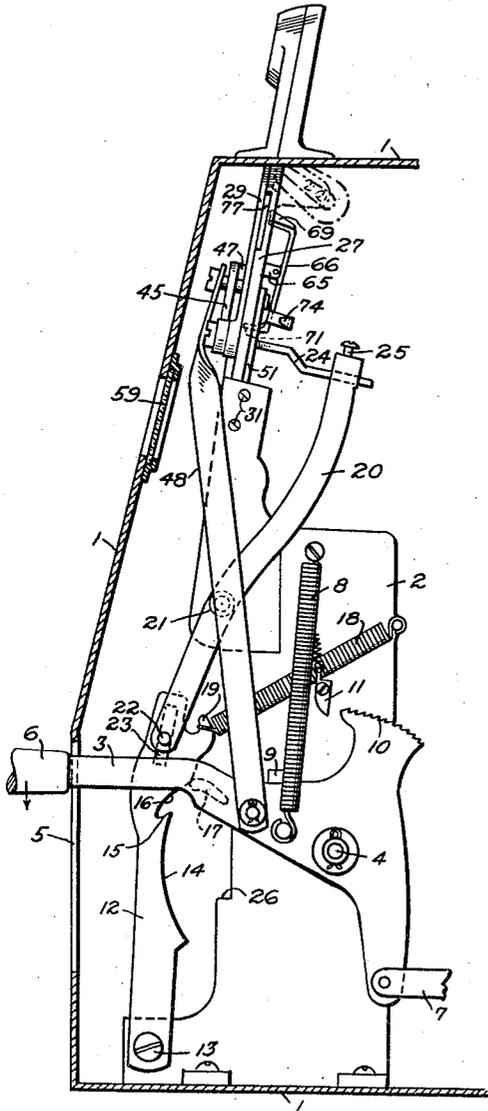
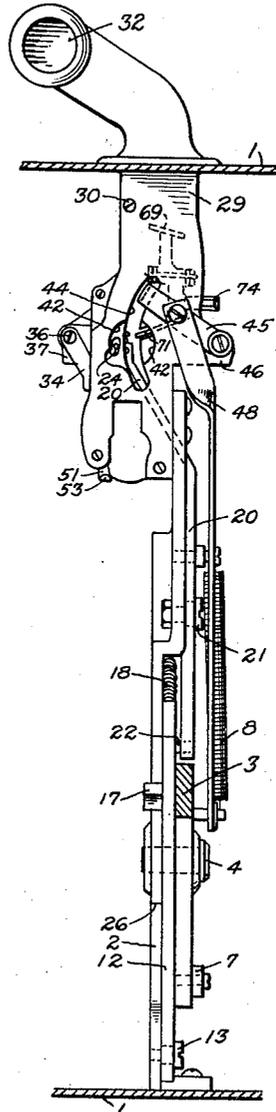


Fig. 2.



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Fig. 3.

Fig. 4.

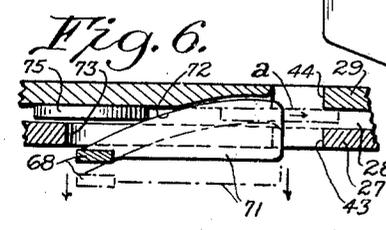
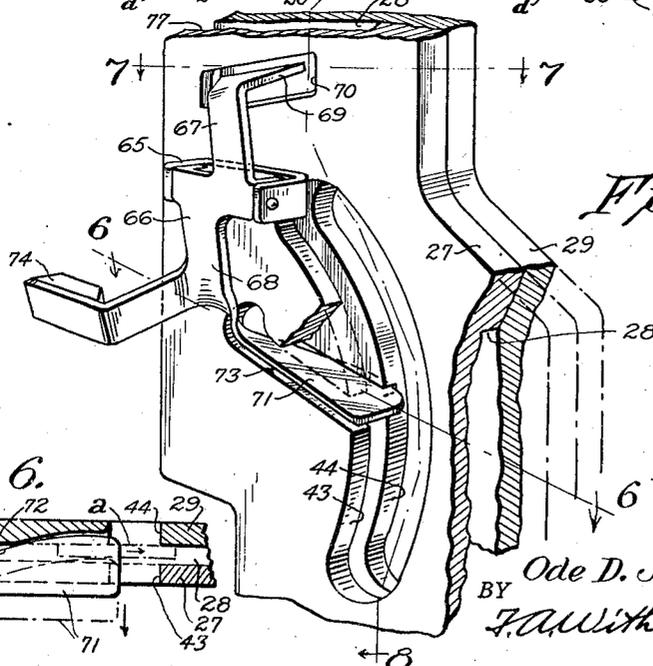
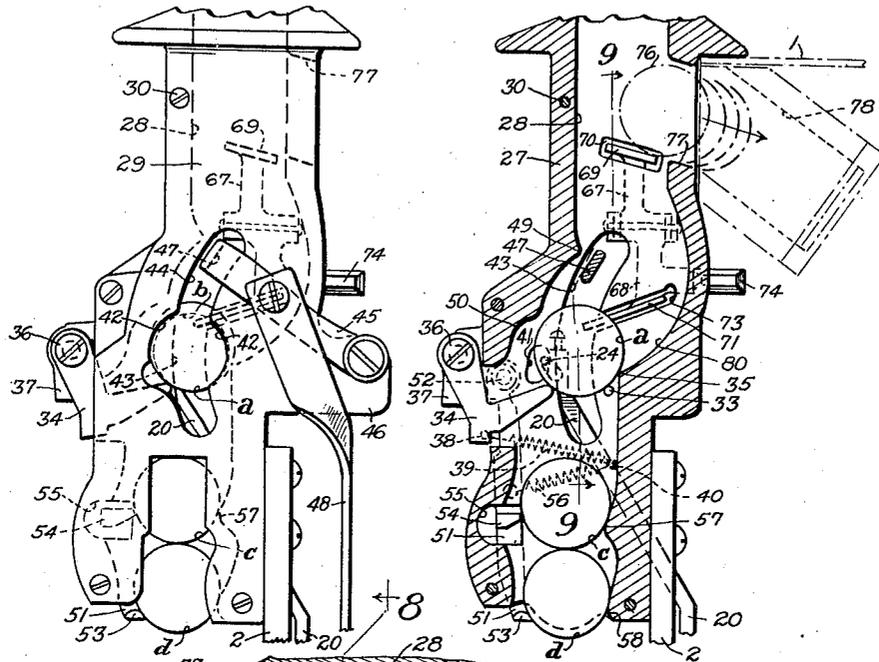


Fig. 5.

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3 Sheets-Sheet 3

Fig. 7.

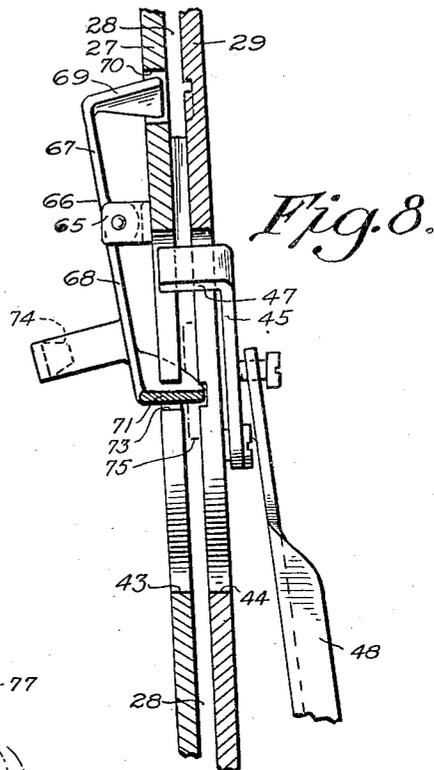
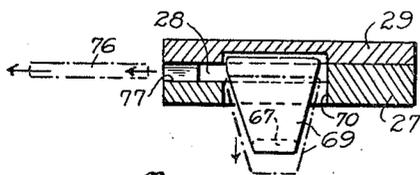


Fig. 8.

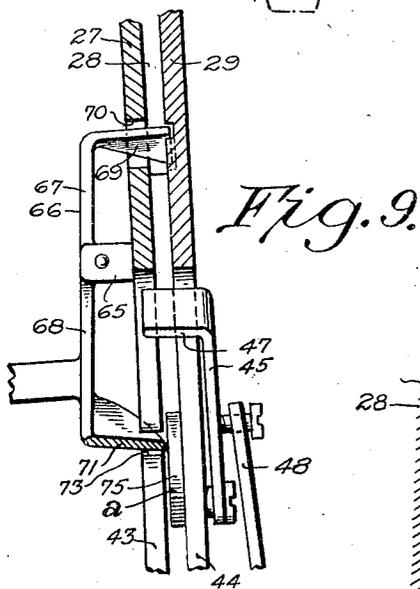


Fig. 9.

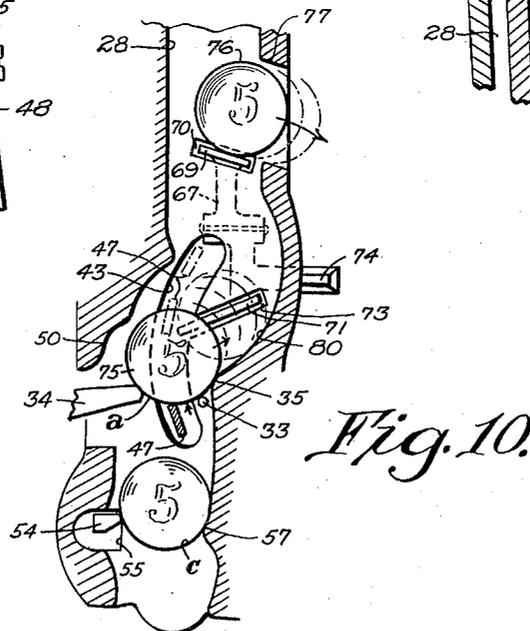


Fig. 10.

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UNITED STATES PATENT OFFICE.

ODE D. JENNINGS, OF PALATINE, ILLINOIS.

COIN-CONTROL APPARATUS.

Application filed December 1, 1924. Serial No. 753,218.

To all whom it may concern:

Be it known that I, ODE D. JENNINGS, a citizen of the United States, residing at Palatine, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coin-Control Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a coin controlled apparatus and has for its object to provide a construction more efficient in use than those heretofore proposed.

With this and other objects in view the invention consists in the novel details of construction and arrangements of parts as will be disclosed more fully hereinafter and particularly pointed out in the claims.

Referring to the drawings forming a part of this specification and in which like numerals designate like parts in all the views;—

Figure 1 is a side elevational view, partly in section, of a coin controlled apparatus to which the present improvement is applied;

Figure 2 is a front elevational view of the parts shown in Figure 1;

Figure 3 is an enlarged detail view in front elevation of the coin chute and its associated parts;

Figure 4 is a sectional view of the parts shown in Figure 3;

Figure 5 is a perspective view of a rear portion of the coin chute and trip device;

Figure 6 is a horizontal sectional view taken on the line 6—6 of Figure 5 and looking in the direction of the arrows;

Figure 7 is a horizontal sectional view taken on the line 7—7 of Figure 5 and looking in the direction of the arrows;

Figure 8 is a vertical sectional view taken on the line 8—8 of Figure 5 and looking in the direction of the arrows;

Figure 9 is a vertical sectional view taken on the line 9—9 of Figure 4 looking in the direction of the arrows and is similar to Figure 8 but shows the trip device in a different position; and

Figure 10 is a partial sectional view similar to Figure 4 but showing the parts in a different position.

The present improvement can be applied to a vending machine or other coin controlled apparatus. In the drawings, the

actuating and coin controlled devices for such an apparatus only are shown. As shown, the coin controlled machine or apparatus is arranged within an enclosing casing 1 and the actuating and coin controlling devices are mounted upon an upright bracket 2 fixed within the forward portion of the casing. The main operating lever 3 is mounted on a pivot pin 4 on one side of the bracket 2 and projects forwardly through a slot 5 in the casing, being provided on its forward end with an operating handle 6. The inner end of the lever is operatively connected by a link 7 to the vending or other means which are to be actuated. A spring 8 connected to the upper portion of the bracket 2 and to the actuating lever 3 holds the latter in normal position against a stop 9. A full-stroke ratchet 10 is formed upon the central portion of the lever and is arranged to cooperate with a pivoted, spring-held dog 11 on the bracket 2 to compel a complete shift of the lever before it can be returned to normal position.

A locking latch 12 for the actuating lever is mounted at its lower end upon a pivot 13 fixed to the lower front portion of the bracket. The latch extends upwardly on one side of the lever 3 and is provided at its inner edge with a curved or arc-shaped portion 14 which terminates at its upper end in a shoulder 15. Above the shoulder, the latch is provided with a rearwardly extending cam portion 16 which is arranged to engage a laterally projecting lug 17 formed upon the lever 3. A spring 18 is connected at one end to a hook 19 on the upper end of the locking latch 12 and at its opposite end to a pin on the upper rear portion of the bracket 2. This spring tends to swing the latch rearwardly and holds its rear edge in engagement with the lug 17 of the actuating lever. Normally, the cam lug 16 of the latch engages the lug 17 and the latch is then held in the position shown in Fig. 1.

The lever can be depressed to a slight extent without inserting a coin but, unless a coin is inserted, the spring 18 will move the latch rearwardly as the lever 3 is depressed and, after a slight initial movement of the lever, the lug 17 thereon will engage the shoulder 15 of the latch which will thereby arrest and lock the lever against further movement. This slight initial

movement of the actuating lever is not sufficient to bring the full-stroke dog 11 in engagement with the teeth of the ratchet 10.

The latch 12 is controlled by a lever 20 which is mounted between its ends on a pivot 21 fixed to the upper front portion of the bracket 2 and the lower end of the lever is provided with a pin 22 which engages a vertical slot 23 formed in the upper end of the latch. The upper end of the lever 20 is laterally offset over the upper portion of the bracket and carries a finger or plunger 24 which is adjustably fixed thereto by a set screw 25 and extends forwardly therefrom toward the coin chute of the apparatus. As the latch shifts from its normal to its locking position during the initial movement of the actuating lever 3, the upper end of the trip arm 20 moves forwardly and the plunger 24 is forced through openings formed in the coin chute. But if a coin of predetermined size is inserted in the coin chute, it will be engaged by the plunger so that the latter and the lever 20 will prevent the shift of the latch to its locking position and the operative movement of the actuating lever can be completed. The complete shift of the lever is arrested by the engagement of the lug 17 thereon with a stop shoulder 26 formed upon the forward edge of the bracket 2.

The coin chute comprises a back portion 27 in which the coin slot 28 is formed and a front cover plate 29 is fixed thereto as by screws 30. The coin chute is fixed to the upper end of the bracket 2 by screws 31 and extends upwardly therefrom through the top of the casing 1. Preferably, its upper end is laterally offset and its front portion or cover plate 29 is provided with an opening 32 through which the coins are inserted.

The inserted coins will pass through the slot or guideway 28 and will be arrested in operative position in the coin chute by a stop pin 33 and by the toe of a yielding stop or dog 34, as indicated at *a* in Figs. 3, 4 and 10. The pin is fixed to the back portion 27 of the coin chute and is arranged on one side of the slot 28 just below a shoulder 35 at the edge of the slot. The dog 34 which projects into the opposite edge of the slot is L-shaped as shown and is connected by a pivot pin 36 to a lug 37 on the side of the chute. A rearwardly projecting finger 38 on the lower end of the dog is connected to one end of a spring 39, the opposite end of which is connected to a pin 40 fixed to the chute and projecting rearwardly therefrom. The spring yieldingly holds the dog in normal position so that it will engage and arrest the inserted coin. When thus arrested in operative position, the left-hand portion of the inserted coin, as seen in Figs. 3 and 4, will lie in front of the forward end

of the plunger 24 and, if of proper size, it will arrest the plunger and as described, prevent the movement of the latch 12 to its locking position so that the actuating lever 3 can be completely operated.

The forward end of the plunger normally extends within an opening 41 in the back portion 27 of the chute and closely adjacent the rear face of the coin slot. It is thus arranged to engage the aforementioned left-hand portion of the coin which has been arrested in the operative position in the coin slot and will immediately so engage the coin as soon as the operating lever 3 and latch 12 are started from the normal position shown in Fig. 1. The front or cover plate 29 of the chute is provided with an enlarged, substantially circular opening 42 through which the plunger 24 moves in case its shift is not obstructed. This opening is so located relatively to the stop pin 33 and the dog 34, when the latter is in normal position, that the edges of the opening will overlap the edges of a coin of predetermined size, for example, a five cent piece. Such a coin of predetermined or proper size is indicated in operative position at *a* in Figs. 3, 4 and 10. It is obvious that such a coin will be held against movement and will obstruct the shift of the plunger 24 when the actuating lever 3 is depressed and, as described, will prevent the movement of the latch 12 to its locking position and permit the complete operative movement of the actuating lever. But if a coin of smaller size is inserted, for example, a one cent piece, it will be arrested by the stop pin 33 and dog 34 in the position indicated in dotted lines at *b* in Fig. 3 and the left-hand edge portion of the opening 42 in the cover plate will not extend over the adjacent edge of this smaller coin. Then, when an attempt is made to depress the lever 3, the plunger or finger 24 will engage the coin and force it from operative position forwardly out through the opening 42 and the latch 12 will move to its operative position and lock the lever, after the slight initial movement thereof. Thus, the plunger 24 and lever 20 not only cooperate with a coin of proper determined size to permit the operation of the apparatus, but also serves to positively force smaller coins from operative position in the coin chute so that the operation of the apparatus cannot be effected thereby.

It should be noted that the stop pin 33 and the stop dog 34 at the opposite edge portions of the coin chute arrest inserted coins and accurately register the same relative to the enlarged substantially circular opening 42, so that the left hand edge of this opening, as seen in the drawings, need only overlap the edges of coins of predetermined size to a slight extent. Hence, all coins of less than predetermined size will

invariably be forced by the plunger 24 from operative position in the coin chute.

It should be further noted that the plunger 24 eccentrically engages the coins in operative position, and that the stops 33 and 34 arrest the coins in such position that the edges of the opening 42 in the coin chute overlap to a considerable extent the opposite side edges of coins of proper size, but the edge of a smaller coin adjacent the path of movement of the plunger 24 is left entirely free from top to bottom of the coin. With this arrangement the proper sized coins will invariably effect the operation of the apparatus, while smaller coins will invariably be ejected from operative position by the plunger 24.

The back portion 27 of the coin chute, as shown in Fig. 4, is provided with an arc-shaped slot 43. The cover plate 29 thereof is provided with a similar slot 44 which merges with the opening 42 therein and is arranged in line with the slot 43. An arm 45 pivotally connected to a lug 46 on the cover plate carries a lug 47 which projects rearwardly through the slot 44 and into the slot 43. A link 48 connects the arm 45 to the operating lever 3 and holds the arm in normal position with its lug in the upper portions of the slots 43 and 44 and adjacent a shoulder 49 on one edge of the coin slot. This shoulder deflects the inserted coins so that they will pass around the lug 47 and between this lug and the opposite edge of the slot which, at this portion of the slot, is curved as shown at 80 in Figs. 3, 4 and 10.

The initial movement of the operating lever 3 will not depress the arm sufficiently to bring the lug 47 in engagement with coins in operative position in the coin chute, but, when a coin of proper predetermined size is inserted, the complete shift of the lever will swing the arm 45 downwardly so that the lug 47 will engage the coin in operative position and force it downwardly past the stop pin 33 and dog 34. During this movement, the dog is forced outwardly against the tension of its spring 39 and the coin moves past the fixed stop pin 33 through a cutaway portion 50 in the opposite edge of the coin slot.

In the form shown, the lower portion of the chute is provided with means for arresting the coin when it is forced, as described, from operative position by the lug 47. For this purpose, a lever 51 is mounted on the rear face of the coin chute and is connected at its upper end to a pivot pin 52. The lower end of the lever is provided with a forwardly projecting lug 53 which extends beneath the left-hand portion of the lower end of the coin slot. Another lug 54 on the lever extends through an opening 55 in the back portion 27 of the chute and into

the left-hand portion of the coin slot. A spring 56 connects the lever to the pin 40 and holds it in normal position with the lug 54 engaging the inner edge of the opening 55. When a coin is forced downwardly, as described, from the operative position shown at *a* in Figs. 3 and 4, it will be arrested, by the lug 54 and a cooperating shoulder 57 formed upon the opposite edge of the coin slot, as indicated at *c* in Figs. 3, 4 and 10. The coin will be arrested as described, since the space between the shoulder 57 and the lug 54, when the latter is in normal position, shown in Fig. 4, is slightly less than the diameter of the coin. When another coin is similarly forced from operative position, it will engage the coin on the lug 54 and shoulder 57 forcing the latter downwardly to the position indicated at *d* in Figs. 3 and 4 where it will be held in this position by the lug 53 and the shoulder 58 formed upon the opposite edge of the coin slot. Of course, when still another coin is forced from operative position, the lowermost coin in the coin chute will be forced therefrom. The coins in the lower portion of the coin chute can be inspected through a glass covered opening 59 in the front of the casing and bogus coins thus detected.

Difficulty has sometimes been experienced in coin chutes of this character in that a subsequent coin has been inserted in the coin chute before the previously inserted coin has operated the mechanism. While in many instances this would not materially affect the mechanism, yet on the other hand, it has been possible for a second coin to be inserted, through the opening 32, which was of such a thinness that when said coin had reached the previously inserted coin, the contacting portions of the two coins would become overlapped, with the result that this overlapped condition would cause the two coins to jam in the coin slot and thus render the mechanism inoperative until the proper person arrived and remedied the jammed condition. To overcome this condition there is provided an automatic trip device which will cause subsequent coins to be thrown out of the coin slot until the previously inserted coin has caused the mechanism to operate, said subsequent coins being returned to the customer.

To this end there is provided on the rear plate 27 of the coin chute the U-shaped horizontally disposed bracket member 65 having rearwardly extending arms adapted to pivotally support the U-shaped lever or trip member 66. This trip member 66 is preferably stamped from a piece of sheet material to form the upwardly extending arm 67 and the downwardly extending arm 68, both arms integral with the central portion of the trip device which is provided with an integral pair of forwardly projecting arms fit-

ting between the arms of the bracket member 65 and pivoted thereto. The upper arm 67 is bent forwardly to provide an enlarged end portion projecting at substantially a right angle to the main body portion and to said arm. This said end portion constitutes a coin stop 69 which is adapted to extend through and reciprocate in an upper slot 70 provided therefore in the rear plate 27 of the coin chute, and to further extend across the space or recess 28 between the front and rear plates 29 and 27 respectively. With particular reference to Figures 7, 8, and 9 it will be seen that the extreme edge of the stop 69 is adapted to engage a groove or recess on the inner side of the front plate 29 so that the space 28 will be positively bridged by the stop 69.

With particular reference to Figs. 4 and 5 it will be observed that the opening 70 is angularly disposed to a horizontal plane and that the stop member 69 is "skewed" or located in a plane likewise angularly disposed to a horizontal plane, thus providing said member 69 with an inclined upper surface.

The lower arm 68 of the trip device is provided with an angularly bent end portion or fin 71 extending forwardly and provided with a cam surface or edge 72 inclined relatively to the coin chute. This end portion 71 is adapted to reciprocate through a lower slot 73 formed in the rear plate 27 of the chute and to extend across said chute so that the cam surface 72 will engage a groove or cutaway portion, not numbered in the drawings but illustrated in Figures 6 and 8, in the front plate 29. The downwardly projecting arm 68, in order that the trip device may function properly, is provided with a laterally extending portion as clearly seen from the figures, having secured to its end a weight 74 which is sufficient to normally compel the fin 71 to extend across the cutaway portion 28 of the coin chute so that the cam surface 72 will occupy the aforementioned groove. Such a relation of parts is illustrated particularly in Figures 6 and 8 wherein it will be seen that the fin 71 lies in the path of a coin inserted in the chute. Referring to Figures 6 and 8 it will be observed that the fin 71 extends across the coin slot 28 due to the weight 74. Upon the insertion of a coin, shown in the above mentioned figures at 75, the advancing edge of said coin will strike the inclined surface 72 of the edge of the fin 71 disengage said surface from its associated groove and force the fin 71 rearwards until the edge 72 rests upon the flat surface of the coin. When the coin 75 comes to rest upon the pin 33 and the toe of the dog 34 as fully described above, the coin and trip device will be in the positions illustrated in Figure 9. When the parts are in this position it will be observed that the stop member 69 will have been projected

across the coin slot 28 and the extreme edge portion thereof will lie in its associated groove, as shown in Figures 7 and 9.

Upon the subsequent coin being inserted before the coin 75 has operated the mechanism, it will be obvious, with particular reference to Figures 4, 7, 9, and 10, that the stop member 69, now lying across the coin chute 28, will not only actually stop said subsequently inserted coin but the inclined upper surface of said member 69 will positively cause said coin, indicated at 76, to roll sideways out of the coin chute 28 through the opening 77 in the side of said coin slot and into any suitable conveyer, such as 78, adapted to return the coin 76 to the customer.

Upon the operation of the mechanism as hereinbefore described the coin 75 will have been projected downwardly from its position shown at *a* in Figure 4 to the position shown at *c*. During this movement, see Figure 4, the coin will have passed out of the path of the fin member 71, thus allowing said fin to again advance across the slot 28 and at the same time remove the upper stop member 69 from its position across the said slot 28. In Figures 6 and 7 the full line positions show the respective members 69 and 71 across the slot 28 and in the path of any coin advancing down said slot, while the dashed line position of said members show the extreme limit of motion of the members 69 and 71, or the coin slot 28 cleared.

The parts of the trip device 66 are so formed that whenever a coin starts the movement of the fin 71 in a rearward direction, the stop member 69 is advanced forwardly into the path of a subsequently inserted coin. Also the trip device is so positioned upon the rear member 27 of the coin chute that a coin in the position shown at *a* in the drawings will cause the stop member 69 to be in operative position to expel a following coin such as 76 from the coin slot 28. The upper surface of the stop member 69 is inclined as shown in Figure 4 to compel the coin 76 rolling from the coin slot 28 through the exit 77 therefrom.

As heretofore described the normal position of the member 45 is as shown in Figure 2 due to the action of the spring 8. If for any reason a customer inserts a coin through the opening 32 into the coin chute 28 while the handle 6 is in its lowermost position, the said coin will travel downwardly until it comes to a stop on the pin 33 and the toe of the dog 34, all as hereinbefore described. But it will be noted in Figure 10 that the lug 47 carried by the lever 45 and controlled by the handle 6, is in the lowermost end of the arcuate slot 43 and thus beneath the newly inserted coin. However, the coin chute is so constructed and the parts so disposed that upon the release of the operating handle 6 the lug 47 will travel upward as indicated

by the arrow until it assumes its normal position shown in dashed lines in the uppermost end of said slot 43. The lug 47 during this travel will cause the coin shown at *a* in said Figure 10 to roll upwards and to the right, in the direction of the arrow in said figure, and into the pocket 80 formed in the coin slot 28. This pocket 80 is of such size as fully disclosed in Figure 10 to accommodate a coin of a predetermined size between its arcuate surface and the path of the moving lug 47. Also it should be observed that during the retromovement of the coin into the pocket, said coin will at all times contact the fin member 71 of the trip device 66, thus causing the diversion of any subsequently inserted coin through the exit opening 77 of the coin slot 28.

It is obvious that those skilled in the art may vary the details of construction as well as the arrangement of parts without departing from the spirit thereof, therefore it is not desired to be limited to the foregoing except as may be demanded by the claims.

What is claimed is:

1. In a coin-controlled apparatus the combination of a chute composed of a front and a rear plate, said front plate provided with a groove, and said rear plate provided with an upper and a lower slot; a bracket having rearwardly extending arms secured to said rear plate; a trip device made from sheet material and having integrally formed therewith a pair of forwardly projecting arms fitting between said bracket arms and pivoted thereto, said trip device also having an integral upwardly projecting arm provided with an enlarged forwardly projecting end portion provided with an inclined upper surface and adapted to reciprocate in said upper slot, said trip device also provided with an integral downwardly projecting arm provided with an angularly bent end portion extending forwardly and provided with a cam surface engaging in its forward position the groove in said front plate, said end portion adapted to reciprocate in said lower slot, said downwardly projecting arm provided with an integral laterally extending portion having secured at its end a weight sufficient to normally compel the angularly bent end portion to occupy said groove; and a coin return slot associated with said chute adjacent to the said upper slot adapted to receive a coin directed therein by the inclined end portion of said upwardly projecting arm, when said arm is reciprocated forwardly by a previously inserted coin moving said cam surface out of engagement with said lower groove.

2. In a coin controlled apparatus the combination of a chute composed of a front and a rear plate, said front plate provided with an upper and a lower groove, and said rear plate provided with an upper and a lower slot coacting therewith; a bracket having rearwardly extending arms secured to said rear plate; a trip device made from sheet material and having integrally formed therewith a pair of forwardly projecting arms fitting between said bracket arms and pivoted thereto, said trip device also having an integral upwardly projecting arm provided with an enlarged forwardly projecting end portion provided with an inclined upper surface and adapted to reciprocate in said upper slot and engage said upper groove, said trip device also provided with an integral downwardly projecting arm provided with an angularly bent end portion extending forwardly and provided with a cam surface engaging in its forward position the lower groove in said front plate said end portion adapted to reciprocate in said lower slot, said downwardly projecting arm provided with an integral laterally extending portion having secured at its end a weight sufficient to normally compel the angularly bent end portion to occupy said groove; and a coin return slot associated with said chute adjacent to the said upper slot adapted to receive a coin directed therein by the inclined end portion of said upwardly projecting arm, when said arm is reciprocated forwardly by a previously inserted coin moving said cam surface out of engagement with said lower groove.

3. Means for controlling the operation of coin released apparatus comprising a coin chute composed of a front and a rear plate, said front plate provided with a groove and said rear plate provided with a slot; means to arrest a coin inserted in said chute; means to release the arrested coin; a coin return chute; and means provided with an inclined surface coacting with said slot and said groove and controlled by an arrested coin, said surface adapted to stop a subsequently inserted coin in said chute and to positively direct the same into said coin return chute.

4. Means for controlling the operation of coin released apparatus comprising a coin chute composed of a front and a rear plate, said front plate provided with a groove and said rear plate provided with a slot; means to arrest a coin inserted in said chute; means to release the arrested coin; a coin return chute; and means provided with an inclined surface and controlled by an arrested coin adapted to enter and cross said coin chute to coact with said groove, whereby a subsequently inserted coin is stopped and caused to roll from said inclined surface into said coin return chute.

In testimony whereof I affix my signature.

ODE D. JENNINGS.

DISCLAIMER

1,562,771.—*Ode D. Jennings*, Palatine, Ill. COIN-CONTROL APPARATUS. Patent dated November 24, 1925. Disclaimer filed August 13, 1934, by the assignee, *O. D. Jennings & Company*.

Hereby enters this disclaimer of claims 3 and 4 and of that part of the thing patented which is embraced by claims 3 and 4 in said specification, which are in the following words, to-wit:

"3. Means for controlling the operation of coin released apparatus comprising a coin chute composed of a front and a rear plate, said front plate provided with a groove and said rear plate provided with a slot; means to arrest a coin inserted in said chute; means to release the arrested coin; a coin return chute; and means provided with an inclined surface coacting with said slot and said groove and controlled by an arrested coin; said surface adapted to stop a subsequently inserted coin in said chute and to positively direct the same into said coin return chute.

"4. Means for controlling the operation of coin released apparatus comprising a coin chute composed of a front and a rear plate, said front plate provided with a groove and said rear plate provided with a slot; means to arrest a coin inserted in said chute; means to release the arrested coin; a coin return chute; and means provided with an inclined surface and controlled by an arrested coin adapted to enter and cross said coin chute to coact with said groove, whereby a subsequently inserted coin is stopped and caused to roll from said inclined surface into said coin return chute."

[*Official Gazette September 4, 1934.*]