A. D. GROVER & E. E. BARBER.

WASHER CATCHING DEVICE FOR COIN CONTROLLED VENDING MACHINES.

APPLICATION FILED OCT. 29, 1915.

1,192,301. Patented July 25, 1916.

Fig. 1.

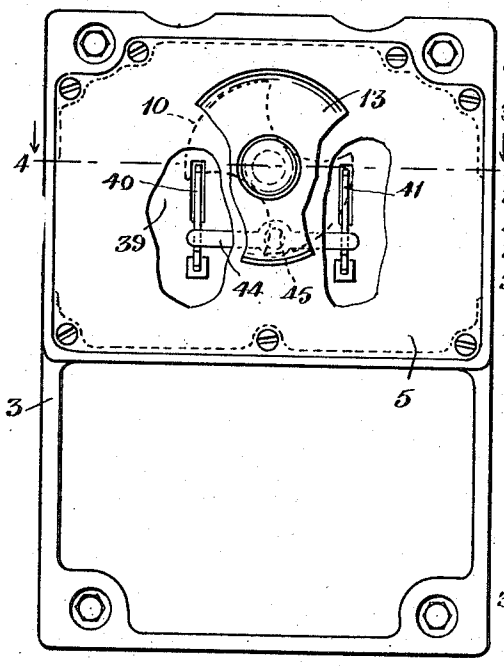


Fig. 2.

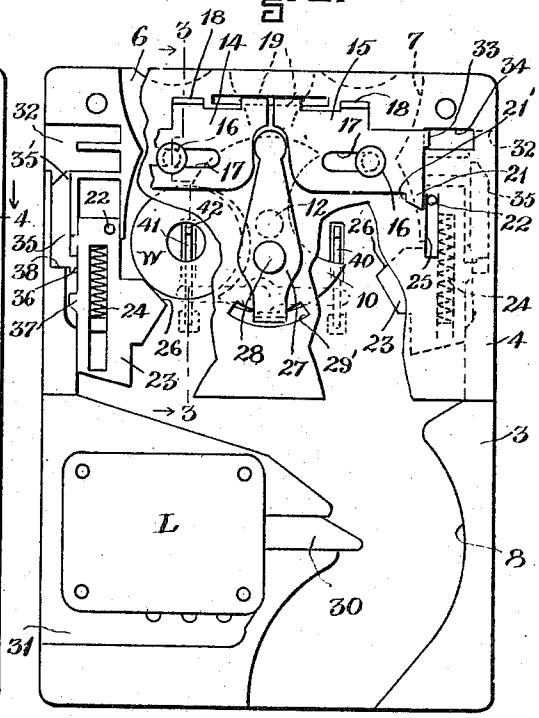


Fig. 3.

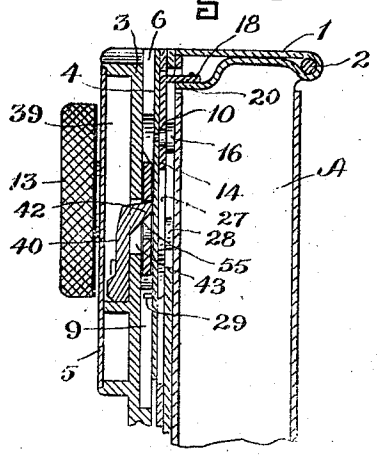


Fig. 4.

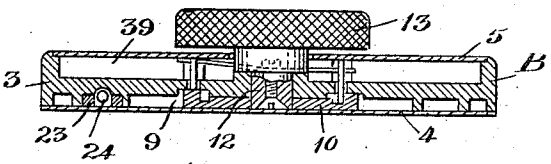


Fig. 5.

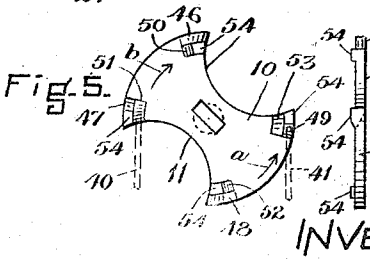
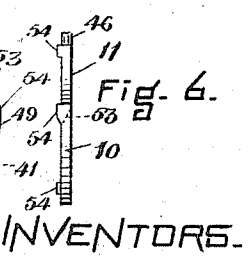


Fig. 6.



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UNITED STATES PATENT OFFICE.

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WASHER-CATCHING DEVICE FOR COIN-CONTROLLED VENDING-MACHINES.

1,192,301. Specification of Letters Patent. Patented July 25, 1916.

Original application filed April 22, 1913, Serial No. 762,810. Divided and this application filed October 29, 1915. Serial No. 58,544.

To all whom it may concern:

Be it known that we, ALBERT D. GROVER and EARL E. BARBER, citizens of the United States, and residents, respectively, of New York, county and State of New York, and Malden, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Washer-Catching Devices for Coin-Controlled Vending-Machines, of which the following is a specification.

This application is a division of our co-pending application, Serial No. 762,810, filed April 22, 1913. Because of an official requirement for division made in said co-pending application, all claims to the washer-catching feature of our invention had to be canceled and presented in a separate application. Hence, the necessity for this divisional application, which is limited to the aforesaid washer-catching feature.

The object of our invention as set forth in this divisional application is to provide means for preventing the operation of a coin-controlled machine when a washer or any perforated disk is deposited.

Our invention is particularly applicable to vending machines of small dimensions, such as are used in theaters, because the mechanism is exceedingly simple and occupies but very little space.

In the accompanying drawings we have shown a preferred form of our invention applied to a two-compartment theater machine, although we would have it clearly understood that in its broad aspect our invention may be applied to various types and forms of coin-controlled machines.

In the accompanying drawings Figure 1, is a front view of a coin-controlled vending machine to which our new washer-catching mechanism is applied, certain of the parts being broken away for the sake of clearness. Fig. 2, is a reverse view of the machine shown in Fig. 1, showing how the coin-carrier is locked against operation when a washer has been deposited. Fig. 3, is a longitudinal view in cross-section approximately on line 3—3 of Fig. 2, the lower portion of the casing being broken away. Fig. 4, is a transverse cross-section on line 4—4 of Fig. 1. Fig. 5, is a detached face view of the coin-carrier; and Fig. 6, is an edge view of the coin-carrier.

The particular machine shown for the sake of illustration in the drawings, comprises a main casing indicated as a whole by A, and a flat supplemental casing indicated as a whole by B. The main casing A constitutes the goods-compartments, each of which is provided with a lid 1 hinged at 2 to the top of the casing.

The flat supplemental casing B is removably attached to the front wall of the main casing A and comprises a main casting 3, an inner cover plate 4 and an outer cover plate 5. As best seen from Fig. 2, the inner face of the casting 3 is formed with an irregularly shaped recess in which various parts of the coin-controlled lock are mounted. The casting 3 is formed on top with two coin-entrance openings 6 and 7, and at the bottom with a single coin-exit opening or passage 8. Between the coin-entrance openings 6 and 7 and the coin-exit passage 8 is a recess or chamber 9 (best shown in Figs. 3 and 4), in which is operatively mounted the coin-carrier 10 which consists of a disk having opposite notches or recesses 11 for receiving the deposited coin. It will be seen from Fig. 2 that both of the coin-entrance slots 6 and 7 lead to the coin-carrier 10. The coin-carrier has affixed thereto a hub member 12 which is rotatably mounted in the casting 3, as clearly shown in Fig. 4. A rotary knob 13 mounted at the front wall of the casing is operatively connected with the hub member 12 of the coin-carrier and thereby transmits motion to the latter. Any suitable means may be provided for operating the coin-carrier 10 from the outside of the machine.

Associated with each lid of the machine is a movable locking member for normally holding the lid locked. In the drawings, these two locking members are shown at 14 and 15. These members are slidably mounted on the rear cover plate 4 of the supplemental casing B by means of pins 16 which engage in slots 17 formed in the locking members. Each locking member is provided with a rearward projection 18 and a forward projection 19. The rearward projection 18 is adapted normally to engage the extension 20 of the lid so as to normally

hold the same locked, as best shown in Fig. 3. The forward extension 19 of each locking member 14 and 15, is arranged in alinement with the coin-entrance slots 6 and 7 so as to project into the associated coin-slot and obstruct the same when the locking member is in operated position. In this way the deposition of a coin is prevented when the associated magazine is empty, so as to protect an intending purchaser against the loss of his coin. Each of the locking members 14 and 15 is at its lower outer end provided with an extension 21 which abuts against the pin 22 carried by a locking slide 23. A spring 24 normally forces each of the locking slides into uppermost or locking position. When the locking slides are in their normal position, the locking members 14 and 15 are locked against outward movement—or in other words, they are locked in lid-locking position. The pins 22 on the locking slides 23 project through vertical slots 25 (only one of which is shown) in the rear cover plate 4. Each of the locking slides 23 is provided with a coin-engaging portion 26 which extends into the path of the coin on the coin-carrier and is thereby adapted to be forced downwardly into releasing position to draw the pin 22 out of alinement with the extension 21 on the associated lid-locking member.

The locking members 14 and 15 are operated into releasing position through the agency of the lever 27 pivoted at 28 on the plate 4. At its lower end the lever 27 is formed with a forwardly extending lug 29 which projects through the arc-shaped slot 29′ in the plate 4 into alinement with the coin on the coin-carrier, as best shown in Fig. 3. The upper end of the lever 27 extends between the locking members 14 and 15 in close proximity thereto, so that operation of said lever to one side actuates one of the locking members, while actuation to the other side operates the other locking member.

The operation of the coin-controlled lock above described will now be clearly understood and is as follows: Assuming the parts to be in their normal position, let us say that a proper coin has been deposited in the coin-entrance slot 6. Referring to Fig. 2, let it be assumed for the moment that the ring or washer W is a proper coin. After the coin has been deposited, the knob 13 is turned in the direction of the coin-slot 6 (*i. e.* counterclockwise as viewed in Fig. 2). The coin-carrier 11 will carry the coin into the position of the disk W shown in Fig. 2. That is to say, the coin will rest between the recess in the coin-carrier and the coin-engaging surface 26 of the locking slide 23. Upon further rotation of the coin-carrier toward the left, the coin will force the locking slide 23 downwardly and thereby withdraw the locking pin 22 out of engagement with the shoulder or extension 21 on the associated locking member 14. As rotation of the coin-carrier is continued, the coin is carried against the forwardly extending lug 29 on the lever 27 and thereby rocks the same counter-clockwise—that is to say, the outer end of the lever is moved toward the left against the now unlocked member 14 and thereby shifts the same into lid-releasing position. The lower portion 20 of the lid is so constructed that when the locking member is shifted by the lever 27, the extension 18 moves out of engagement with the portion 20 of the lid and allows the latter to fly open under the action of a spring or of the upwardly projecting package within the compartment. The coin is automatically discharged by the coin-carrier from between the coin-engaging surface 26 of the locking slide 23 and the coin-engaging lug 29 on the lever 27, and falls into the coin-passage 8 where it is retained by the bolt 30. Suitable locking mechanism L is provided for normally holding the bolt 30 in coin-retaining position and allowing the same to be withdrawn when a proper key is inserted in the key-opening 31.

As soon as the coin is forced from between the locking slide 23 and the lever 27, as above described, the spring 24 throws the slide back into uppermost or locking position. This brings the locking pin 22 against the inner surface 21′ of the shoulder 21 on the locking member, and thereby locks the latter in operated position. The locking members 14 and 15 are restored to normal position through the following means: The casting 3 is provided at its upper end with a pair of key-openings 32 into which extends the lug 33 formed at the outer upper end of each of the locking members 14 and 15. These lugs 33 extend forwardly through horizontal slots 34 in the plate 4. Associated with each locking slide 23 is a resetting member 35 which consists simply of a slidable bar mounted loosely in a recess of the casting 3 and having a projection 36 arranged in the path of movement of the projection 37 formed on the locking slide 23. When the locking slide 23 is in lowermost position, the resetting member 35 rests on the shoulder 38 formed in the casting 3. When the slide 23 is projected upwardly by the spring 24, the projection 37 engages the projection 36 of the resetting member 35 and forces the latter upwardly into a position indicated in dotted lines at the right of Fig. 2. When the resetting member 35 is in its uppermost position, the upper beveled end 35′ thereof projects in the key-slot 32. When, therefore, the proper key is inserted into the slot or opening 32, it first engages the member 35 and forces the latter downwardly, thereby also forcing the locking

slide 23 downwardly a sufficient distance to disengage the locking pin 22 from the inner edge 21′ of the shoulder 21 formed on the locking member. In other words, the first action of the key is to unlock the operated locking member 14 or 15. Further insertion of the key brings the same against the lug 33 of the locking member and the latter is, therefore, pushed inwardly into normal or lid-locking position.

The coin-controlled lock as above described does not in and of itself constitute a part of our invention, it being the subject-matter of the Kelly and Webster Patent No. 1,076,769, granted October 28, 1913, and we have shown and described the above set forth lock in this case merely for the sake of illustration and also to show how readily our new washer-catching mechanism can be applied to existing machines.

We will now describe the washer-catching mechanism which constitutes our present invention. The casting 3 is formed with an outer chamber 39 in which is pivotally or swingingly mounted a pair of pawls 40 and 41. There are two pawls shown in the drawings because the machine to which our invention is applied, is a two-compartment machine. For a single-compartment machine only one pawl would be needed. Each of the pawls 40 and 41 is provided with a rearwardly projecting head 42 which extends through a slot 43 in the main wall of the casting 3, as best shown in Fig. 3. Suitable means, such as the spring blade 44, is provided for normally forcing the upper ends of the pawls 40 and 41 into the chamber 9 where the coin-carrier operates. The spring 44 is conveniently fixed to the casting 3 at the point 45 in any suitable way, which leaves the opposite ends of the spring blade free to act upon the pawls 40 and 41. As seen from Figs. 1 and 2, the pawls 40 and 41 are arranged on opposite sides of the coin-carrier 10, but at unequal distances therefrom. In other words, the pawl 40 is nearer to the axis of rotation of the coin-carrier than the pawl 41. This is perhaps best indicated in Fig. 5 where the pawls are diagrammatically represented in dotted lines. The reason for this arrangement of the pawls is to allow free rotation of the coin-carrier in either direction by repressing the pawls through the medium of oppositely arranged inclined surfaces on the front face of the coin-carrier. These inclined surfaces are best shown in Figs. 5 and 6. There are two sets of these surfaces—an outer set numbered 46, 47, 48 and 49, and an inner set numbered 50, 51, 52 and 53. The outer set of inclined surfaces is adapted to engage the outer pawl 41, while the inner surfaces are arranged to engage the inner pawl 40. The diametrically opposite outer surfaces 46 and 48, and the diametrically opposite inner surfaces 51 and 53 are beveled outwardly (*i. e.* forwardly) from the edge of the coin-carrier. This is indicated by the showing in Fig. 5 and by the dotted lines representing the surface 53 in Fig. 6. The diametrically opposite outer surfaces 47 and 49, and the diametrically opposite inner surfaces 50 and 52 incline outwardly from the coin-carrier and terminate each in a lug 54.

It will thus be noted that the two sets of inclined surfaces are beveled reversely with respect to each other, whereby the inner set of surfaces serves to repress the pawl 40 when the coin-carrier is rotated in one direction, while the outer set of surfaces represses the pawl 41 when the coin-carrier is rotated in the opposite direction. We can perhaps best follow the action of the inclined surfaces on their respective pawls by reference to Fig. 5. If we imagine the coin-carrier rotated in the direction of the arrow *a*, it will be clear that the outer set of surfaces approaches the outer pawl 41 from below—that is to say, in the direction of the beveled under surface 55 on the head of the pawl. Therefore, the projections 54 of the surfaces 47 and 49 repress the pawl forwardly. At the same time, the inner inclined surfaces 51, 50, 53 and 52 approach the pawl 40 head on and cause it to ride over the same. When the direction of rotation of the coin-carrier is reversed (*i. e.* in the direction of the arrow *b* in Fig. 5), the inner set of surfaces approaches the pawl 40 from below, so that the inner projections 54 force this pawl out of their path of movement, while the outer set of surfaces approaches the outer pawl 41 head on and causes the same to ride over the inclined surfaces 49, 46, 47 and 48. In this way, it will be clear that the pawls 40 and 41 do not interfere with the rotation of the coin-carrier in either direction, whether it is empty or carries a coin. However, when the deposited check is a washer or ring, one or the other of the two pawls will snap into the opening of the washer or ring as soon as the same comes into alinement with the head of the pawl, whereby further rotation of the coin-carrier is positively prevented. This is indicated in Fig. 2 where the washer is shown at W, with the head 42 of the pawl 41 projecting into the opening of the washer. The preliminary movement of the coin-carrier before it is thus locked by the pawl, is not sufficient to move the locking slides 23 to releasing position. Furthermore, when the pawl interlocks with the washer, the position of the washer is such that the coin-carrier is free to be rotated in the reverse direction to carry the washer back into the coin-slot and project the same out of the slot sufficiently to permit its removal by hand.

If only one pawl is used, as in a single-

compartment machine, the coin-carrier will, of course, have but one set of inclined surfaces.

It will be seen that our new form of washer-catching device is exceedingly simple in construction and at the same time effective in operation. As the pawls are housed within the recess or chamber 39, their presence does not add to the dimensions of the machine.

Although we have herein set forth a specific form of our invention, we would have it understood that we do not intend to be limited to the details herein set forth and that the basic principle of our invention may be mechanically carried out in other ways than that herein shown by way of illustration.

Having thus described our invention what we claim as new and desire to secure by Letters Patent of the United States, is:

1. In a coin-controlled lock having a coin-chute for receiving the deposited coin, the combination with a coin-carrier movable within said coin-chute for conveying the deposited coin into operative position, of a yieldable pawl arranged to project normally into said chute but adapted to be repressed by a good coin on the carrier, so that a ring or washer on said coin-carrier allows said pawl to enter the opening thereof, whereby the coin-carrier is locked against further movement, and means on said coin-carrier to repress said pawl for permitting free operation of the empty carrier in either direction.

2. In a coin-controlled machine, a coin-carrier rotatable in opposite directions, a pair of members on opposite sides of said coin-carrier to lock the same against rotation in either direction by entering the opening of a ring or washer on said coin-carrier, and oppositely beveled surfaces provided on said coin-carrier for engaging said members and moving them into inoperative position when the coin-carrier is rotated empty or with a good coin.

3. In a coin-controlled machine, a coin-carrier rotatable in opposite directions, a pair of members on opposite sides of said coin-carrier to lock the same against rotation in either direction by entering the opening of a ring or washer on said coin-carrier, and means on said coin-carrier to repress said members for permitting free operation of the coin-carrier in either direction when empty or when carrying a proper coin.

4. In a coin-controlled machine, a movable coin-carrier, a movable pawl adapted to project into the opening of a ring or washer on said coin-carrier and thereby positively stop said carrier against further operation, and means on said coin-carrier to move said pawl into inoperative position when the carrier is empty.

5. In a coin-controlled machine, a casing having a coin-slot or passage, a rotatable coin-carrier, a yieldable member supported at one end and provided at its other or free end with a head projecting normally into said coin-slot or passage, whereby said head is adapted to enter the opening of a washer on said coin-carrier, said head having a beveled surface and an abrupt surface so arranged that said abrupt surface unyieldingly engages the inner edge of the washer and thereby positively locks said washer and coin-carrier against forward movement, said beveled surface permitting removal of the inserted washer through said coin-slot.

6. In a coin-controlled machine, a casing having a coin-slot or passage, a rotatable coin-carrier, an upwardly extending yieldable member supported at its lower end and provided at its upper or free end with a head projecting normally into said coin-slot or passage, whereby said head is adapted to enter the opening of a washer on said coin-carrier, said head having a beveled surface and an abrupt surface so arranged that said abrupt surface unyieldingly engages the inner edge of the washer and thereby positively locks said washer and coin-carrier against forward movement, said beveled surface permitting removal of the inserted washer through said coin-slot.

7. In a coin-controlled machine, a coin-carrier rotatable in opposite directions from its normal position, a pair of members on opposite sides of said coin-carrier to lock the same against rotation in either direction by entering the opening of a ring or washer on said coin-carrier, and means whereby either of said pawls is moved into inoperative position when the carrier is rotated empty or with a good coin.

8. In a coin-controlled machine, a casing having a coin-slot or passage, a coin-carrier normally free to rotate in a direction to carry the deposited coin into operative position within the machine, a yieldable member supported at one end and provided at its other or free end with a head projecting normally into said coin-slot or passage, whereby said head is adapted to enter the opening of a washer on said coin-carrier, said head having a beveled surface and an abrupt surface so arranged that said abrupt surface unyieldingly engages the inner edge of the washer and thereby positively locks said washer and coin-carrier against forward movement, said beveled surface permitting reverse rotation of the coin-carrier for the removal of the inserted washer through said coin-slot, and a hand-operable member mounted on the front wall of said casing for operating said coin-carrier.

9. In a coin-controlled machine, a casing having a coin-slot or passage, a coin-carrier

normally free to rotate in a direction to carry the deposited coin into operative position within the machine, an upwardly extending yieldable member supported at its lower end and provided at its upper or free end with a head projecting normally into said coin-slot or passage, whereby said head is adapted to enter the opening of a washer on said coin-carrier, said head having a beveled surface and an abrupt surface so arranged that said abrupt surface unyieldingly engages the inner edge of the washer and thereby positively locks said washer and coin-carrier against further movement, said beveled surface permitting reverse rotation of the coin-carrier for removal of the inserted washer through said coin-slot, and a hand-operable member on the front wall of said casing for operating said coin-carrier.

In witness whereof, we hereunto subscribe our names on the days below written.

Subscribed October 26, 1915.

ALBERT D. GROVER.

Subscribed October 23d, 1915.

EARL E. BARBER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."