

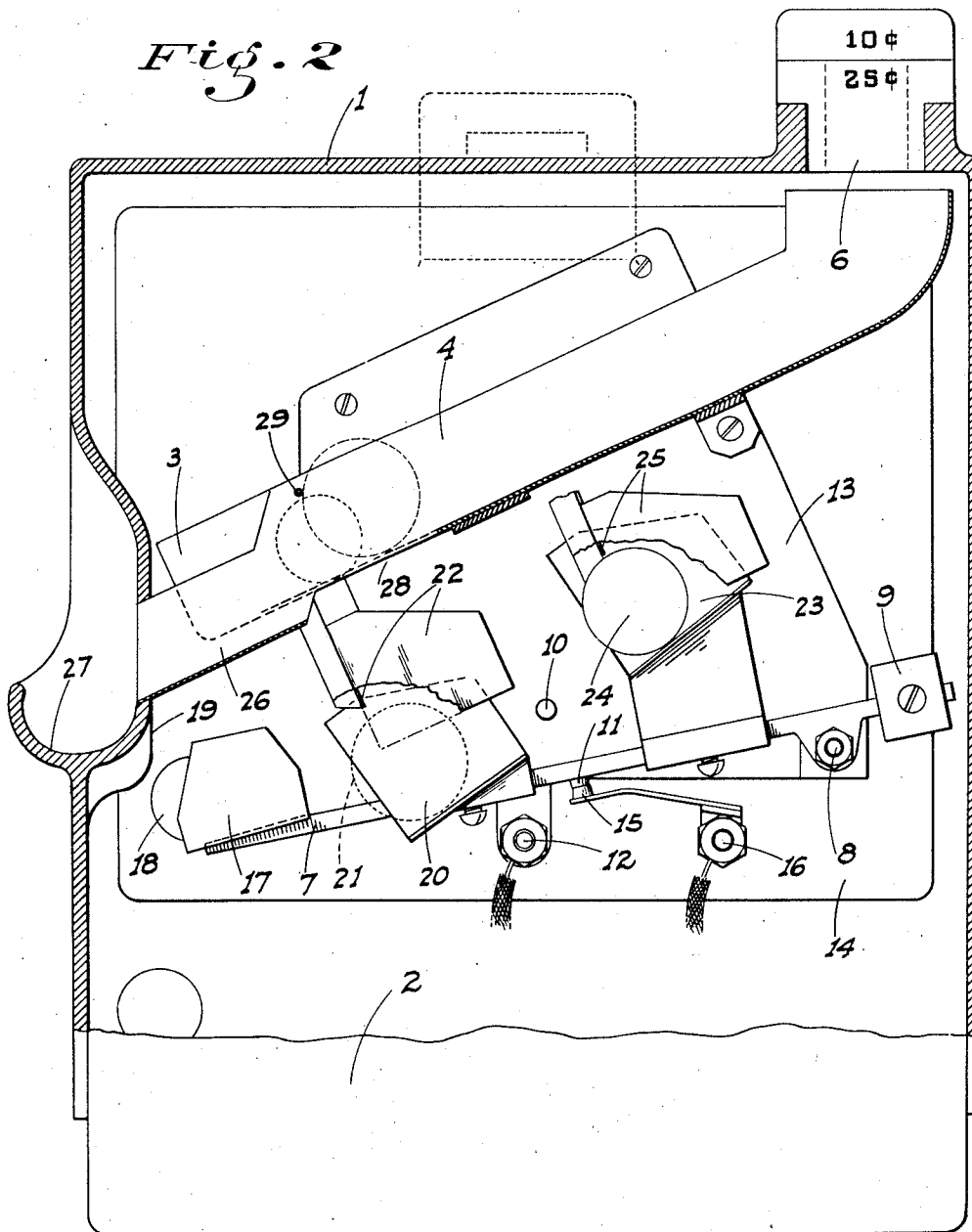
Jan. 9, 1934.

L. E. SCOTT ET AL
COIN CONTROLLED SWITCH

1,942,618

Filed Nov. 6, 1931

3 Sheets-Sheet 2



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Fig. 3

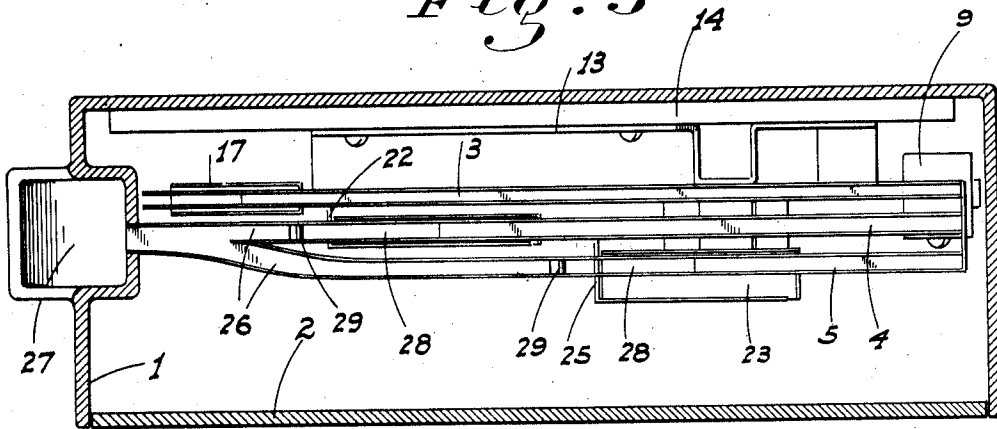


Fig. 4

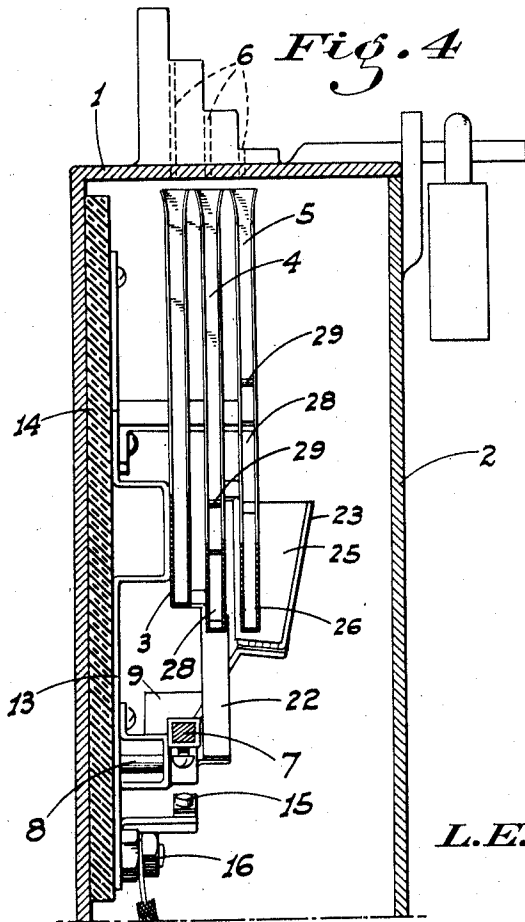
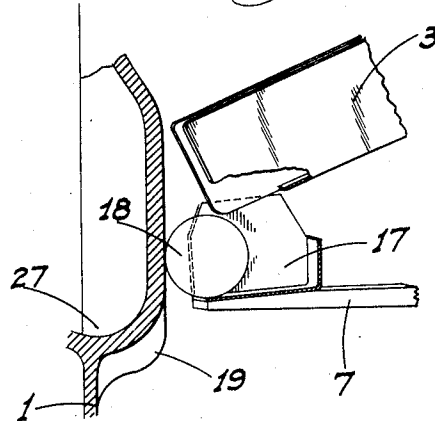


Fig. 5



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1,942,618

COIN CONTROLLED SWITCH

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Application November 6, 1931. Serial No. 573,328

1 Claim. (Cl. 194—9)

This invention relates to coin controlled switches and particularly to one designed for use in connection with the ice vending machine shown in our co-pending application for patent, Serial No. 478,658, filed August 29, 1930, although it will be understood that this switch is not limited to this particular vending apparatus.

Ice is sold in blocks of so many pounds each, retailing at 15¢, 20¢ or 25¢, as the case may be, and the dispensing of the ice is controlled by the depositing of the necessary amount of money in a coin switch box which controls the circuit of the dispensing mechanism. In order to make it unnecessary for the purchaser to actually have to deposit a single coin of the proper value in the box (and which cannot in any event be done with a 15¢ or 20¢ purchase, for instance) it is desirable that the coin controlled switch shall be capable of being operated by coins of different values which together total the required amount. For instance, if a 25¢ piece of ice is desired two dimes and one nickel, one dime and three nickels, five nickels, or one 25¢ piece will answer the requirements.

It is therefore the principal object of our invention to provide a coin controlled switch so arranged that the depositing of any of the above combination of coins will close the switch, while a lesser number of coins of lower value, regardless of their greater weight will not serve the purpose. Cheating, either intentionally or unintentionally, is therefore prevented.

Means is also provided to enable dimes (the smallest diameter coin useable) to be returned to the operator if he should accidentally drop them into the wrong slot.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a front sectional elevation of our coin controlled switch structure as in its normal switch opening position.

Fig. 2 is a similar view showing the closing of the switch by the weight of a number of deposited coins.

Fig. 3 is a top plan view of the structure with the casing in section.

Fig. 4 is a transverse section of the apparatus as on the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary front view showing the dime receiving pocket on the lever and the adjacent end of the coin feeding chute.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes a rigid casing preferably of rectangular form in which the apparatus is mounted and provided with a front hinged lid 2 adapted to be locked against undesired opening as indicated in Fig. 4. Fixed in the casing are transversely separated chutes 3, 4 and 5 to receive dimes, quarters and nickels respectively on edge. These chutes are set on a down slant and extend from adjacent one side of the casing near the top in the direction of the opposite side, terminating at their lower ends in stepped relation to each other. The coins of the proper dimensions are deposited in the respective chutes from slots 6 on top of the casing and arranged in the same transversely spaced relation as the spacing of the chutes so as to deliver into the upper ends of the same; the sizes of the slots being such as to accommodate coins of the desired denominations.

Mounted in the casing under the chutes is a normally horizontal lever 7 which extends crosswise of the casing and is pivoted toward its end nearest the upper ends of the chutes as shown at 8. A weight 9 is applied to the short end of the lever and yieldably holds the other end up, such upward movement being limited by a fixed stop 10. The lever carries a contact 11 which is electrically connected to a binding post 12 mounted in the casing through the medium of the pivot 8 and a metal back plate 13 in the casing on which the pivot pin and other parts are mounted. This plate itself is insulated from the casing by a panel 14 of insulation material. The contact 11 is adapted to engage another spring contact 15 mounted in connection with a binding post 16 secured to the panel 14. Such contacts are normally separated and their engagement only takes place when the lever has been tilted a predetermined amount from its normal position, and this is accomplished by the weight of coins as fed down the chutes in the following manner.

Mounted on the lever at its outer end is a pocket 17 having a downward slant in the direction of tilting of the lever and into which the lower end of the chute 3 delivers as shown in Fig. 5. The width of this pocket is such that while it will accommodate two dimes 18 in side

by side relation they must rest on edge and they therefore tend to roll from the outer end of the pocket. When the lever is horizontal the coins are prevented from thus rolling out by a vertical fixed wall 19 of insulated material positioned beyond the pocket and which in effect forms a closure for the outer end of the same. The wall in the present instance is shown as being integral with the adjacent side wall of the casing and is arranged so that as the lever is tilted the necessary distance to effect the engagement of the contacts, it no longer serves as a closure but permits the coins to drop clear as shown in Fig. 2.

Upon the coins leaving the pocket the lever is of course relieved of their weight and the weight 9 functions to again raise the lever to its normal position and open the switch. It may here be remarked that the type of device which this switch controls is usually a relay which functions to operate a main switch.

Likewise mounted on the lever with a downward slope and disposed between the pocket 17 and the pivot 8 is another pocket 20 into which the lower end of the chute 4 delivers. This pocket is arranged to receive a single quarter 21 on edge so that this coin likewise tends to roll from the outer end of the pocket. The closure for the front side and outer end of this pocket is formed by a wall member 22 separate from the pocket and mounted in fixed connection with the chute structure. This member is arranged to provide the desired closure when the lever is in its horizontal position but to allow the coin to roll or drop from the pocket when the lever is tilted by the weight of the coins therein as indicated in Fig. 2.

Also mounted on the lever and disposed between the pocket 20 and the pivot 8 is another pocket 23 into which the lower end of the chute 5 delivers, and arranged to hold a number of nickels 24 on edge. The closure for the front side and outer end of this pocket is formed by a wall member 25 mounted in fixed connection with the chute structure and arranged to function in the same manner as the wall 22.

The apparatus above shown and described is designed to function to close the switch upon the depositing of 25¢ or the equivalent thereof. This, to cover all requirements and accommodate the user without any inconvenience means that it shall operate with a single quarter, two dimes and one nickel, one dime and three nickels, or five nickels. The various pockets are therefore so arranged on the lever relative to the weight 9 and with respect to the weights of the various coins and the number of the same used in making up the above combinations, that the weight of one quarter alone in the proper pocket is sufficient to tilt the lever; but the weight of one or two dimes in the dime pocket or any number of nickels less than five in the nickels pocket is insufficient to overcome the weight 9 and tilt the lever.

No coins other than dimes can of course be placed in the dime slot 6 since such coins are the smallest made. The nickels and quarter slots however can obviously accommodate dimes which if deposited therein and allowed to enter the corresponding pockets would not effect the tilting of the lever unless a relatively large number of

dimes were used and a correspondingly excessive amount of money were spent. To therefore return any dimes accidentally deposited in the wrong slots to the owner we provide the following arrangement.

Arranged as continuations of the chutes 4 and 5 are chutes 26 which extend from the lower ends of the chutes 4 and 5 to the adjacent side of the casing where they deliver into a catch pocket 27 exposed to the outside of the casing so that the operator can reach in and grasp the returned coins with his fingers. To cause the proper coins deposited into the chute 4 or 5 to drop into the respective lever pockets while permitting any dimes to roll on by and into the corresponding chutes 26, the bottoms of the chutes 4 and 5 are cut away over their lever pockets as at 28. Cross stops 29 are arranged across the chutes 4 and 5 adjacent the plane of the cut away portion of the bottoms or in such position to be engaged by quarters or nickels respectively as the latter reach the cut away bottoms and so as to cause the coins to be halted in their movement and to drop into the pockets. The stops however are positioned so that they do not engage the relatively smaller dimes as indicated in Fig. 1 and the latter roll past the stops and into the extension chutes 26. This momentum of the coins is obtained by reason of the fact that the chutes are set on such an incline that the movement of all coins, if not definitely halted, is sufficient to carry them beyond the open bottom portion of the chutes.

From the above description it will be evident that an apparatus embodying the same principle may of course be made to control the closing of a switch with amounts of money other than that herein shown and described, by altering the number of lever pockets and the corresponding feed chutes, and the positioning of these pockets relative to each other and to the lever pivot.

From the foregoing description it will be readily seen, that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

Having thus described our invention what we claim as new and useful and desire to secure by Letters Patent is:

In a coin controlled switch that combination which comprises a pivoted and weighted lever, a switch, means operable by the overbalancing of the lever to close the switch, a fixed independent inclined coin chute above the lever and provided with a bottom slot, a coin cup into which the slot opens such cup including four walls, the front and one side wall of the cup being fixed on the chute, and the rear and other side wall and the bottom of the cup being fixed on the lever, whereby when the lever is overbalanced the respective fixed walls will move apart and allow a coin in the cup to discharge therefrom.

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