Nov. 28, 1950 W. J. SUMMERS 2,532,205

COIN SELECTOR

Filed July 23, 1949 2 Sheets-Sheet 1

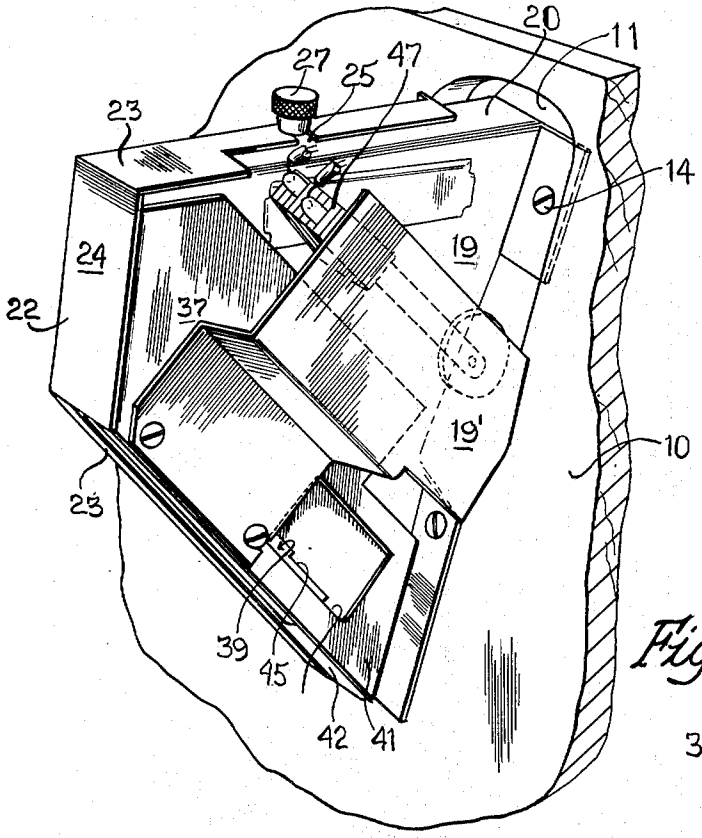

Fig. 1.

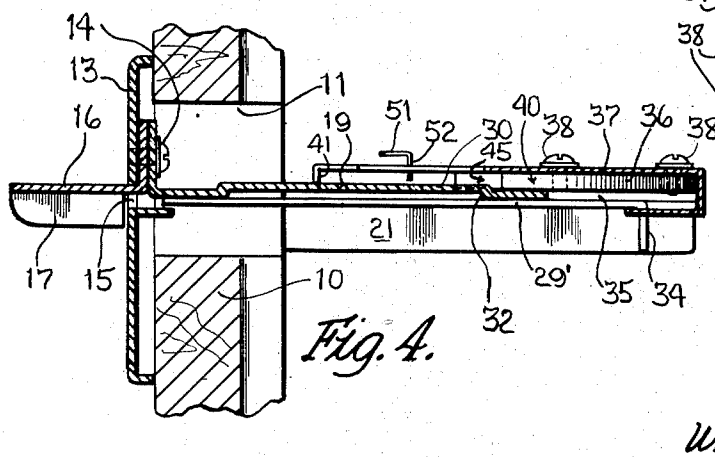

Fig. 4.

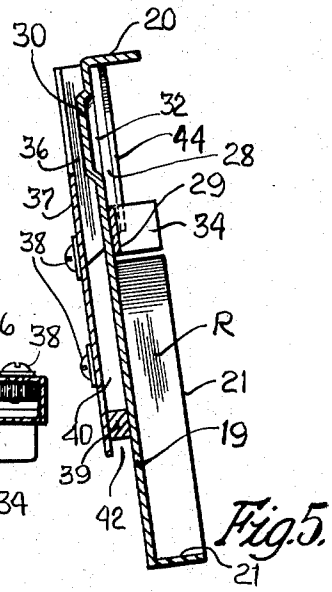

Fig. 5.

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COIN SELECTOR

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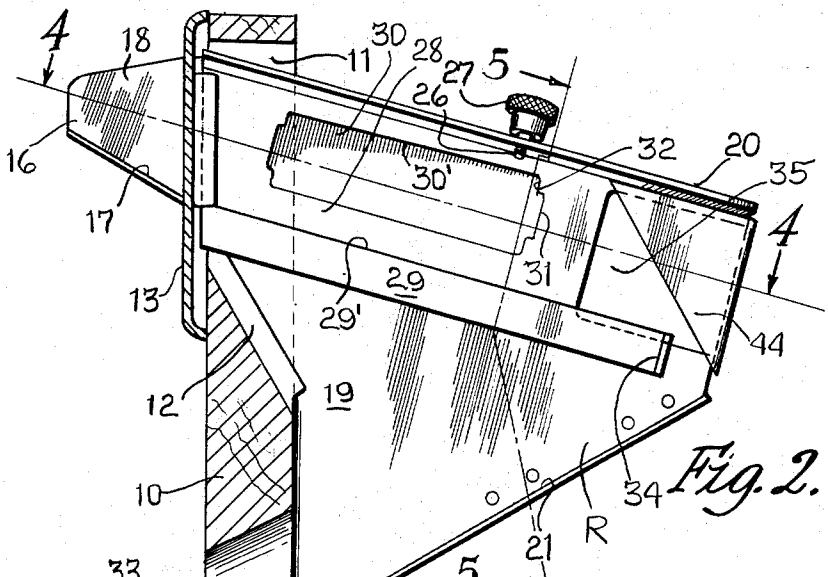

Fig. 2.

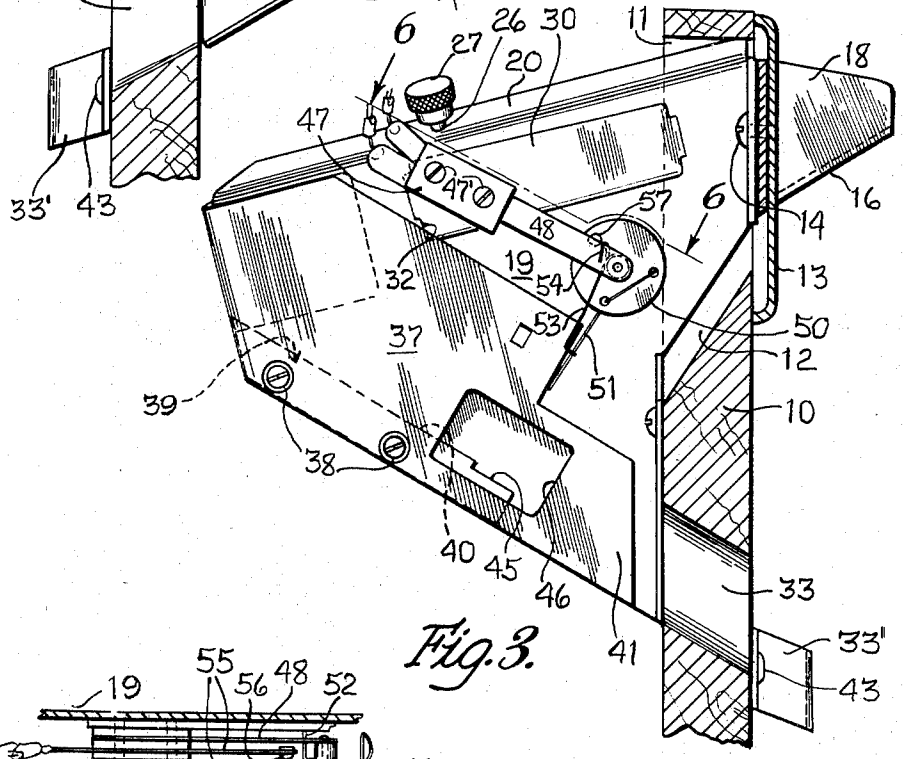

Fig. 3.

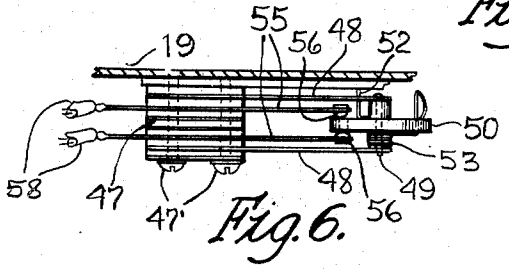

Fig. 6.

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UNITED STATES PATENT OFFICE

2,532,205

COIN SELECTOR

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Application July 23, 1949, Serial No. 106,353

2 Claims. (Cl. 194—102)

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This invention relates to new and useful improvements in coin selectors of the type designed and constructed for use in connection with various apparatuses, such for example, vending machines and coin-controlled amusement apparatuses.

An object of the invention is to seperate certain spurious coins or tokens from genuine coins. An object of the invention is to provide as a part of such coin selector a control switch, the actuator of which is located substantially remotely from the entrance slot of the coin selector so as to prevent fraudulent operation thereof as well as to prevent interference with the same by reason of the passage of dust, dirt or other foreign matter or substance through the coin entrance slot.

Yet another and equally important object of this invention is to associate with a coin selector of the type hereinafter described, a switch constructed in a manner such as permits operation thereof only by engagement with a coin and one which can not be closed otherwise, such for example, by vibration or shaking of the machine by one seeking to fraudulently operate such machine without the deposit of a proper and required coin.

Yet a further and equally important object of the invention is the provision in a coin selector of an arrangement which will prevent the actuation of the switch by the use of a genuine coin tied to the end of a string and fed through the coin pathway with the intent of retracting the genuine coin after it has effected the operation of the control switch.

Another object of this invention is the provision of a coin selector of an improved construction, one comprising relatively few parts and of a size which permits convenient installation in an associated apparatus.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction and in which:

Fig. 1 is fragmentary perspective view of a mounting panel or door upon which the coin selector embodying this invention is mounted;

Fig. 2 is a sectional detail view through the panel or door illustrating a side elevational view of the coin selector with a wall thereof removed;

Fig. 3 is a fragmentary sectional detail view through such panel or door illustrating an opposite side elevational view of the coin selector from that shown in Fig. 2;

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Fig. 4 is a sectional detail view taken substantially on line 4—4 of Fig. 2;

Fig. 5 is a sectional detail view taken substantially on line 5—5 of Fig. 2; and

Fig. 6 is a fragmentary sectional detail view taken substantially on line 6—6 of Fig. 3.

The preferred form of construction for carrying my invention into effect is illustrated in the accompanying drawings.

In this connection, a mounting panel or door of a machine with which our coin selector is adapted to be associated is indicated at 10. This mounting panel 10 is provided at its upper end portion with an opening 11. The portions of the mounting panel around the opening are removed as at 12 to provide accommodations for adjacent portions of the coin selector. This opening 11 is closed by an escutcheon plate 13 secured in any suitable manner, as by means of screws or bolts 14, to the mounting panel 10.

This escutcheon plate 13 is provided with an elongated slot 15 which extends diagonally with respect to a vertical line through the escutcheon plate 13. This opening 15 constitutes the coin entrance slot and is of a length and width to permit passage therethrough only of a coin of no greater than proper or required diameter and width.

To facilitate guiding the coin for passage through the opening 15 there is provided a guide plate 16 having a shelf 17 on which the coin is mounted edgewise with a side thereof tilted in flat contact with the vertical wall 18 of the guide plate 16. Like the opening 15, the guide plate extends diagonally with respect to the hereinbefore stated vertical line through the escutcheon plate 13 thus tilting the coin at an angle with respect to such line in its movement through the selector for reasons hereinafter more apparent.

My improved coin selector comprises a side wall 19 of substantially triangular formation in side elevation and providing at its upper and lower edges inwardly turned flanges 20 and 21. Secured in spaced relation with respect to the side wall 19 and of like formation, is a removable side wall 22 having flanged portions 23 overlapping the flanges 20 and 21 joined together by an end flange 24. In the top flange of the flanges 23 is provided an open slot 25 which is adapted to receive the shank 26 of a thumb screw 27 the latter serving to removably attach the side wall 22 in spaced relation to the wall 19 when threaded

into the flange 20 of the wall 19 upon the adjacent flange 23 of the wall 22.

The two side walls 19 and 22 when secured together in the manner shown in Fig. 1 of the drawings provide an enclosure for various coin pathways.

One of these pathways is indicated at 28. This pathway is the coin receiving pathway, receiving the coin as it passes through the slot 15. This pathway 28 includes a track bar 29 formed substantially rectangular in cross-section and secured to the inner surface of the wall 19 in a predetermined position beneath an offset portion or recess 30. The end 31 of this recess 30 terminates into an abutment 32. This abutment 32 functions to deflect a coin of a diameter less than the required diameter from the coin receiving pathway into a rejection pathway.

This rejection pathway which is indicated at R, includes the flange 21 which provides a track for the rejected coins. This track is inclined in a direction toward an outlet slot 33 formed in the mounting panel 10.

For reasons hereinafter pointed out, the track bar 29 has one end portion angled to provide an abutment finger 34 extending laterally from the inside surface of the wall 19. Such wall 19 at the inner end portion of the receiving pathway 28 provides a rectangular opening 35 which communicates with an acceptance pathway 36 provided by a plate 37 secured to the side wall 19 in spaced relation with respect thereto by means of screws 38. A bar 39 which separates the plate 37 from the wall 19 provides a track 40 for the accepted coins.

This bar 39 terminates short of the end 41 of the plate 37 to provide an acceptance slot 42 through which the accepted coin passes out of the selector into a suitable collector box or container (not shown).

A rejected coin is retained partially within the return slot 33 by a plate 33' secured to the mounting panel 10 as at 43. This rejected coin or token is retained by this plate 33' in a position where it can be readily removed by the operator of the machine with which the coin selector is associated. A diagonal shield 44 covers a portion of the opening 35 so as to direct the acceptable coins into the acceptance pathway 36.

As shown particularly in Figs. 1, 3, and 5, the coin selector thus far described is mounted diagonally with respect to the panel 10, thus disposing the pathways at an angle such that coins rolling by gravity through these pathways will bear against or hug the inside surface of the wall 19 and the plate 37.

The distance between the track edge 29' of the track bar 29 and the top edge 30' of the offset portion 30 is less than the diameter of a proper coin acceptable for the actuation of a control switch to be hereinafter described. This distance, however, is greater than the diameter of a coin having a diameter less than that of such proper coin. Consequently, an improper coin of a diameter of less than that of the proper coin will, by reason of the diagonal position of the selector with respect to a vertical line through the panel, be caused to tilt against the side wall 19 and be projected into the offset recess 30, with the result that such improper coin will strike the abutment 32 and be deflected in a direction away from the side wall 19 off the track bar 29 into contact with deflecting finger 34 from whence the improper coin will rebound into the rejection pathway R and from thence through the return

slot 33 in a position to be reclaimed by the operator of the machine with which the coin selector is associated.

In order to prevent coins of a diameter slightly less than that of the required coin from wedging between the guide edge 30' at the forward portion of the recess 30 and the track bar 29, the edge 30' of such recess diverges upwardly, slightly, with respect to the track bar 29 in a direction toward the terminal of the receiving pathway. Any such coin under its own momentum will free itself by moving in the enlarged area of the recess 30 created by the diverging edge 30'.

A proper coin in gravitating along the track bar 29, being of a diameter greater than the distance between the track edge 29' and the edge 30' of the offset recess 30, will be guided to the opening 35 and pass therethrough into the acceptance pathway 36.

If a string in some manner be tied or attached to this proper coin with the intent to withdraw the coin back through the coin pathway to be reclaimed by the operator prior to passage of the coin through the slot 42 and after actuation of a control switch hereinafter described, such retraction will be prevented by reason of the fact that the coin at the point of beginning of its retraction will strike against a stepped end portion 45 of the track bar 39. As the attached coin is in a tilted position against the plate 37 the stepped portion 45 will, upon attempted withdrawal of the attached coin tend to deflect such coin outwardly through an elongated opening 46 formed in the plate 37 and thereby prevent such coin from being retracted through the coin pathway. If sufficient exertion is applied to the string by the operator, in an attempt to retract the coin the string may become broken by reason of the fact that the coin will be blocked in its retracted movement by the stepped portion 45 and the lower end portion of the arm 51 and upon such detachment the coin will drop into the coin box.

The control switch hereinbefore mentioned, as shown particularly in Fig. 6, comprises a mounting block 47 connected by means of mounting screws 47' to the side wall 19, and may, if desired be protected by a guard plate 19'. This mounting block 47 carries a pair of spaced arms 48 perforated at their outer end portions to receive a shaft 49. On this shaft 49 is rotatably mounted a disk 50 of insulating material. Carried by and depending from the disk 50 is a finger 51. The lower end portion of this finger 51 extends into the path of coins gravitating down the coin pathway 36 and has an angled end portion 52 (Fig. 4) which is adapted to be engaged by such coins.

Rotation of the disk 50 in an anti-clockwise direction as viewed in Fig. 3, is resisted by a spring 53 having one end portion 54 bearing against an adjacent arm of the arms 48 and an opposite end portion connected in any suitable manner to the finger 51.

The mounting block 46 carries a pair of conductor arms 55 arranged in parallel spaced relation with respect to and insulated from each other and provided at their outer end portions with contact heads 56 which yieldably bear against the adjacent sides of the disk 50. These contact heads 56 are adapted to engage a conductor 57 carried by the disk 50 and extending therethrough whereby when the heads 56 engage the conductor 57 a circuit will be completed between the conductor fingers 55, to which conductor fingers 55 are connected the conductor wires 58.

In connection with the control switch, it will

be noted that when the disk **50** is rotated in an anti-clockwise direction by action of a coin engaging the finger **51**, the conductor **57** will be moved into a position to contact the heads **56** by a sliding or wiping action, thus resulting in maintaining the contact heads **56** clean and reducing the possibility of arcing. Inasmuch as it is necessary that the disk **50** be rotated to bring the conductor **57** into engagement with the contact heads **56**, it is apparent that vibrations set off in the machine with which the switch is associated, either manually or by the operating mechanism of the machine, cannot effect rotation of the disk **50**. By reason thereof, the machine cannot be fraudulently actuated by one subjecting the machine to vibration or by mere shaking of the machine.

The relation between the arms **55** and disk **50** is such as results in an evenly balanced disk requiring for its rotation the mere engagement between a coin and the finger **51**.

A positive contact between the conductor **57** and the contact heads **56** is assured by reason of the yieldable bearing of these contact heads against adjacent sides of the disk **50** by the resilient character of the arms **55**.

The advantages of my improved coin selector and the actuating switch are fully apparent from the description herein set forth.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail byself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A coin selector of the class described comprising an enclosure having means for connection to a stationary support in a laterally tilted position with respect to a vertical plane and having therein a downwardly inclined coin receiving pathway tilted laterally with respect to said vertical plane, a rejection pathway having connection and reversely inclined with respect to the receiving pathway and likewise tilted laterally with respect to said vertical plane and a coin acceptance pathway having connection with said receiving pathway at the point of connection between said receiving pathway and said rejection pathway and reversely inclined with respect to said receiving pathway and extending parallel with the rejection pathway, deflecting means at said point of connection for deflecting acceptable coins into said acceptance pathway from said receiving pathway, a side wall of said enclosure providing an elongated substantially offset recess communicating with said pathway and extending substantially parallel to and at one side of said receiving pathway and providing at one end thereof an abutment, a track secured to said wall below said recess and on which acceptable coins gravitate through said receiving pathway into said acceptance pathway, the distance between said track and the top longitudinal edge portion of the recess being greater than the diameter of a non-acceptable coin to permit said non-acceptable coin to tilt by gravity into said recess for gravitation upon said track into striking engagement with said abutment for deflecting said non-acceptable coin into said rejection pathway.

2. The combination substantially set forth in claim 1 wherein the top longitudinal edge of said offset recess and said track diverge in the direction of gravitation of coins on said track.

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