

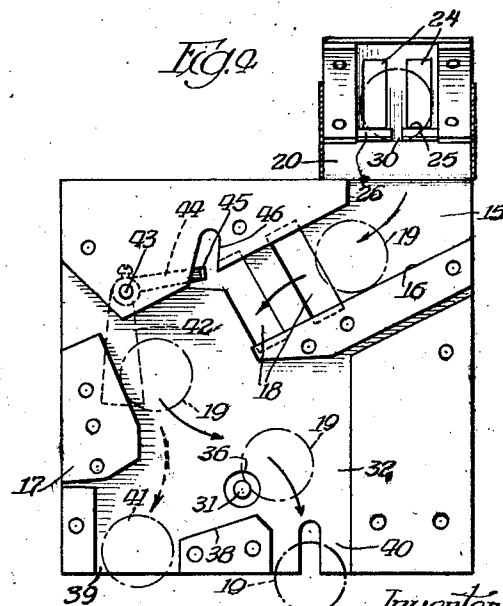
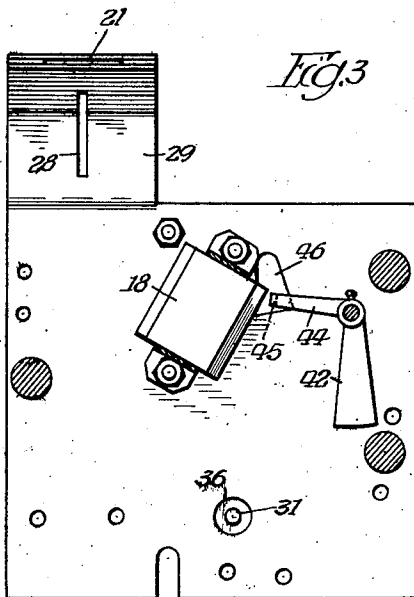
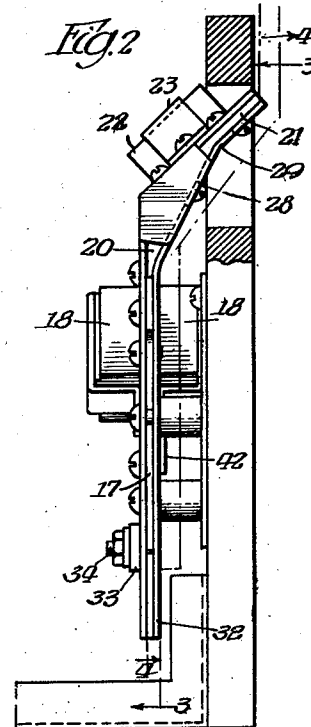
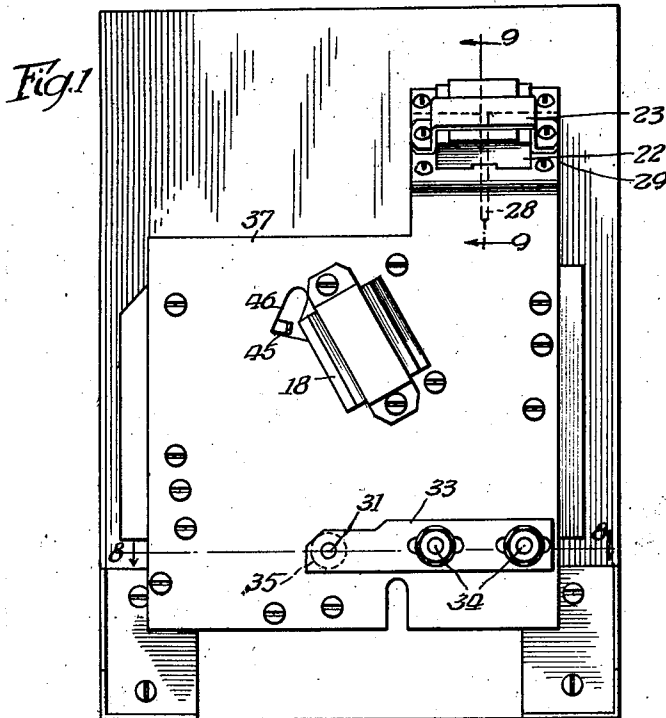
June 22, 1943.

A. E. GEBERT ET AL
COIN DETECTING APPARATUS

2,322,434

Filed Dec. 23, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5

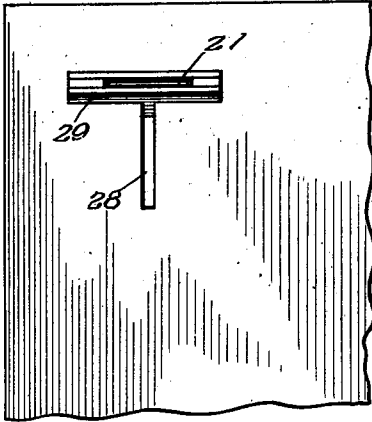


Fig. 6

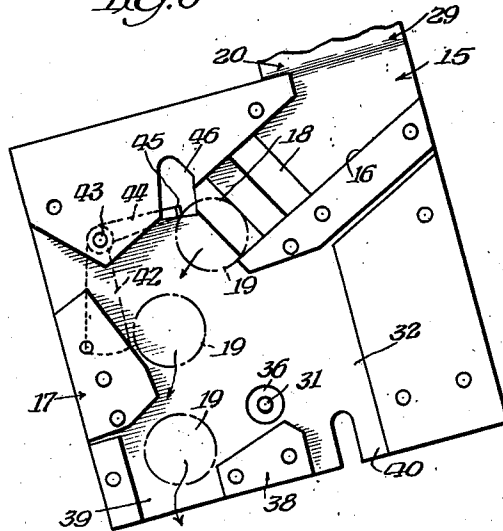


Fig. 7

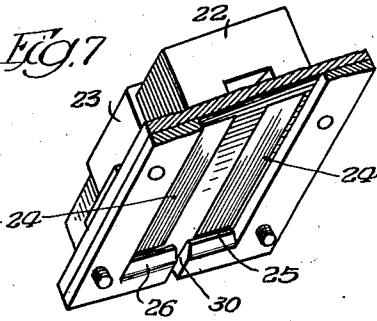


Fig. 11

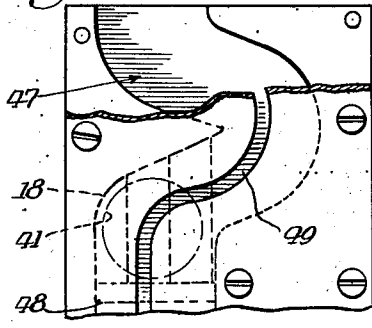


Fig. 8

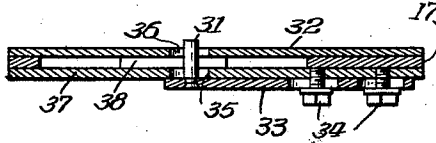


Fig. 9

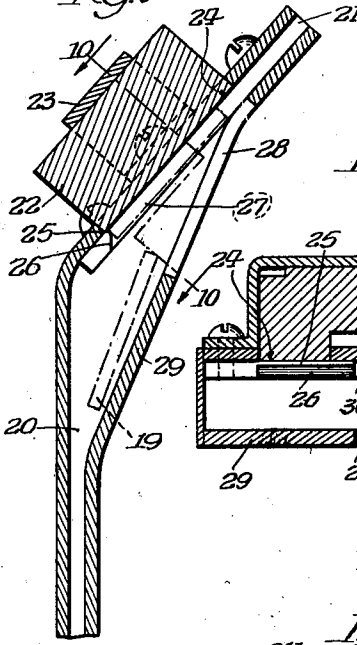
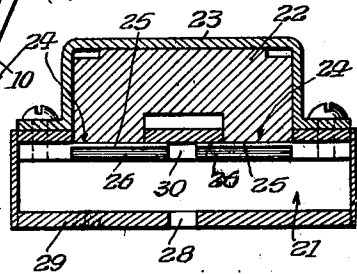


Fig. 10



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UNITED STATES PATENT OFFICE

2,322,434

COIN DETECTING APPARATUS

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Application December 23, 1939, Serial No. 310,748

3 Claims. (Cl. 194—100)

This invention relates to improvements in coin detecting or selecting mechanism, particularly adapted though not necessarily limited in use for vending or coin actuated mechanism which requires the deposit of a coin or token to render the same operative.

In devices of this character it is customary to provide a chute or runway along which the coin or token travels before it is deposited or delivered into the operating mechanism.

It is also customary to provide mechanism arranged adjacent the path of travel of the coin or token along such runway to separate improper tokens, coins or checks from proper ones so that the proper ones will be delivered into the machine while the improper ones will be rejected or prevented from entering the operating mechanism of the machine.

It is one of the objects of the present invention to provide an improved detecting mechanism in which the coins to be separated will roll upon their edge past the magnet, or between two magnets, or through a magnetic field in a manner that the magnet can exert its influence upon the coins, the action of the magnet or magnetic field influencing the speed of travel of the coins or checks along the runway or chute according to the nature and weight of the coin, with a resulting influence upon the travel of the token.

A further object is to provide improved means for obtaining an effective separation or detection of the coins even though the machine should be tilted.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a view in elevation taken from one side of the mechanism.

Figure 2 is a right hand end elevation of Figure 1.

Figure 3 is a detail sectional view, taken on line 3—3 Figure 2, with parts omitted.

Figure 4 is a view of the opposite side of Figure 3 and as taken on line 4—4 Figure 2.

Figure 5 is a detail view in elevation of the entrance portion of the coin slot.

Figure 6 is a view similar to Figure 4, with parts omitted and showing the mechanism in a tilted position.

Figure 7 is a detail perspective view partly in section of a portion of the coin entrance slot.

Figure 8 is a detail sectional view taken on line 8—8 Figure 1.

Figure 9 is an enlarged detail sectional view taken on line 9—9 Figure 1.

Figure 10 is an enlarged detail sectional view taken on line 10—10 Figure 9.

Figure 11 is a view partly in elevation, partly in section, and partly broken away of another form of coin entrance slot.

Referring more particularly to the drawings, the numeral 15 designates generally a runway or chute along which the coins are adapted to travel and to roll on their edge, the runway being provided with a bottom 16 which is in alignment with but terminates short of a bounding block or surface 17.

A magnet 18 is arranged adjacent the side of the runway and creates a magnetic field through which the coin or token 19 passes, the poles or free ends of the magnet projecting through suitable openings in the wall of the runway.

This runway is arranged in an inclined position and may be supported in any desired or suitable manner. The runway is provided with an entrance opening 20 and arranged in alignment with the entrance 20 is a coin receiving slot 21 which has communication with said entrance. This entrance slot 21 is preferably arranged in an inclined position. A magnet 22 is arranged adjacent one side of the entrance slot and is held in position in any suitable manner such as by means of a band or strap 23.

The poles or free ends 24 of the magnet project through suitable openings in the wall of the entrance slot 21 and adjacent the bottom of such openings is arranged a shoulder 25 having an inclined or beveled portion 26, so that when a coin 19 which is of a proper denomination is inserted in the slot 21 it will strike and be deflected by the inclined portion 26, into the entrance opening 20 of the chute or runway 15.

However, when an improper token or slug 27 is deposited in the entrance slot 21, if such slug is of a metallic composition, it will be attracted by the poles or ends 24 of the magnet so that the periphery of the slug will engage and rest upon the shoulder 25 and the slug will thereby be prevented from passing into the opening entrance 20 of the runway.

In these circumstances and should it be attempted to dislodge the slug 27 from the magnet 22, by the insertion of other tokens or by an implement inserted into the slot 21 to force the

slug 27 downwardly into the runway, the shoulder 25 upon which the slug rests will prevent such operation, due to the fact that the magnet will hold the slug in a position that it will rest upon the shoulder.

In the event that such a slug is inserted into the slot 21 and in order to remove the same, there is provided a slot 28 in the casing wall 29, a portion of which slot is in alinement with a slot 30 that passes through the shoulder 25 and the inclined portion 26 thereof.

With this arrangement and when a slug 27 is held adhered to the magnet 22, an implement may be inserted through the slot 28 below the slot 30 and then by raising the implement so as to move the same towards the other end of the slot 28, the end of the implement will pass through the slot 30 and engage the edge of the slug 27 and raise the latter, forcing the same along the magnet so as to project the slug a sufficient distance beyond the entrance end of the slot 21 to permit the operator to grasp the slug and withdraw it from the slot.

Co-operating with the bounding block 17 is a pin or abutment 31 which passes through a wall 32 of the mechanism and is disposed in a position between the bounding block 17 and the proximate end of the bottom 16 of the runway or chute 15.

This pin 31 is secured in a stationary position but is preferably mounted upon a slide or member 33 adjustably held in position in any suitable manner, such as by means of fastening devices 34, preferably in the form of screws or bolts, and the pin 31 projects through registering holes or apertures 35-36 in the walls 32 and 37 of the mechanism. The openings 35-36 are of a diameter somewhat greater than the diameter of the pin 31 so as to permit of a changing of position of the pin 31 with respect to the bounding block 17.

Beneath the pin 31 is a deflector member 38 for causing the coin which strikes the pin 31 in manner to be hereinafter described, to be directed through the outlet 39 or the outlet 40 according to the trajectory of the coin and the force with which the coin will strike the pin or abutment 31.

When the coin is deposited in the coin slot 21, if it should be of a proper denomination and weight, such as the coin 19 in Figure 4, it will travel down the chute or runway 15 rolling upon the bottom 16 thereof and will be projected from the bottom 16 of the runway so that it will strike the bounding block 17. The passage of the coin down the runway or chute will be controlled by the magnetic field from the magnets 18.

If a coin is of the proper value it will strike the bounding block 17 with sufficient force so that it will rebound and will strike the pin 31 in such a manner that the coin 19 will be directed over the pin 31 to the outlet 40, at which time and under such conditions the member 38 will serve as a means for directing the coin into the outlet 40, and after the coin bounds over the pin 31. The guiding of the coin by the walls of the outlet 40 is necessary so that the coin will be properly placed or positioned with respect to the mechanism which the coin is supplied to operate after it leaves the passage.

Should, however, a token of improper value which is not affected by the magnetic field such as the token 41 in Figure 4, be deposited into the slot 21, it will travel down the runway and through the magnetic field and after it passes from the runway it will strike the bounding block

17, but, will not rebound with sufficient force to cause it to pass over the pin 31. On the contrary, the force with which the improper token will receive from the bounding block 17 will be only sufficient to cause the spurious coin to drop upon the member 33 to be directed through the outlet 39.

If in this operation the spurious coin should strike the pin 31, it will engage the same on the side adjacent the outlet 39. If, however, a spurious coin such as brass, aluminum, copper or other material which is affected by the magnetic field is deposited in the coin chute, its speed of travel through the magnetic field will be retarded. The result of such retardation will be to cause such coin to strike the bounding block 17, but the rebound force thereof will not be sufficient to cause it to pass over the pin 31, but will be directed into the outlet opening 39.

In order to prevent the operation of the mechanism and the delivery of any coin or token to the outlet opening 40 in the event that the mechanism should be tilted, to the position shown in Figure 6, there is provided an additional abutment arranged preferably adjacent the outlet end of the chute and above the bottom 16 of the chute. This additional abutment preferably comprises a member 42 pivotally mounted upon the wall 37, as at 43. This member is provided with an arm 44 the extremity 45 of which projects through an opening 46 in the wall of the mechanism adjacent the end of the runway and extends for a considerable distance in a direction across the runway. The weight of the member 42 is such that when the parts are in the position shown in Figure 4, the extremity 45 will assume a position with respect to the bottom 16 of the chute or runway 15 so as not to interfere with the discharge of the coin 19 from the chute 15, and the coin will travel with sufficient force such that when it strikes the bounding block 17 its trajectory will cause it to strike the pin 31 in such a manner that the coin will be directed to the outlet 40.

When, however, the mechanism is tilted to the position shown in Figure 6, the member 42 will be caused to move about its pivot 43 so that the extremity or abutment 45 will be moved toward the bottom 16 of the runway or chute 15 so that the space therebetween is of a dimension less than the diameter of the coin 19.

In this position of the parts when the coin 19 travels down the chute 15 rolling upon the bottom 16 it will, when it reaches the extremity of the bottom 16 and before it passes therefrom, strike the extremity or abutment 45 and thereby swing the same together with the weighted member 42 about the pivot 43. This will act as a brake or a stop mechanism to retard the travel of the coin with the result that when the coin then passes from the chute 15 and strikes the bounding block 17, the impact will be such that sufficient force will not be imparted to the coin 19 to cause it to rebound and strike the pin 31 in a manner to direct the coin through the opening 40, but will strike the pin 31 in such a manner that the coin will be directed to the outlet 39.

When the mechanism is then arighted or placed in a vertical position, the weighted member 42 will move the extremity or abutment 45 back to its normal position, as shown in Figure 4, so as to provide a sufficient space between the abutment 45 and the end of the bottom 16 of the chute 15 so as to permit the coin to pass through

such space without contacting the extremity 45 of the member 44.

In order to prevent the insertion of a card or other article into the coin slot 21 so as to cover the poles of the magnet and thereby permit the insertion of spurious coins, the entrance slot may be shaped to form a tortuous passage 47 as shown in Figure 11, the magnet 18 being preferably arranged adjacent the discharge outlet end 48 of such tortuous passage.

In this form of the invention the slot 49 in one of the walls of the mechanism, which permits the insertion of an implement to remove a coin which has adhered to the magnet or which has been held within the slot, is arranged in the wall of the passage and conforms to the configuration of this passage 47, a portion of the slot 49 being in register with the slot 30 and also extending below the slot 30 so as to permit the implement to be inserted beneath the lowermost edge of the coin or token.

The pin 31 is preferably made adjustable but is maintained in a fixed adjusted position so as to enable the setting of the mechanism for the proper handling of certain coins.

In the event that the mechanism is tilted in the direction opposite to the direction shown in Figure 6, gravity will prevent the coin from rolling down the chute 15 if the mechanism is tilted to too great an angle, but in the event that it should roll down the chute under these conditions there will not be sufficient speed imparted to the coin to cause it to strike the bounding block with sufficient force that would cause the coin to rebound and it will then drop down and pass out of the outlet 33.

While the preferred forms of the invention have been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:

1. A coin selecting mechanism for separating coins and like metallic disc shaped elements, embodying a chute along which they travel, means adjacent the path of travel of the same in the chute to provide a magnetic field, to control their speed of travel, a bounding block in advance of the delivery end of the chute to be contacted by said elements, and a pivoted member adjacent the discharge end of said chute and co-operating with a wall of the chute to form a space through which the said elements freely pass to the bounding block and when the said mechanism is in a normal position, said member also operating, when said mechanism is tilted, to restrict said space to impede the trajectory of said elements from the chute to maintain said

elements, when they are discharged from the chute, out of contact with said block.

2. A coin selecting mechanism for separating coins and like metallic disc shaped elements, embodying a chute along which they travel, means adjacent the path of travel of the same in the chute to provide a magnetic field, to control their speed of travel, a bounding block in advance of the delivery end of the chute to be contacted by said elements, and a pivotally mounted member adjacent the discharge end of said chute and co-operating with a wall of the chute to form a space through which the said elements freely pass when the said mechanism is in a normal position, said member swinging into a position when said mechanism is tilted, to be engaged by said elements as they pass from the chute to the bounding block, to retard their speed of travel and thereby control their trajectory to maintain said elements against contacting said bounding block.

3. A coin selecting mechanism for selecting coins and like metallic disc-shaped elements embodying an inclined chute along which they travel, a bounding block arranged in alinement with but spaced from the delivery end of the chute to form a passage for the coins therebetween, the coin contacting face of said block being inclined, a deflector member in said passage defining in the latter two discharge outlets, said deflector member being disposed below and spaced a substantial distance from said block and the outlet end of said chute, but in alinement with the portion of the space that is between the block and the end of the chute, an abutment separate from and disposed adjacent, but spaced above said deflector and also disposed intermediate the said discharge outlets, to be impacted by a coin impelled by said bounding block, said abutment being also disposed intermediate the outlet end of the chute and the bounding block, and operating to impel the coin in a direction toward one or the other of said discharge outlets, according to the point at which the coin strikes said abutment, the said deflector operating to guide the coin to one or the other of said discharge outlets after it strikes said abutment, and a pivoted member adjacent said chute and co-operating with a wall of the chute to form a space through which the said elements freely pass to the bounding block when the said mechanism is in a normal position, said member operating, when said mechanism is tilted, to restrict the last said space to impede the trajectory of said elements from the chute towards said bounding block to maintain said elements against being impelled by the said bounding block.

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