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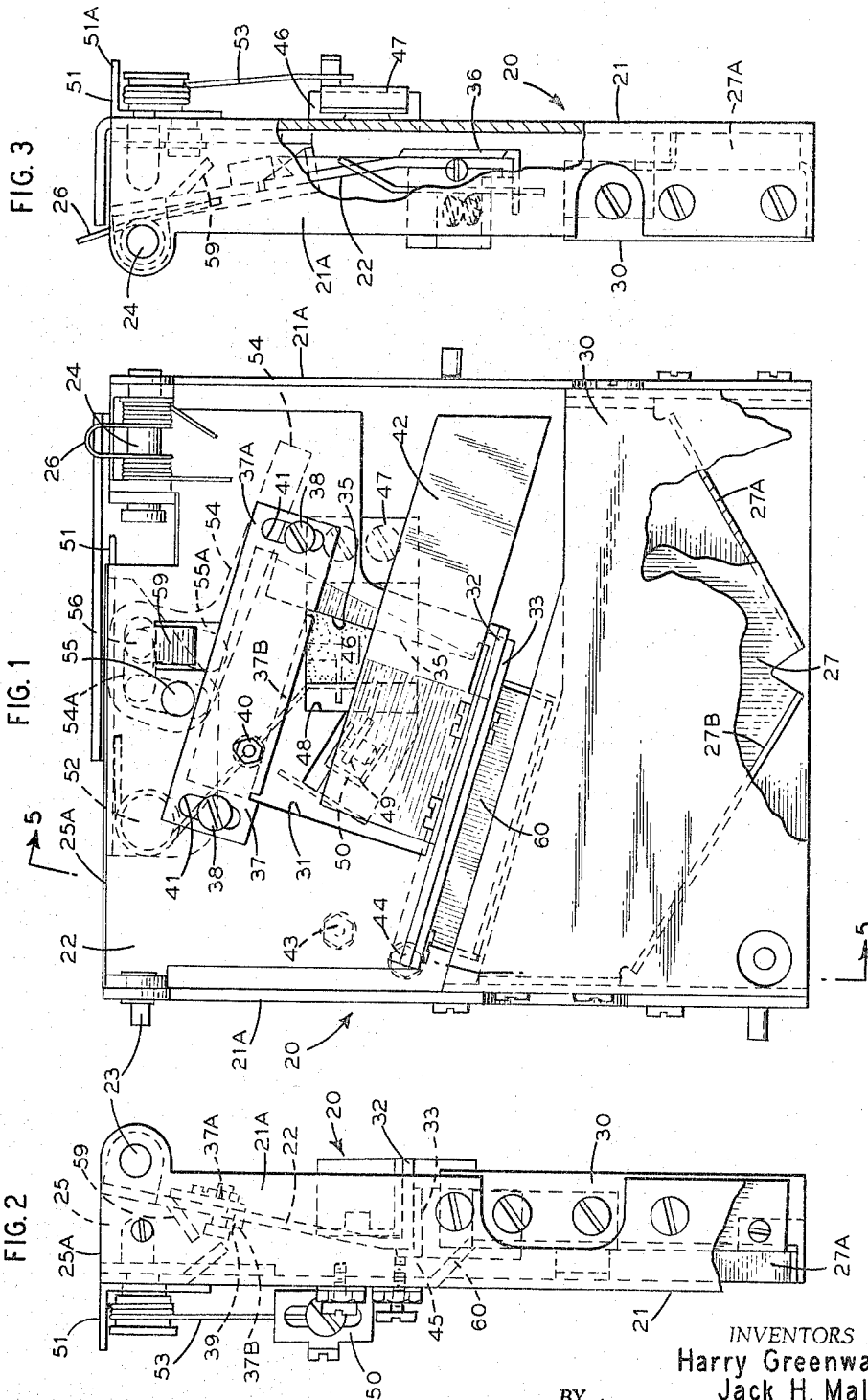
H. GREENWALD ETAL

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COIN REJECTOR MECHANISM

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3 Sheets-Sheet 1



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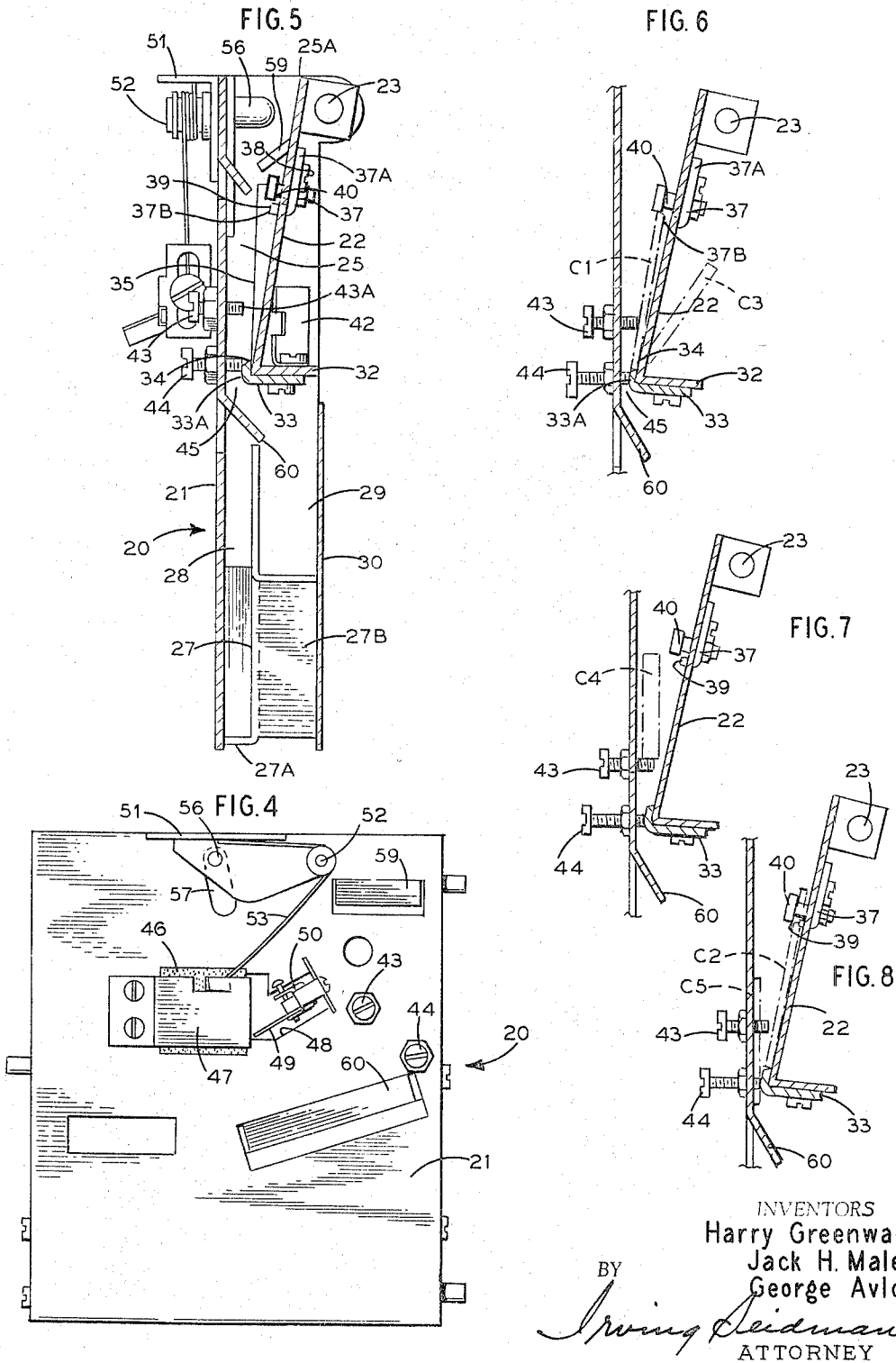
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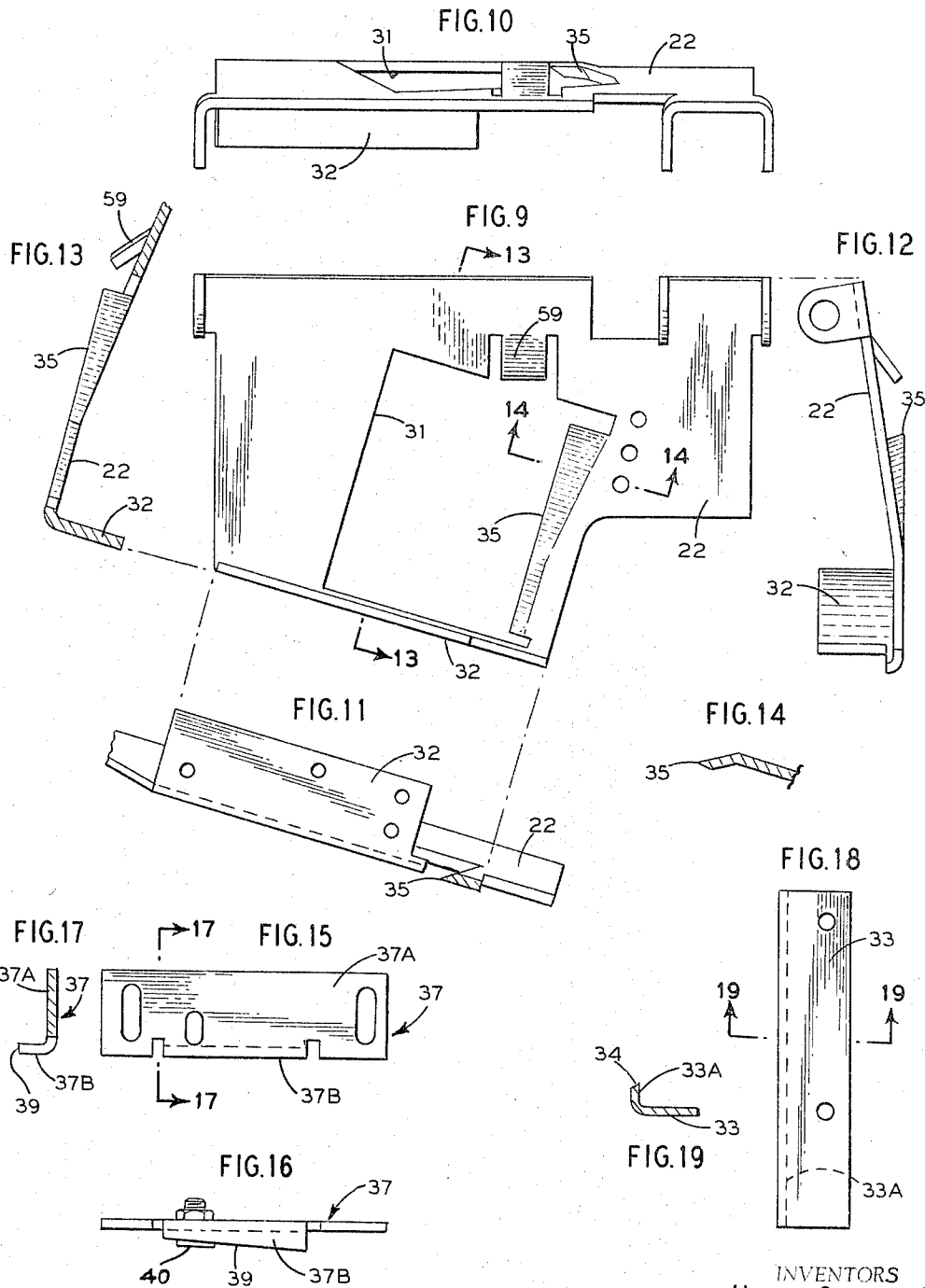
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COIN REJECTOR MECHANISM

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3 Sheets-Sheet 3



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3,289,802

COIN REJECTOR MECHANISM

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19 Claims. (Cl. 194—99)

This invention relates in general to a coin rejector mechanism, and more specifically to a mechanical coin rejector mechanism which is adapted to be used in conjunction with a coin meter of a vending machine or the like.

An object of this invention is to provide an improved coin rejector mechanism that is relatively simple in construction, positive in operation, and relatively inexpensive to fabricate.

Another object is to provide a coin rejector mechanism with means for mechanically hanging up coins of improper size within the coin chute of the rejector mechanism and thereby prohibit the actuation of a machine cycle by such improper sized coin and whereby said rejector mechanism is rendered inoperative until cleared of the hung up improper sized coin.

Another object is to provide a mechanical coin rejecting mechanism constructed and arranged so that upon the clearing of the same, the improper sized coins are directed to the coin return chute of an associated vending machine or the like.

Still another object is to provide a mechanical rejector with means for gauging both the thickness and the diameter of a coin so that only coins of proper diameter and thickness are permitted to pass therethrough.

Still another object of this invention is to provide a coin rejector wherein the means for gauging the thickness and diameter of the coin may be readily adjusted for detecting a given size coin within a given range of coin thicknesses and diameters.

Still another object is to provide a coin rejecting mechanism with means for detecting washer-type slugs and/or coin like slugs formed of a ferrous material.

The foregoing objects and other features and advantages are attained by a coin rejector mechanism, adapted for use with a coin meter of a vending machine or the like that is constructed and arranged to permit only properly sized coins to be passed therethrough and to reject improperly sized coins so that the cycle of the associated vending machine is initiated only upon the passage of an acceptable coin through the coin rejector. The coin rejector mechanism comprises a fixed mounting plate and a hinged plate pivotally connected thereto, wherein the hinged plate is inclined downwardly and inwardly toward the fixed plate to define therewith a coin chute having an inclined side wall portion. A means is provided for normally biasing the hinged plate toward the fixed mounting plate so that the former is inclined relative to the latter. Beneath the converging coin chute means are provided for defining an acceptable coin passageway and an unacceptable coin passageway juxtapositioned thereto. Accordingly, the coin chute is provided with means defining a coin discharge opening through which the properly sized coins are permitted to pass into the acceptable coin passageway which leads to a coin receptacle for receiving the same. The hinged plate is provided with a cut out portion formed in the inclined plane thereof to define an opening for coins having a diameter which is less than that of an acceptable coin, and thereby rendered unacceptable. Cooperatively associated with the hinged plate and the cutout portion therein is a thickness sizing means formed with an inturn flange, the edge of which defines a ledge disposed

between the hinged plate and the fixed mounting plate to form the bottom of the chute. The ledge is inclined downwardly toward the acceptable coin passageway with the edge thereof angled toward the fixed plate. Accordingly, the angled edge forms the bottom of the coin chute and provides a surface on which the acceptable coins deposited in the chute roll to the coin passageway. A means is provided for varying the spacing of ledge from the fixed wall wherein the spacing defined provide a means for hanging up those coins having an unacceptable thickness, i.e. a thickness which is less than the spacing defined between the wall and the ledge. In this manner, coins of unacceptable thickness become wedged between the hinged plate and the fixed plate. A gauge means is also provided to prohibit the passage of coins of excessive thicknesses through the coin chute.

Cooperatively associated within the sizing plate and connected to the hinged plate is a diameter sizing means. The arrangement is such that the diameter sizing means and thickness sizing means cooperate to gauge therebetween the diameter of the coins. The diameter sizing means is provided with means for hanging up those coins having diameters greater than that for which the coin rejector mechanism is adjusted to accommodate. The arrangement is such that coins having a diameter less than that of an acceptable coin will when rolling down the ledge, due to the inclination of the hinged plate, cause the coin with undersized diameters to be ejected through the cutout formed in the plane of the hinged plate whereby the undersized coin is directed to the passageway for unacceptable coins, and which connects with the coin return of the associated vending machine. If desired, a magnetic means is disposed adjacent a well portion of the coin chute for attracting thereto slugs formed of a ferrous material. Also, a washer detecting dog may be cooperatively associated with the coin chute for hanging up washer-type slugs which are frequently inserted in coin vending machines.

Cooperatively associated with the movable or hinged plate is a rejector lever which when actuated causes the hinged plate to be moved away from the fixed plate. A wiper lever is cooperatively associated with the rejector lever so as to swing pass the magnetic means to dislodge any slug attracted thereto upon the actuation of the rejector lever. Accordingly, means are provided for directing any rejected or dislodged coins upon the actuation of the rejector lever and its associated wiping lever to the unacceptable coin passageway that connects to the coin return of an associated vending machine.

A feature of this invention resides in the provision of a coin rejecting mechanism having an improved cooperating means for gauging both the thickness and diameter of a coin so that only coins having a proper diameter and coin thickness are permitted to pass therethrough.

Another feature of this invention resides in the provision of a coin rejecting mechanism having an improved means for detecting variations in the thicknesses of coins passing therethrough.

Another feature of this invention resides in the provision of a coin rejecting mechanism having improved means for gauging the diameter of a coin so that only coins of proper diameter size may be passed therethrough.

Another feature of this invention resides in a coin rejecting mechanism in which the means for gauging the thickness and the diameter of a given coin may be readily adjusted for accepting a given coin falling within a given range of coin sizes.

Still another feature of this invention resides in a coin rejecting mechanism in which improperly sized coins are caused to be wedged or hung up in the coin chute so as to prohibit the same from initiating the cycle of an asso-

ciated machine until the rejecting mechanism has been cleared of such wedged or hung up coins.

It is another feature of this invention to provide means for directing the rejected coins to coin return passageway of the rejector mechanism.

Other features and advantages will become more readily apparent when considered in view of the drawings and description in which:

FIGURE 1 illustrates a front elevation view of the coin rejecting mechanism of the instant invention.

FIGURE 2 is a left end view of FIGURE 1.

FIGURE 3 is a right end view of FIGURE 1.

FIGURE 4 is a rear elevation view of coin rejecting mechanism of FIGURE 1.

FIGURE 5 is a sectional view of the coin rejecting mechanism taken along line 5—5 on FIGURE 1.

FIGURE 6 is a fragmentary sectional view illustrating the position of a coin passing therethrough.

FIGURE 7 is a view similar to that of FIGURE 6 showing the stoppage of a coin with too great of thickness.

FIGURE 8 is a view like FIGURE 7 showing the stoppage of a coin having a thickness less than that of an acceptable coin.

FIGURES 9 to 12 are respectively the detail front, plan, right end, and bottom view of the hinged plate.

FIGURES 13 and 14 are section details taken along lines 13—13 and 14—14 respectively on FIGURE 9.

FIGURES 15 to 17 are details of the diameter sizing means.

FIGURES 18 and 19 are details of the thickness sizer means.

Referring to the drawings there is shown the coin rejecting mechanism 20 of the present invention. The coin rejecting mechanism comprises a fixed or mounting plate 21 having laterally bent flange portions 21A extending along the opposed side edges thereof. Connected between the opposed flanges 21A is a hinged plate 22. The hinge plate 22 pivotally connected between the opposed flange portions 21A by means of hinge pins 23, 24. As shown, the hinged plate 22 is connected adjacent the upper end of the fixed plate 21 so that in its normal position, the hinged plate 22 is inclined or angled downwardly and toward the fixed plate 21 to define therebetween a coin chute 25 which is substantially V shaped in cross-sectioned, as best seen in FIGURE 5. Accordingly, the coin chute 25 is opened at the upper end 25A, the open end thereof being disposed in alignment with the coin insert passageway of a coin meter (not shown). A spring means 26 coiled about hinge pins 24 is utilized to exert a bias or force on the hinged plate 22 to normally maintain the free lower end thereof biased in the direction of the fixed plate 21.

Between the opposed flanges 21A of the fixed plate 21 and located immediately below the lower edge of the hinge plate 22, there is provided a coin guide plate 27 to define a pair of juxtaposition side-by-side coin passageways 28, 29 as best shown in FIGURES 1, 2, 3, and 4. The coin guide plate 27 is provided with a V-shaped bottom edge portion in which the opposed edges thereof are provided with oppositely bent flanges 27A, 27B which define an inclined bottom wall for the respective coin passageways 28, 29. Thus the passageway 28 defined between the coin guide plate 27 and fixed plate 21 defines a passageway or chute for receiving the acceptable or properly sized coins which are permitted to pass through the coin rejector. The passageway 29 defined by the coin guide plate 27 and a guide cover 30 secured between the flanges 21A of the fixed plate 21 define the coin passageway or chute in which the unacceptable or improperly sized coins are directed. Accordingly, the passageway 29 for receiving the unacceptable coins is adapted to connect with the coin return chute (not shown) utilized in conjunction with the coin rejecting mechanism herein described.

In accordance with this invention the plane of the hinged plate 22 is provided with a cutout portion 31 as shown in FIGURE 1. Also, the lower portion of the hinged plate 22 is provided with the laterally bent flange 32 which is inclined in the direction of the coin passageways 28, 29 as shown in FIGURE 1. A thickness sizing means 33 is connected to the inclined flange 32 of the hinge plate 22 as best seen in FIGURES 5 and 6. The sizing means 33 comprises a plate which is secured to the inclined flange 32 of the hinged plate 22 and which is provided with laterally bent portion 33A to define a ledge 34 interposed between the hinged plate 22 and the fixed plate 21 of the coin rejector mechanism. Accordingly, the arrangement is such that the ledge 34 defined by the bent portion 33A of the sizing means 33 defines an inclined bottom wall for the coin chute 25. In accordance with this invention the upper edge of the ledge 34 is angled or inclined toward the fixed plate (see FIG. 5). Because of the normal inclination of the hinged plate 22 and the angle of the ledge 34, a coin received in the coin chute 25 will tend to assume an inclined or leaning position against the plane of the hinge plate 22 as it rolls down the ledge 34 defining the bottom of the coin chute 25. As will be hereinafter described this inclination of the coin is utilized to cause the rejection of coins having under-sized diameters.

As noted in FIGURES 1 and 5 the hinged plate 22 is provided with an edge 35 portion bent toward the fixed plate 21 to define with the inner surface of the fixed plate 21 a coin discharge opening 36 arranged to communicate with the coin passageway 28 for receiving the acceptable coins as they successfully pass through the coin rejecting mechanism 20 as will be hereinafter described. Accordingly, the coin discharge opening 36 for acceptable coins is disposed immediately above the top opening of the acceptable coin passageway 28.

Cooperatively associated with the thickness sizing means 33 is a diameter sizing means 37. The function of the diameter sizing means 37 is to permit only coins of proper diameter to pass through the coin rejecting mechanism 20. As best seen in FIGS. 1, 5, and 6 the diameter sizing means 37 comprises an angled member which has one leg portion 37A thereof connected to the hinged plate 22 with the other leg portion 37B thereof extending through the cutout of the hinged plate 22. The arrangement is such that the bent leg portion 37B of the diameter sizer means and the ledge of thickness sizer are disposed in parallel, and each defined the upper and lower marginal portions of the cutout portion 31 in the hinged plate 22. As best seen in FIG. 1 the leg portion 37A of the diameter sizing means 37 is secured to the hinged plate 22 by means of suitable screws 38 or the like, while its other leg portion 37B is angularly bent toward the fixed plate 21. The arrangement is such that coins of proper diameter rolling down the inclined ledge 34, which defines the bottom of the coin chute 25, will have the upper tangent point thereof rolling along the edge 39 of inturned leg portion 37B of the diameter sizer, as seen in FIG. 5. As noted, the diameter sizer 37 is provided with an adjustable shoulder stud or finger 40 which is fastened to the sizer plate 37 so that the head of the stud or finger is positioned slightly above the bent leg portion 37B of the diameter sizer 37. The arrangement is such that the proper sized coin diameter will be gauged by the edge 34 of the ledge, and the stud or finger 40 of the diameter sizer means. Accordingly, all coins with proper sized diameters will roll between the projecting stud 40 and the edge 34 of the thickness sizer plate 33. In the event that a coin C2 with too large a diameter is inserted to the coin chute 25, the oversized coin will be prohibited from rolling down the inclined bottom wall 34 of the coin chute by the projecting stud 40 of the diameter sizer means as shown in FIG. 8. When this occurs oversized coin C2 will become hung up in the coin chute between the ledge 34 defining the bottom wall of the chute and the projecting stud 40. To render the coin rejecting mechanism 20 adjustable for op-

eration with differently sized coins, the leg 37A of the diameter sizing means 37 is provided with elongated slots 41 to permit for limited adjustment of the sizer 37 with respect to the hinged plate and the bottom wall of the coin chute. In this manner, the diameter sizing means 37 may be adjusted to accommodate any predetermined coin diameter falling within the adjusting range of the diameter sizer plate.

In accordance with this invention it is to be noted that the inturned flange or leg portion 37B of the diameter sizing member is tapered so that the width thereof is progressively increased as it approaches the coin opening 36. Accordingly, when a coin C1 of proper size is inserted in the coin chute 25 and it begins to roll down the inclined bottom wall 34 thereof, the increasing width of the inturned flange 37B of the diameter sizer plate 37 will cause the inclined coin C1 rolling down the ledge 34 to straighten or to assume an upright position so that it may pass through the coin discharge opening 36 that leads it to the passageway 28 for receiving the acceptable coins.

In the event the coin C3 inserted in the coin chute 25 described is formed with a diameter, which is less than that of an acceptable coin, the undersized coin C3 will be prohibited from reaching the discharge coin opening 36 because the undersized coin C3 will pass beneath the inturned flange 37B of the diameter sizer means and thus will fail to become straightened as it rolls along the ledge. Due to the inclination of the undersized coin as it rolls down the ledge 34 the coin will fall through the cut-out portion 31 in the hinged plate, and is therefore, guided by means of a suitable rail 42 connected to the flange 32 of the hinged plate 22 to the passageway 29 in which unacceptable coins are received. Thus, it will be noted that the co-action of the thickness sizer 33 and the diameter sizer 37 located below and above the cutout portion 31 of the hinge plate 22 respectively function to gauge the diameter of a coin so that only coins of proper diameters are permitted to pass through the coin chute 25 and discharge into the passageway 28 for receiving acceptable coins. Coins C2 with oversized diameter are hung up in the coin chute 25 by the projecting finger 40, and means are provided whereby the same may clear as will be hereinafter described.

In accordance with this invention means are also provided for gauging the coins inserted into the coin chute for proper thickness. The arrangement is such that coins C4 having a thickness greater than that of an acceptable coin is hung up in the coin chute 22; thereby requiring the hung up coin to be subsequently cleared as will be hereinafter described. Coins C5 having a thickness which is less than that of an acceptable coin C1 are caused to be wedged between the hinged plate 22 and the fixed plate 21 thereby prohibiting the same from passing through the coin rejecting mechanism. There, coins C5 are also required to be subsequently cleared as hereinafter described.

The means for gauging the thickness of the coins comprises a pair of adjustable screw members 43, 44. As best seen in FIG. 7, screw member 43 is adapted to gauging those coins C4 which have a thickness greater than that of an acceptable coin, and the other screw member 44 is utilized for gauging the coin C5 having an undersized thickness. As best seen in FIG. 8, the means 43 for determining the over-thick coins comprises a screw which is threaded through a threaded opening in the fixed plate 21 so that the inner end 43A of the screw may be adjustably spaced from the hinged plate 22, the spacing between the end 43A of the screw 43, and the hinge plate 22 determining the maximum thickness of an acceptable coin. Thus if a coin having a thickness greater than the spacing defined between the end of the screw 43 and the hinged plate is inserted in the coin chute, it will be unable to pass therethrough, and the coin will hang up on the screw 43. Thus, coins with too great a thickness will

be prohibited from passing through the coin chute 25 of the coin rejecting mechanism.

Coins C5 having a thickness less than that of the acceptable coin is gauged by means of the other gauging screw 44. This gauging screw 44 is threadably engaged in a tap opening in the fixed plate 22 which is disposed opposite the low end of the hinge plate. The arrangement is such that the end of the gauge screw 44 is adapted to engage the lower edge of the hinge plate 22. Accordingly, by turning the screw 44 in one direction or the other the hinge plate 22 may be pivoted toward or away from the fixed plate. As a result the adjusting screw controls the spacing 45 between the ledge 34 defining the bottom of the chute 25 and the inside surface of the fixed plate 21 as best seen in FIGURE 5. Accordingly, the spacing 45 defined between the ledge 34 and the wall of the fixed plate 21 is utilized to gauge the thickness of undersized coin C5. Coin C5 with undersized thickness, i.e. too thin a coin, is thus caused to be wedged in the spacing 45 between the ledge and the fixed plate. This is attributed to the fact that whenever a coin having a thickness less than that of an acceptable coin is deposited in the coin chute 25, the inclination of the edge 34 of the bottom wall or ledge toward the fixed plate 21 causes the lower end of the too thin coin to become wedged in the space 45. Accordingly, if thickness of the coin is less than the width of the space 45 defined by the adjusting screw 44, the coin will either become wedged between the ledge 34 and the fixed plate 21 or fall through the space 45. Consequently, if it hangs up in the coin chute 25, it will have to be cleared as will be hereinafter described.

In order to prohibit the passage of coins or slugs formed of a ferrous material through the coin rejecting mechanism, a magnetic means is disposed adjacent the coin chute 25 for attracting thereto any such ferrous slug or coin. As shown, a permanent magnet 46 is supported in suitable bracket 47 adjacent to opening 48 provided in the fixed plate 21. Accordingly, any coin rolling down the coin chute 25 and made of ferrous material will be attracted to the permanent magnet 46 so positioned, and thus be prohibited from passage thereof through the coin rejecting mechanism. In such event, the ferrous slug is required to be cleared from the magnet 46 as will be hereinafter described.

Also, a means is provided for prohibiting the passage of washer-type slugs through the coin chute. This is attained by providing a washer stop 49 which is pivotally connected to a suitable bracket 50 connected to the fixed plate 21. Accordingly, the washer stop 49 is provided with a pair of projecting points which project through an opening 48 in the fixed plate 21 and into the coin chute 25 so as to engage any washer-type slug which may be inserted into the coin chute, to prohibit the passage thereof through the coin chute.

In accordance with this invention a means is provided for clearing the coin rejecting mechanism 20 in the event undersized or improperly sized coins are hung up in the coin chute for any of the reasons herein mentioned. The clearing means comprises a reject lever 51 which is pivotally mounted to the fixed plate 21 about a pivot pin 52; and the lever 51 is normally maintained in its inoperative position by means of a spring 53. Accordingly, the spring 53 is coiled about the pivot pin 52 so that one end of the spring is biased beneath the finger portion 51A of the rejecting lever 51 and the other end of the spring 53 is fixed on the magnet bracket 47. The arrangement is such that the normal tension of the spring 53 biases the lever 51 to its inoperative position.

Cooperatively associated with the reject lever 51 is a wiper lever 54. As shown, the wiper lever 54 is pivoted to the inside of the fixed plate 21 about a pivot pin 55. The wiper lever 54 is provided with a slotted opening 54A for receiving a pin 56 carried by reject lever 51, the pin 56 being extended through a slotted opening 57

form in the fixed plate member 21. Accordingly, the arrangement is such that whenever the reject lever 51 is depressed, the depression thereof will cause the displacement of the wiper lever 54 about its pivot 55 to wipe any slug or coin attracted to the magnet 46 free thereof. Also, the hinge plate 22 is provided with an inclined cam surface or tab 59 which is adapted to be cammed by the actuating pin 56 of the rejector lever 51. In operation whenever the reject lever 51 is depressed, the actuating pin 56 engaging the inclined tab 59 of the hinge plate 22 will cam the hinge plate 22 outwardly and away from the fixed plate 21. Accordingly, any undersized or oversized coin which is hung up in the coin chute 25 is thus freed, so that the same may be directed into the passageway 29 for receiving the unacceptable coins. As shown, the portion 60 of the fixed wall plate 21 is angularly bent inwardly thereof so as to define a deflector plate or flap which will deflect any coin hung up in the coin chute to passageway 29 for receiving the unacceptable coins. The coins received in the unacceptable passageway 29 are thus ultimately directed to a coin return slot which is cooperatively associated therewith.

From the foregoing it is to be noted that a mechanical coin rejecting mechanism 20 is set forth which will mechanically gauge coins for proper thicknesses and proper diameter so that only coins of predetermined thickness and predetermined diameter are permitted to pass through the coin rejecting mechanism. Any coin of improper thickness or of improper diameter are thus prohibited from passing through the coin rejecting means.

If desired, an electro-magnet means (not shown) may be cooperatively associated with the coin rejecting mechanism so that upon insertion of the predetermined number of coins required to initiate a machine cycle, the electro-magnet is energized to interpose a cover plate which covers the acceptable passageway. In this event, insertion of additional coins will be immediately by-passed to the coin return passageway 29 and be directed to the return mechanism of the vending machine or the like. In this manner, assurance is had that no more than the required amount of coins can be accepted.

From the foregoing, it will be noted that the coin rejecting mechanism 20 is relatively simple in construction and it is provided with means for mechanically gauging coins for proper thicknesses and for proper diameters. Accordingly, unless a coin has the prescribed thickness and proper size diameter, it will not be permitted to pass through the coin rejecting mechanism. Further, the coin rejecting mechanism described is provided with a gauging means which may be adjusted to accommodate various coins of prescribed thicknesses and/or diameters in a relatively simple and economic manner.

While the instant invention has been described with reference to a particular embodiment thereof, it will be readily appreciated and understood that variations and modifications of the instant invention may be made without departing from the spirit or scope of the invention.

What is claimed is:

1. A coin rejector mechanism comprising
 - (a) means defining a coin chute having a fixed wall portion and an inclined movable wall portion pivotally connected to said fixed wall portion;
 - (b) said movable wall portion having its free end biased toward said fixed wall portion; said movable wall having an edge portion to define with said fixed wall a discharge opening for receiving acceptable coins, said discharge opening being annularly disposed relative to said movable wall;
 - (c) a bottom ledge carried on said movable wall portion to define the bottom of said chute;
 - (d) said ledge having an angled surface inclined toward said fixed wall portion whereby coins rolling on said ledge normally lean toward said movable wall portion;
 - (e) and guide means cooperatively associated with

said ledge for guiding a coin so that a coin is upright as said coin rolls along said bottom ledge to a line with said discharge opening for acceptable coins to discharge from said chute.

2. The invention as defined in claim 1 and including
 - (a) means for adjustably spacing said ledge from the fixed wall portion of the coin chute, whereby said spacing defined is utilized to gauge the width of unacceptable coins.
3. The invention as defined in claim 1 and including
 - (a) gauge means connected to said fixed wall portion
 - (b) said gauge means cooperating with said movable wall to gauge therebetween the thickness of a coin whereby over thick coins are prohibited from passing through said chute.
4. The invention as defined in claim 1 and including
 - (a) means cooperatively associated with said guide means to prohibit the passage of coin with too large a diameter through said coin chute.
5. The invention as defined in claim 1 wherein said movable wall is provided with a cutout portion between said ledge and said guide means whereby coin with too small a diameter is discharged therethrough by gravity.
6. The invention as defined in claim 1 including magnetic means disposed adjacent said chute for attracting thereto slugs of magnetically attracted materials.
7. A coin rejector comprising
 - (a) means defining a coin chute having relatively movable wall portion that converge toward the bottom of said coin chute;
 - (b) means defining an acceptable coin passageway and an unacceptable coin passageway disposed below said coin chute;
 - (c) means defining a bottom for said coin chute that inclines downwardly toward said passageways;
 - (d) means communicating said coin chute with each of said passageways; said latter means defined by a movable wall portion having an edge spaced from said fixed wall to define a discharge opening for acceptable coins whereby said discharge opening is annularly disposed relative said movable wall and in communication with said acceptable coin passageway,
 - (e) coin gauge means cooperatively associated with the movable wall portion of said coin chute to prohibit the passage through said coin chute of unacceptable coins that are either too thin or too thick, and
 - (f) diameter sizing means cooperatively associated with said bottom defining means to gauge the diameter of the coins passing therethrough whereby said diameter sizing means permits only coins of proper diameter to pass through said chute, said diameter sizing means including a guide member for aligning an acceptable coin with said discharge opening, and
 - (g) a rejector means mounted adjacent said coin chute to affect the pivoting of said movable wall portion of said chute in the event an improperly sized coin is prohibited from passing through said chute for clearing said chute of said improperly sized coins.
8. The invention as defined in claim 7 wherein said coin gauging means include
 - (a) first gauge means for prohibiting coin having a thickness greater than that of an acceptable coin from passing through said coin chute,
 - (b) and a second gauge means for adjusting the spacing between said bottom defining means and a wall of said coin chute whereby coin having a thickness less than that of an acceptable coin is wedged in said spacing;
9. The invention as defined in claim 8 wherein said bottom defining means is defined as a ledge having its edge inclined away from the movable wall of said chute so that a coin with a thickness less than that of an acceptable coin is wedged in said spacing.

10. The invention as defined in claim 7 wherein said diameter sizing means includes means for hanging up coins with too large a diameter.

11. The invention as defined in claim 7 wherein said sizing means includes a guiding edge for directing coin of proper diameter and thickness toward said opening communication with the acceptable coin passageway.

12. The invention as defined in claim 7 including a magnetic means for attracting unacceptable coins of ferrous material.

13. The invention as defined in claim 11 and including

(a) a wiper means cooperatively associated with said rejector means to dislodge the magnetically attracted coins from said magnet means when said rejector lever is actuated;

(b) and means for directing said dislodged ferrous coins to said unacceptable passageway.

14. The invention as defined in claim 7 and including means to prohibit the passage of washer slugs through said coin chute.

15. A coin rejector adapted for use in a coin meter to prohibit the passageway of an unacceptable coin there-through carrying

(a) a mounting plate,

(b) a hinged plate,

(c) means pivotally mounting said hinged plate on said mounting plate so that the upper end of said hinged plate is spaced from said fixed plate and the lower edge of said hinged plate is inclined toward said mounting plate to define a coin chute,

(d) means for biasing said lower edge of said hinged plate toward said mounting plate,

(e) means defining a ledge at the bottom of said coin chute to engage acceptable coins inserted in said chute, said ledge having an edge angled toward said mounting plate,

(f) means defining a passageway for acceptable coins,

(g) means defining a passageway for unacceptable coins,

(h) said hinged plate having an edge portion defining with said mounting plate an opening in communication with said acceptable coin passageway, said opening being in annularly disposed relationship to said movable wall,

(i) and said hinged plate having a cutout portion in the plane thereof that communicates with the unacceptable coin passageway,

(j) and means cooperatively associated with said ledge for gauging the diameter of coins passing said chute whereby coin with too large a diameter is hung up in said chute, and coin with too small a diameter is passed through said opening formed in the plane of said hinged plate, and said means associated with said ledge including a member having a tapered portion which progressively widens as it approaches said opening so as to align a properly sized coin rolling along said ledge with said opening.

16. A coin rejector adapted for use in a coin meter of a vending machine or the like comprising

(a) mounting plate,

(b) a hinged plate pivotally mounted on said mounting plate to define therewith a coin chute,

(c) said hinged plate being normally inclined with respect to said mounting plate to define a coin chute, and said hinged plate having an edge portion defining with said mounting plate a discharge opening,

(d) means defining a passageway for acceptable coins in communication with said discharge opening,

(e) means defining a passageway for rejected coins,

(f) means connected to said hinged plate defining a ledge at the bottom of said coin chute, whereby said ledge causes said coins engaging the same to be leaned toward said hinged plate,

(g) means for adjusting the spacing of said ledge from said mounting plate to define a space therebetween for gauging the thickness of thin coins passing in said coin chute,

(h) means cooperatively associated with said hinged plate for gauging the thickness of thick coins passing through said chute,

(i) means for gauging the diameter of said coins connected to said hinged plate,

(j) said diameter gauging being cooperatively associated with said ledge to permit only coins of proper diameter to pass thereby,

(k) and means cooperatively associated with said ledge for straightening only the proper sized coins so that the same are permitted to pass through said discharge opening and into the acceptable coin passageway.

17. A coin rejector for detecting and rejecting improperly sized coins or tokens comprising

(a) a fixed plate,

(b) a movable plate hingedly connected in said fixed plate to define therewith a coin chute for receiving the coins or tokens passing therethrough,

(c) said movable plate being normally inclined toward said fixed plate so that said coin chute converges downwardly and inwardly toward said fixed plate,

(d) means for normally biasing said movable plate toward said fixed plate,

(e) means defining a pair of juxtaposition coins passageway below said coin chute, one of said passageway being adapted to receive acceptable coins and the other passageway for receiving the rejected coins,

(f) means defining a ledge connected to said movable plate to define the bottom of said coin chute that inclines toward said passageways,

(g) said ledge having its upper edge angled toward said fixed plate so that said coins engaging said ledge tend to slide off same toward said fixed plate,

(h) said movable plate having an edge spaced from said fixed plate to define an opening through which acceptable coins are directed to the acceptable coin passageway,

(i) said movable plate having a cutout portion in the plane thereof to connect said coin chute in communication with said unacceptable coin passageway, said cutout portion defining an opening sized to reject coins with too small a diameter therethrough whereby such coins drop to said unacceptable coin passageway,

(j) a coin diameter sizer connected to said movable plate to define with said ledge a means to gauge the diameter of a properly sized coin passing therebetween,

(k) means on said coin sizer to hang up coins having a diameter greater than that of a properly sized coin,

(l) and said coin sizer having means for straightening the properly sized coins rolling down said ledge whereby the same is directed through said opening to said acceptable passageway,

(m) means disposed adjacent said coin chute for attracting coins of ferrous material so as to prohibit the passage thereof through said chute,

(n) a wiper means pivotally mounted on said fixed plate,

(o) and a rejector lever pivotally mounted on said fixed plate and cooperatively connected to said wiper whereby said wiper means is actuated to wipe said hung up coins when said rejector lever is actuated,

(p) means cooperatively associated with said rejector lever to pivot said movable plate away from said fixed plate to clear said chute of any unacceptable coins,

(q) means for directing the hung up coins to said unacceptable coin passageway when said rejector lever is actuated,

(r) and means for gauging the thickness of said coins so that only coins of proper thickness are permitted to pass through said coin chute.

18. A coin rejector adapted for use with a coin meter of a vending machine or the like for accepting properly sized coins only comprising

- (a) a fixed mounting plate,
- (b) a hinged plate pivotally connected to said fixed mounting plate,
- (c) said hinged plate being inclined toward said fixed plate to define therewith a coin chute having side walls converging toward the bottom thereof,
- (d) means for biasing said hinged plate toward said fixed plate,
- (e) means defining an acceptable coin passageway and an unacceptable coin passageway disposed below said coin chute,
- (f) means defining a coin discharge opening connecting said coin chute in communication with said acceptable coin passageway,
- (g) said hinged plate having a cutout portion formed in the plane thereof, said cutout portion defined a coin exit for coins having an undersized diameter,
- (h) a thickness sizing plate connected to said hinged plate,
- (i) said sizing plate having an inturned flange portion presenting its edge to define a bottom for said coin chute,
- (j) said edge being angled toward said fixed plate so that a coin in rolling engagement therewith tends to slide toward said fixed plate,
- (k) means for varying the spacing of said edge from said fixed wall so that coins having a thickness less than the spacing between said wall and edge become wedged therebetween,
- (l) a gauge means cooperatively associated with said hinged plate to prohibit the passage of coins of excessive thickness therethrough,
- (m) a diameter sizer connected to said hinge plate cooperatively associated with said sizing plate to gauge the diameter of coins passing therebetween,
- (n) said diameter sizer including means to prohibit the passage of coins of oversized diameters through said chute,
- (o) means for guiding coins of properly sized diameters through said coin discharge,
- (p) coins of undersized diameters being discharged through the cutout in said hinged plate as the coin of undersized diameter rolls down said edge,
- (q) a rejector lever cooperatively associated with said hinged plate to pivot the same away from said fixed plate to release any improperly sized coins hung up between said hinged plate and fixed plate.

19. A coin rejector adapted for use with a coin meter of a vending machine or the like for accepting only properly sized coins comprising

- (a) a fixed mounting plate having opposed flanges extending along the opposed edges thereof,
- (b) a hinged plate pivotally connected between said flanges,
- (c) said hinged plate being inclined toward said fixed plate to define therewith a coin chute having its side walls converging toward the bottom thereof,

- (d) means for biasing said hinged plate toward said fixed plate,
- (e) means defining an acceptable coin passageway and an unacceptable coin passageway disposed below said coin chute,
- (f) means defining a coin discharge opening connecting said coin chute in communication with said acceptable coin passageway,
- (g) said hinged plate having an opening formed in the plane thereof, said opening defining a coin exit for improperly sized coins with too small a diameter,
- (h) means for guiding said improperly sized coins through said coin exit to said unacceptable coin passageway,
- (i) a thickness sizing plate connected to said hinged plate,
- (j) said sizing plate having an inturned flange portion presenting its edge to define the bottom for said coin chute,
- (k) said edge being inclined toward said discharge opening, and said edge being angled toward said fixed plate so that the coin in rolling engagement therewith tends to slide toward said fixed plate,
- (l) means for varying the spacing of said edge from said fixed wall so that coins having a thickness less than the spacing between said wall and edge become wedged therebetween,
- (m) a gauge means cooperatively associated with said hinged plate to prohibit the passage of coins of excessive thickness therethrough,
- (n) a diameter sizer connected to said hinge plate cooperatively associated with said sizing plate to gauge the diameter of coins passing therebetween,
- (o) said diameter sizer including means to prohibit the passage of coins with oversized diameters through said chute,
- (p) and means for guiding the properly sized diameter coins through said chute and through said coin discharge, the coins with undersized diameter being discharged through the cutout coin exit in said hinged plate as the coin rolls down said edge,
- (q) magnetic means connected to said fixed plate for attracting coins of ferrous material, and
- (r) means for hanging up washer slugs,
- (s) a rejector lever cooperatively associated with said hinged plate for pivoting the same away from said fixed plate to release any improperly sized coins hung up between said hinged plate and fixed plate, and
- (t) a wiper lever cooperatively associated with said rejector lever for swinging pass said magnetic means to dislodge any coin attracted thereto,
- (u) means for directing any rejected coins to said unacceptable coin passageway.

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