

June 25, 1929.

F. G. MURRAY

1,718,829

COIN ASSORTING MECHANISM FOR FARE BOXES

Filed Aug. 27, 1926

4 Sheets-Sheet 1

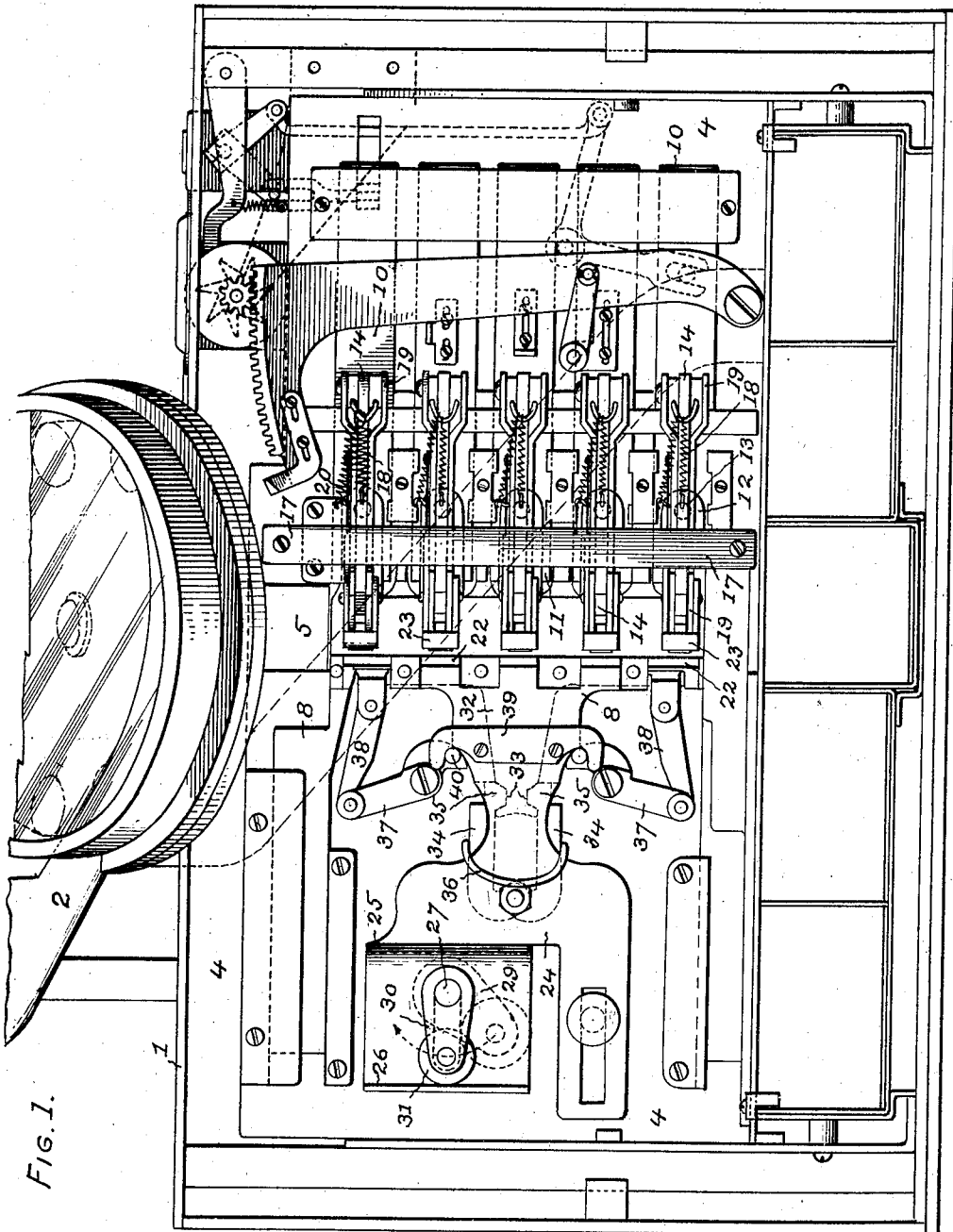


FIG. 1.

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4 Sheets-Sheet 2

Fig. 2.

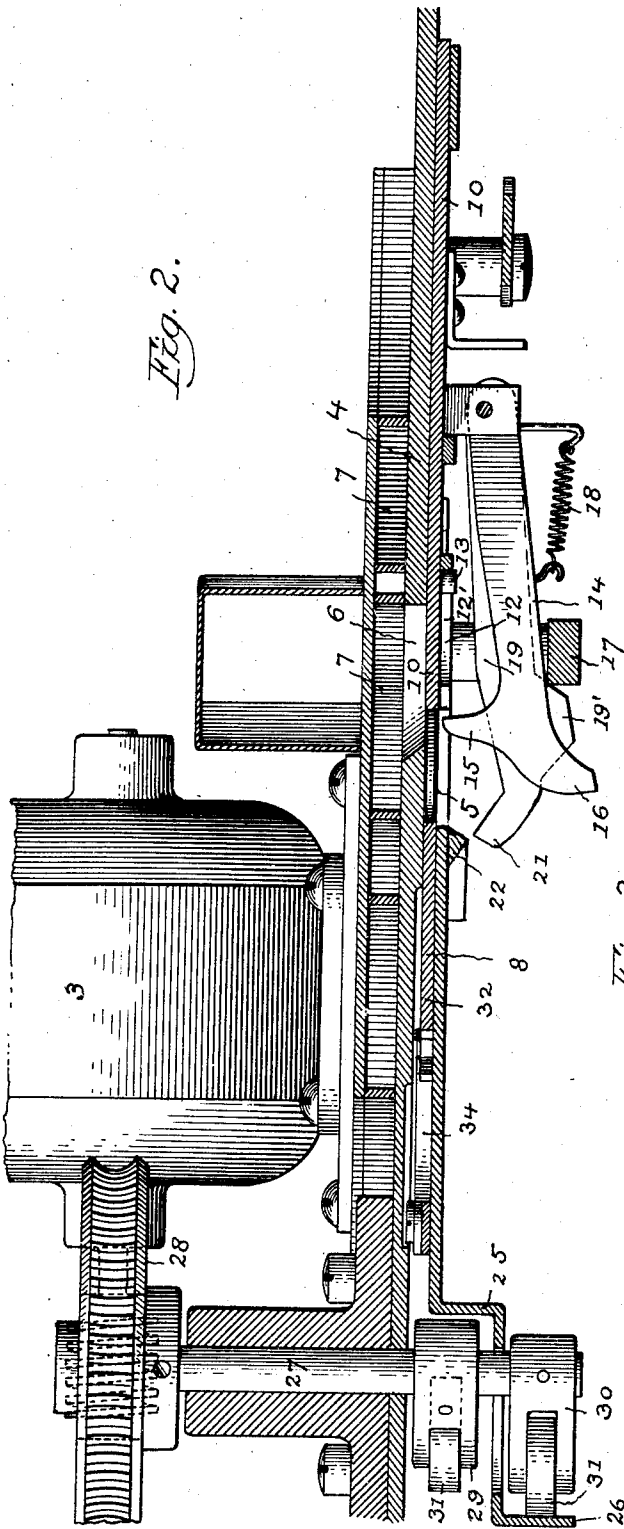
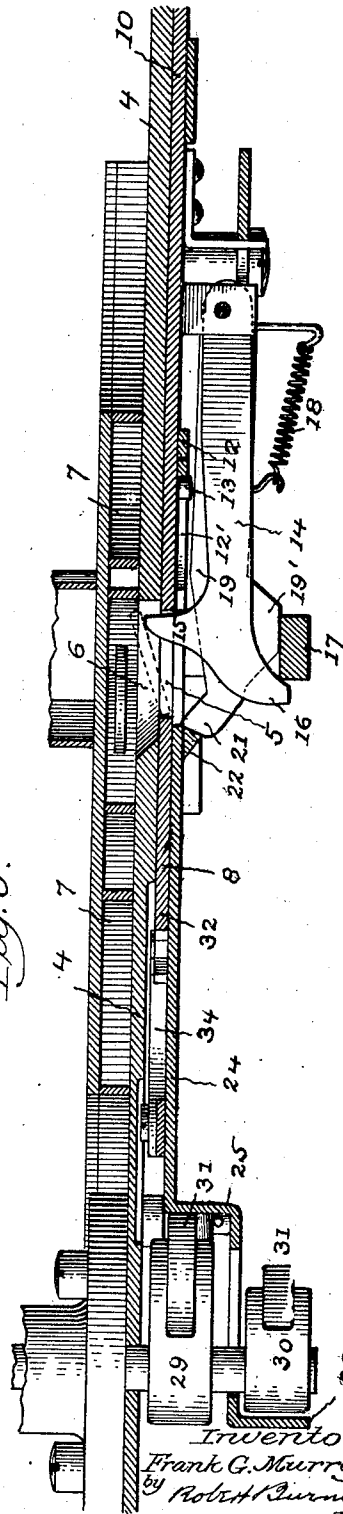


Fig. 3.



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4 Sheets-Sheet 3

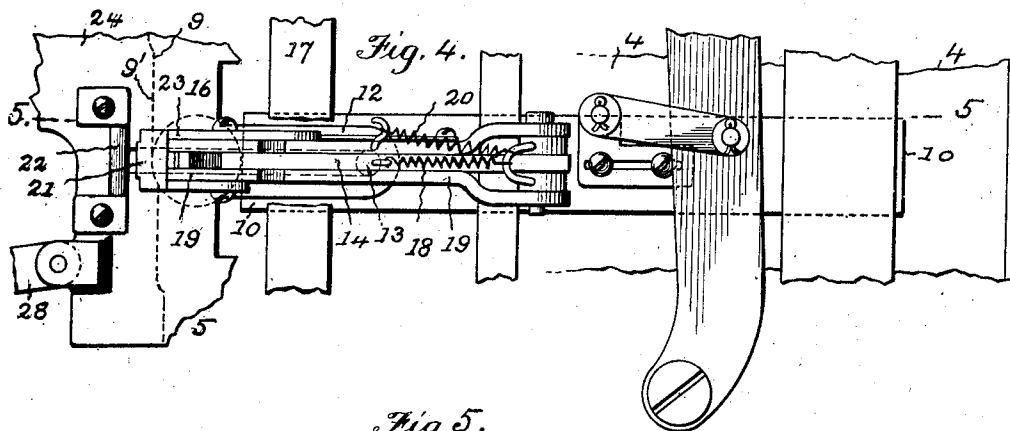


Fig. 5.

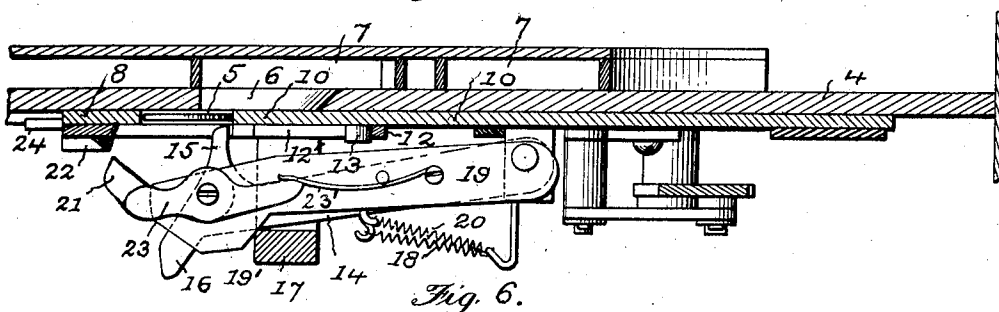


Fig. 6.

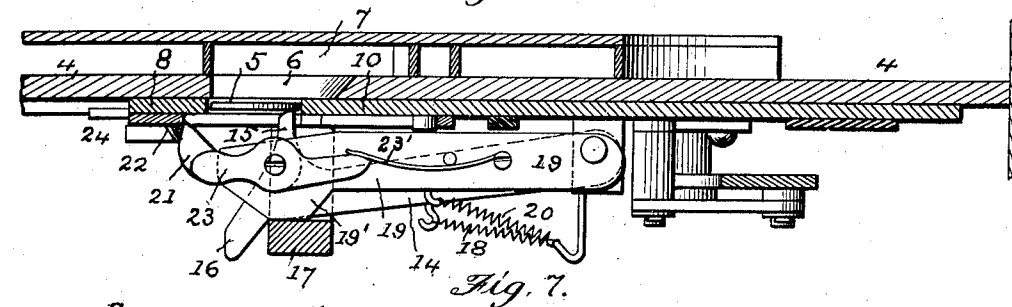
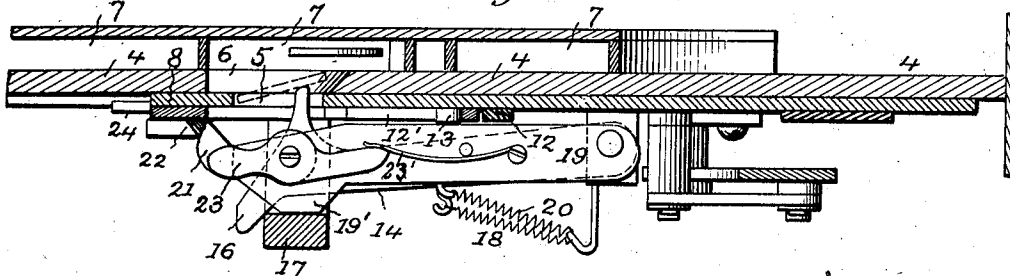


Fig. 7.



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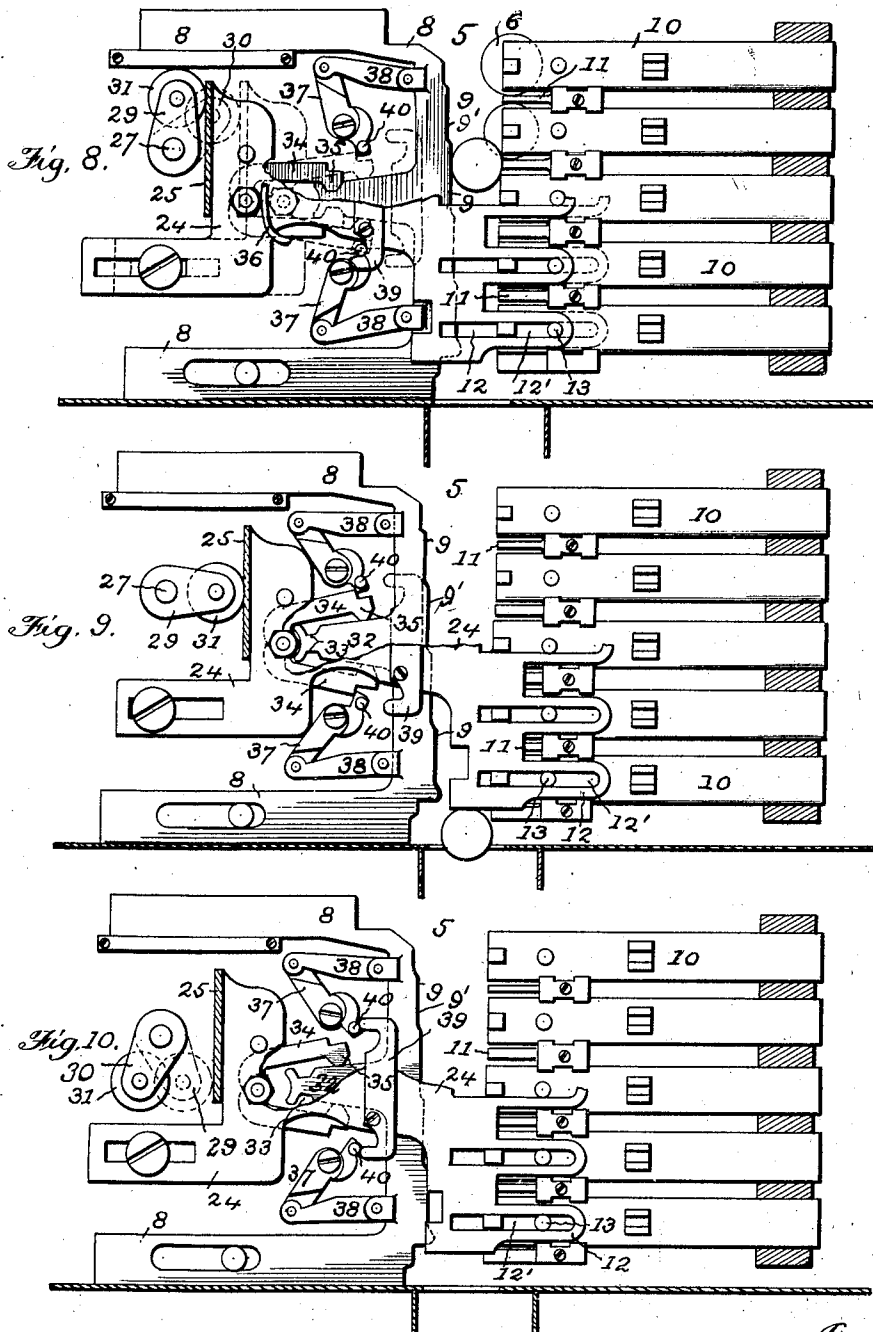
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COIN ASSORTING MECHANISM FOR FARE BOXES

Filed Aug. 27, 1926

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE.

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COIN-ASSORTING MECHANISM FOR FARE BOXES.

Application filed August 27, 1926. Serial No. 131,821.

This invention relates to a coin and token assorting mechanism for use more especially in connection with fare boxes of the reciprocating slide type shown and described in the Murray Patent No. 1,499,187, dated June 24, 1925, and the present improvement has for its objects:

To provide a structural formation and combination of parts in an assorting and selecting mechanism of the reciprocating slide or plunger type, by means of which the primary or main selector slide or plunger is connected in a yielding manner to a reciprocating head from which it has movement, so that with a spurious coin or token in the holding throat between the primary and series of auxiliary selective slides, the connection between said primary slide and said operating head will give way permitting the primary slide under the influence of said spurious coin or token to cease further forward movement, while the operating head will make its full forward stroke, and thus avoid breakage and damage to the mechanism. In such construction a reverse motion means is employed between the operating head and the primary selector head or slide, for the purpose of imparting, during the continued forward stroke of said operating head, a reverse or backward movement to the primary selector slide when the above mentioned yielding connection is moved to a release position by the presence of a spurious coin or token in the receiving throat of the apparatus. With such reverse or backward movement of the primary slide an extended opening of the receiving throat is attained to permit the spurious coin or token to fall by gravity into a compartment provided therefor in the main housing of the fare box, with the parts returning to their normal relation with such discharge of the spurious coin or token:

To provide in the described type of selective mechanisms, means whereby an interlock or positive coupling of the primary selector slide and an auxiliary selector slide is automatically attained after an initial movement in unison of said slides, under the influence of an interposed coin or token in the coin receiving throat between said slides, so that the final movement of the selector slides takes place without any binding stress upon said coin or tokens, thus permitting a free lateral discharge of a coin or token from the receiving throat into a suitable receiving passage

with an avoidance of a marring of the edges of the coin or token, due to a frictional holding of the same between the ends of the selector slides during the dislodgment of a coin or token from between the slides:

To provide in the described type of selective mechanisms, a structural formation and combination of parts by means of which a period of rest of the primary and auxiliary selective slides is attained at the point at which said slides are separated to receive a coin or token from the single feed mechanism of the fare box, all as will hereinafter more fully appear.

In the accompanying drawings:—

Fig. 1, is a front elevation of a fare box to which the present improvements are applied, the front wall of the fare box housing being removed to disclose the contained mechanism.

Fig. 2, is a detail horizontal section of the forward portion of the selector mechanism, with the parts in a normally retracted condition for the reception of a coin or token in the holding throat of the mechanism.

Fig. 3, is a similar and companion view, with parts in position for an ejection of a coin or token from said throat.

Fig. 4, is a detail elevation of the rear portion of the selector mechanism in the retracted and normal position of parts.

Fig. 5, is a detail horizontal section of the same on line 5—5, Fig. 4.

Figs. 6 and 7, are views similar to Fig. 5, showing said rearward part of the mechanisms in a partly advanced position and in a fully advanced position, respectively.

Figs. 8, 9 and 10 are detail front elevations of the selector mechanism in its respective, retracted, partly advanced and final and fully advanced positions.

Like reference numerals indicate like parts in the several views.

This invention is intended for use more especially in fare boxes of the assorting and registry type in which are combined a closed main housing 1, a superimposed coin and token receiving hopper 2, with which is associated a delivery mechanism by which coins and tokens are taken and delivered to the assorting mechanisms of the present improvement in a serial and separated manner. Such assorting mechanism, as well as the registry mechanism is arranged in the interior of the main housing 1, and in some cases said housing will contain an electric motor 3 by which

constant motion of the different mechanisms of the fare box is attained.

The construction of the present assorting mechanism is of the reciprocating multiple slide type and similar in many particulars to the assorting mechanism shown and described in the aforesaid Murray Patent No. 1,499,187, with a construction in detail as follows:—

10 A vertical wall or partition 4, extending approximately the length of the main housing 1, divides the same into a front chamber and a rear chamber, with the front chamber containing the coin and token assorting mechanism and accessories, while the rear chamber contains the electric motor 3, the registry mechanisms and the individual drawers or receptacles for the coins and tokens assorted in their passage through the assorting mechanism.

20 The partition 4, preferably constitutes the guide and support for the hereinafter described selector slides or plungers and their operating mechanism and in addition constitute the rear wall of the vertical receiving throat 5 of the present assorting mechanism, and to such end the partition or wall 4 will be formed with a vertical series of orifices 6 adapted to register with the throat 5, at certain positions of the mechanism and permit the lateral passage of coins and tokens into conduits 7 which lead to separate receptacles in the rear chamber of the main housing 1.

35 The present coin and token assorting mechanism, as in the aforesaid Murray patent, has a main or primary selective slide or plunger 8, of a plate form slidably mounted on a vertical face of the partition 4, and receiving reciprocation from the hereinafter described operating mechanism, and in the construction shown a vertically elongated end face of the primary slide forms the end wall to the left of the coin and token receiving throat 5 aforesaid, and is formed with a vertical series of abutment ledges 9, Figs. 8 to 10, by means of which the aforesaid receiving throat 5 is divided into a plurality of sub-chambers having a progressively decreasing length, so that each sub-chamber will receive and retain a coin or token of a predetermined diameter, as in the aforesaid patented construction.

Operatively associated with the primary slide 8, is a vertically arranged series of independent secondary slides 10, also slidably mounted on the aforesaid partition 4, in aligned relation to the primary slide 8, and with said primary slide common to the series of secondary slides.

60 The end faces, to the left in the drawings, of the secondary slides 10 are preferably arranged in line one with the other, in the coin and token receiving position of the mechanism, with such end faces constituting

the end wall to the right of the receiving throat 5 aforesaid.

Owing to the stepped or ledged formation above described of the primary slide 8, the end face of each secondary slide opposed to such formation of the primary slide will have a different spaced relation to the opposed end face of the primary slide, with the uppermost secondary slide separated from the primary slide a distance which permits a downward passage of all coins and tokens, except the largest one handled by the apparatus, for instance a half-fare token which catches upon the uppermost ledge 9 of the primary slide and is retained thereby to form an operating medium between the primary and the uppermost secondary slide in a cycle of operation of the mechanism.

In a similar manner, the next secondary slide below the above mentioned uppermost slide, is separated from the primary slide 8, a distance which permits a downward passage of the remaining sizes of coins or tokens, but the next largest, for instance a nickel five cent coin, which catches on the next lower edge of the primary slide, to constitute an operative medium between the primary slide and the said secondary slide.

The next secondary slide beneath the secondary slide above described, is separated from the primary slide 8 a distance which permit the downward passage of the remaining sizes of coins and tokens, but the largest one, for instance a copper one cent coin, which catches upon the next lower ledge of the primary slide to constitute an operative medium between the primary slide and the said secondary slide.

The next succeeding secondary slide beneath the one above described, is separated from the primary slide 8 a distance which permits the downward passage of the remaining sizes of coins and tokens, but the largest one, for instance a dime or silver ten cent coin, which catches upon the next lower ledge of the primary slide to constitute an operative medium between the primary slide and the said secondary slide.

The next and lowermost secondary slide is separated from the primary slide 8, a distance to permit a downward passage of the smallest of the coins or tokens the apparatus is intended to handle, for instance a full fare token, which catches upon the lowermost ledge 9 of the primary slide to constitute an operative medium between the primary slide and said lowermost secondary slide.

Intermediate of the series of secondary slides 10, a series of stationary stop ribs are attached to the partition 4 aforesaid, with the forward faces of said ribs in line with the forward faces of the series of secondary slides when the mechanism is in the position above referred to. The stop ribs are adapted

in connection with the hereinafter described formation of the opposed end of the primary slide 8, to provide fixed abutments or stops for spurious coins or tokens, the diameters of which are intermediate the diameters of the acceptable coins or tokens, in the attainment of a separate discharge of such spurious coins or tokens by the automatic means hereinafter described. As shown more particularly in Fig. 8, the portions 9' of the wall or edge of the primary slide 8 in opposed relation the fixed stops 11 aforesaid, have each a slight upward flared form between each pair of stop shoulders 9 of said wall or edge, so that as an unacceptable or spurious coin or token of a diameter intermediate of the diameters of the series of regular coins or tokens the apparatus is designed to assort, passes down the receiving throat, the said unacceptable coin or token will pass one or more of the upper shoulders 9, which provide space for such passage, but will fail to reach a shoulder 9 adapted to arrest a coin or token of a standard diameter, but will be arrested near the mid-height of a flared wall or edge portion 9' of the primary slide, in abutting alignment with the adjacent fixed stop 11.

With the described condition prevailing, the unacceptable coin or token will act as a means for effecting an operation of the hereinafter described automatic means by which the unacceptable coin or token is discharged from the assorting mechanism into a separate receptacle provided therefor in the housing of the apparatus.

As in my aforesaid patented construction, the secondary slides 10 are returned to and maintained in their normal spaced relation to the primary slide 8, and in a position to the left in the drawings, of the outlet orifice 7 of the partition 4 aforesaid. The return of the slides 10 occurs in each cycle of operations of the mechanism, by similar connections between the primary slide and each secondary slide, as follows:

A series of longitudinally slotted bars 12 is fixedly attached to the operating head 24 hereinafter described with their elongated slots 12' adapted for intermittent operative engagement with individual studs or pins 13 on the secondary slides 10 aforesaid. With such construction all of the secondary slides 10 are moved to and held in the normal set position heretofore mentioned, by the primary slide 8 as it completes its return movement to the left in the drawings. With an active movement of the primary slide 8 to the right the elongated slots 12' of the bars 12 move upon the studs 13 of the secondary slides 10 without operative engagement therewith. Due to the fact that the presence of a coin or token is necessary as an intermediate operative medium between the primary slide 8 and any one of the secondary slides 10 in order to attain a movement of a secondary slide to the

right it follows that no movement can be imparted to any of said secondary slides by the primary slide but the particular secondary slide having a coin or token interposed between itself and the primary slide 10.

In the present constructions a plurality of ejector members or bars 14, each bar individual to a secondary slide 10 aforesaid and pivotally mounted on said slide, are employed, with the free end, to the left in the drawings, of each bar formed with a lateral prong 15 having a position between adjacent ends of the aforesaid primary and secondary slides. Adjacent to said prong 15 each ejector bar is formed with an inclined projection or cam 16 which in an active stroke of the assorting mechanism is adapted to have operative engagement with a vertically extending bridge rail 17, fixedly secured to the housing partition 4 aforesaid, and receive therefrom a rearward swinging movement, and cause the lateral prong 15 to engage a coin or token held in the path of said prong by the primary and a secondary slide and force said coin or token through a particular one of the aforesaid orifices 6 in the partition 4 and into a proper receptacle associated with said orifice.

Associated with each ejector bar 14 is a spring 18, adapted to maintain the bar 14 in a retracted position when not in operative engagement with the bridge rail 17 aforesaid.

A material part of the present invention in connection with the heretofore described construction of primary slide 8 and secondary slides 10 and associated ejector bars 14, involves means for effecting a positive operative connection between the primary slide 8 and any one of said secondary slides 10, and in a manner independent of the coin or token between the same, after the use of such coin or token as an intermediate medium in effecting an initial movement to the right of such secondary slide along with the primary slide, to effect such positive connection of the slides, for the balance of the movement of the slides to the right and an entire release of the coin from the described initial function, so that any abrasion of the edges of a coin or token is avoided, and which is of frequent occurrence during the operation of the ejector mechanism with a coin held under pressure between the assorter slides. The preferred mechanism for attaining the above object comprises a detail construction as follows:—

Upon each secondary slide 10, a swinging coupling bar 19 is pivotally mounted, preferably by means of the pivot pin of an ejector bar 14, such coupling bar 19 is provided with a cam projection 19' adjacent to its free end for operative engagement with the stationary vertical bridge rail 17 aforesaid, by which the coupling bar is forced into engagement with an abutment rib 22 in the primary slide 8 to constitute a positive coupling between the primary slide 8 and a

secondary slide 10 in the balance of the active stroke or movement of the parts. Said positive engagement of parts is effected against the normal tendency of an associated spring 20 to move the coupling bar 19 out of such engagement.

The contact faces of the coupling bar 19 and abutment rib 22 aforesaid, are of an inclined or cam formation 21, so that in the engaging movement between said parts said cam or inclined form of said faces will effect a slight movement of separation between the primary slide 8 and the secondary slide 10 carrying said coupling bar 19, and thus attain a release of the bearing stress of said slides upon a coin or token previously held in a rigid manner between said slides. In the preferred construction shown in Figs. 4, 5, 6 and 7, the cam formation 21 above referred to, is carried by a rock arm 23 pivotally mounted on the coupling bar 19 and yieldingly held in proper operative position by an associated spring 23'. The purpose of such construction is to avoid a breakage of parts should the engaging point of said shoe accidentally engage a side face instead of the advancing face of the vertical rib 22 aforesaid.

Another part of the present improvement in connection with the heretofore described primary slide 8, secondary slides 10 and ejector bars 14, involves means for attaining a period of rest for said slides, while the same are in their separated condition for the reception of a coin or token, and so that ample time for the same to attain a proper position is provided, and to such end a construction of parts is provided as follows:—

A longitudinally sliding head 24 has operative connection at one end, and preferably in the manner hereinafter described, with the primary slide 8 aforesaid, and at its other end, said head 24 carries a pair of cheek plates 25, 26, that have a spaced longitudinal and lateral relation to each other, as shown in Figs. 2 and 3, for alternate operative bearing engagement with crank arms of an operating shaft arranged as follows:—

The operating shaft 27, above referred to, is journaled transversely in the main housing 1, and at one end is operatively connected by a worm or like speed reducing gearing 28 with the armature shaft of the electric motor 3 aforesaid. At its other end the shaft 27 carries a pair of crank arms 29, 30 arranged in spaced lateral relation one to the other, for individual and successive operative engagement with the respective cheek plates 25, 26 of the reciprocating head 24 aforesaid. In the construction shown the crank arm 29 is adapted to impart an active stroke, to the right, to the head 24, and the primary selector slide 8, operatively associated therewith, while the companion crank arm 30 is adapted to impart a return movement to said head

24 and primary slide 8, with one crank arm remaining inactive during an active operation of the other crank arm. Each crank arm 29, 30 is preferably provided with a contact roller 31, with a view to reduce frictional wear of the parts.

In the present improvement the crank arm 30 is set about 45° in advance of the crank arm 29, in the circular path of travel of the crank arms as illustrated in Figs. 1, 8 and 10, so that with such arrangement the active stroke to the right of the primary selector slide 8, is effected by the crank arm 29, and the return movement of said selector slide is afterwards effected by the crank arm 30, after which a period of rest of the primary selector slide 8 takes place, while the aforesaid crank arm 29 is making a circular travel of approximately 135° to again engage with and effect a succeeding active stroke of the primary selector slide in a continued operation of the mechanism. With such construction, the primary selector slide 8 and series of secondary selector slides 10 remain at rest in an open or separated relation for a period of time adapted to permit a free and unimpeded downward travel of a coin or token to its predetermined position in the vertical receiving throat 5 formed by said selector slides.

Another part of the invention comprises the provision of a yielding and reverse motion operative connection between the reciprocating operating head 24, and the primary selector slide 8 of the mechanism, by means of which spurious and unacceptable coins or tokens passing into the receiving throat 5 between the primary and the series of secondary slides, and having diameters different from the diameter of the series of coins and tokens the mechanism is intended to handle, are rejected and discharged in a direct and certain manner. The preferred construction for effecting such result is shown in Figs. 1, 8, 9 and 10, with the formation and arrangement of parts as follows:

At or about its mid-height the primary selector slide 8, carries a fixed horizontally extending tongue 32 of a tapering shape and formed near its free end with upper and lower holding recesses or notches 33. In this connection the plate portion to the right of the operating head 24 provides pivotal support for a pair of counterpart coupling jaws 34 in aligned operative relation to the coupling tongue 32 of the primary selector slide 8, with the free ends of said jaws 34 formed with opposed projections or detents 35 for holding engagement in the holding recesses 33 above described, and with such engagement yieldingly maintained by a tension spring 36 common to both of said jaws. With the construction so far described and during the normal operation of the assorting mechanism, the operating head 24 and the primary

selector slide 8 move together in unison until an abnormal condition as hereinafter described takes place.

In associated relation to the coupling jaws 34 aforesaid, and pivoted on a stationary part of the fare box housing 1 are a pair of counterpart levers 37, the respective outer arms of which are connected by links 38 with the primary selector slide 8 of the mechanism, while the inner arms of said levers extend into the paths of the free ends of the coupling jaws 34 to be operatively engaged thereby, when, due to abnormal conditions in the mechanism, the jaws 34 move out of coupling engagement in the recesses of the coupling tongue of the primary selector slide 8 and sliding along the taper upper and lower edges of said coupling tongue have operative engagement with said inner arms of the levers 37, and through a movement of said levers, effect a counter movement of the primary selector slide 8 in a direction opposite to that of the operating head 24.

The above mentioned abnormal condition takes place whenever an unacceptable coin or token of a diameter less than that of the acceptable coins and tokens the mechanism is designed to handle, passes into the receiving throat 5 of the mechanism, such spurious coin or token owing to the heretofore described formation of such throat, will come to a stop against one or the other of the vertical series of fixed stops or ribs 11 aforesaid, and in that such lug provides a fixed abutment for said spurious coin, further active movement, to the right, of the primary selector slide 8, is prevented, so that the operating head 24 in its continued active movement to the right will force the coupling jaws 34 out of operative engagement in the recesses 35 of the coupling tongue 32 of the primary slide 8 and then effect an engagement of the free ends of the coupling jaws with the inner arms of the pair of levers 37 to effect a reverse movement to the left of the primary slide 8 with a consequent spreading apart of the primary and series of secondary selector slides, and a widening of the coin and token receiving throat 5, to permit a free descent of the unacceptable coin or token down said throat and into a separate receiver provided therefor in the lower portion of the housing 1 of the fare box.

After the above described separation of the primary and secondary slides, the primary slide is restored to its normal and original position by means as follows:

Upon the plate extension of the operating head 24, a vertically arranged bar 39 is fixedly attached, the upper and lower ends of the bar being of a hook form and arranged in aligned and operative relation to lateral studs 40 on the inner arms of the pair of levers 37 aforesaid, and so that in a succeeding reverse movement to the left, of the operating head 24, said bar 39 will contact with

the studs 40 of the levers 37 to rock the same and through the links 38 impart the return movement, to the right, of the primary slide 8 to its normal and original position.

As usual in the present type of fare boxes, each secondary selector slide 10 will be separately connected with one or more registry mechanisms associated with fare box housing, to register the totals of the fares and tokens deposited.

Having thus fully described my invention, what I claim and desire to secure by patent, is:—

1. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocatation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, and means operated by the combined movement of the primary and a secondary slide for effecting a slight separation between and a locking together of said slides to relieve the coin or token from its initial pushing action.

2. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocatation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, and means operated by the combined movement of the primary and a secondary slide for effecting a slight separation between and a locking together of said slides to relieve the coin or token from its initial pushing action, the same comprising an engaging means movably mounted on a secondary slide, a stationary member adapted for operative engagement with said movable engaging means, and an abutment member on the primary slide for operative engagement with said engaging means.

3. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocatation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, and means operated by the combined movement of the primary and a secondary slide for effecting a slight separation between and a locking together of said

slides to relieve the coin or token from its initial pushing action, the same comprising an engaging member pivotally mounted on a secondary slide and provided with an inclined formation near its free end, a stationary member adapted for operative engagement with the inclined formation of said engaging member, and an abutment member on the primary slide for operative engagement with the free end of said engaging member.

4. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, and means operated by the combined movement of the primary and a secondary slide for effecting a slight separation between and a locking together of said slides to relieve the coin or token from its initial pushing action, the same comprising an engaging means movably mounted on a secondary slide, a stationary member adapted for operative engagement said engaging means, an abutment member on the primary slide for operative engagement with said engaging means, and a spring actuated rock arm forming the engaging point of said movable engaging means.

5. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, and means operated by the combined movement of the primary and a secondary slide for effecting a slight separation between and a locking together of said slides to relieve the coin or token from its initial pushing action, the same comprising an engaging member pivotally mounted on a secondary slide and provided with an inclined formation near its free end, a stationary member adapted for operative engagement with the inclined formation of said engaging member, an abutment member on the primary slide for operative engagement with the free end of said engaging member, and a spring actuated rock arm forming the engaging point of said engaging member.

6. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocation to said primary slide, a plurality

of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, individual ejector means mounted on the secondary slides, and stationary means arranged in the path of said ejector means and adapted in a movement of a secondary slide to engage said ejector means to engage and eject a coin or token from between said secondary slide and the primary slide.

7. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, individual ejector means mounted on the secondary slides, each ejector means comprising a bar pivotally mounted on a secondary slide and having an inclined formation near its free end, and a stationary rail associated with said ejector means and adapted in a movement of a secondary slide to engage the inclined formation of the ejector bar to move the same to eject a coin or token from between said secondary slide and the primary slide.

8. In a coin assorting mechanism for fare boxes and the like, the combination of a primary selector slide, means for imparting reciprocation to said primary slide, a plurality of secondary selector slides arranged in aligned and normally separated relation to the primary slide to provide a receiving throat for coins and tokens, with a coin or token adapted to act as a means for imparting movement from the primary slide to a secondary slide, individual ejector means mounted on the secondary slides, each ejector means comprising a bar pivotally mounted on a secondary slide and having an inclined formation near its free end, a spring tending to move said bar in one direction, and a stationary rail associated with said ejector means and adapted in a movement of a secondary slide to engage the inclined formation of the ejector bar to move the same to eject a coin or token from between said secondary slide and the primary slide.

9. In a coin assorting mechanism of the type described and in which a primary reciprocating selector slide is arranged in aligned and normally separated relation to a plurality of secondary selector slides, the primary slide being common to the plurality of secondary slides, the combination of a reciprocating driven head, a yielding coupling

between the driven head and the primary selector slide, a reverse motion means arranged intermediate of said driven head and the primary slide and adapted in an independent movement of said driven head to impart a reverse motion to the primary slide and effect a widening of the coin receiving throat between the primary slide and the secondary slides.

10 10. In a coin assorting mechanism of the type described and in which a primary reciprocating selector slide is arranged in aligned and normally separated relation to a plurality of secondary selector slides, the
15 primary slide being common to the plurality of secondary slides; the combination of a reciprocating driven head, a yielding coupling between the driven head and the primary selector slide, a reverse motion means arranged
20 intermediate of said driven head and the primary slide and adapted in an independent movement of said driven head to impart a reverse motion to the primary slide, the same comprising a pivoted lever, an operating pro-
25 jection on the driven head arranged in the path of one arm of the lever, the other end of said lever having operative connection with the primary slide.

11. In a coin assorting mechanism of the
30 type described and in which a primary reciprocating selector slide is arranged in aligned and normally separated relation to a plurality of secondary selector slides, the pri-
35 mary slide being common to the plurality of secondary slides, the combination of a reciprocating driven head, a yielding coupling jaw on said head, the primary slide of the mechanism having a coupling tongue formed with
40 a holding recess for engagement with said coupling jaw, a spring adapted to yieldingly hold said jaw in said recess, a reverse motion means arranged intermediate of said driven head and the primary slide and adapted in
45 an independent movement of said driven head to impart a reverse movement to the primary slide, the same comprising an operating pro-

jection on the coupling jaw engaging one arm of said lever, the other end of said lever having operative connection with the primary slide, the coupling tongue having an inclined face adapted to engage and move the coupling jaw into the path of the first mentioned arm of the pivoted lever.

12. In a coin assorting mechanism of the type described and in which a primary reciprocating selector slide is arranged in aligned and normally separated relation to a plurality of secondary selector slides, the primary slide being common to the plurality of secondary slides, the combination of a reciprocating driven head, a yielding coupling
60 between the driven head and the primary selector slide, means for imparting reciprocation to said driven head and primary slide, the same comprising a rotary shaft, a pair of
65 crank arms arranged out of diametric relation to each other on said shaft, and abutment members carried by said driven head in lateral displaced relation for individual engage-
70 ment with said crank arms.

13. In a coin assorting mechanism of the type described and in which a primary reciprocating selector slide is arranged in aligned and normally separated relation to a plurality of secondary selector slides, the
75 primary slide being common to the plurality of secondary slides, the combination of a reciprocating driven head, a yielding coupling between the driven head and the primary selector slide, means for imparting reciprocation to said driven head and primary slide,
80 the same comprising a rotary shaft, a pair of crank arms arranged out of diametric relation to each other on said shaft, with one crank arm disposed a distance of forty five
85 degrees in advance of the other crank arm, and abutment members carried by said driven head in lateral displaced relation for individual engagement with said crank arms.

Signed at Chicago, Illinois, this 23rd day of August, 1926.

FRANK G. MURRAY.