

Feb. 7, 1928.

1,658,299

J. E. OLVIS  
COIN DETECTOR

Filed Dec. 3, 1926

2 Sheets-Sheet 1

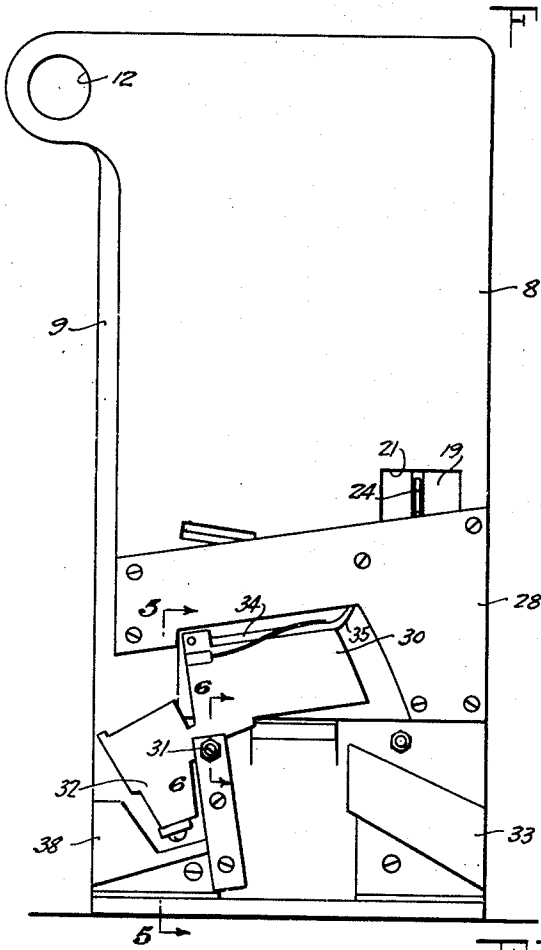


Fig. 2

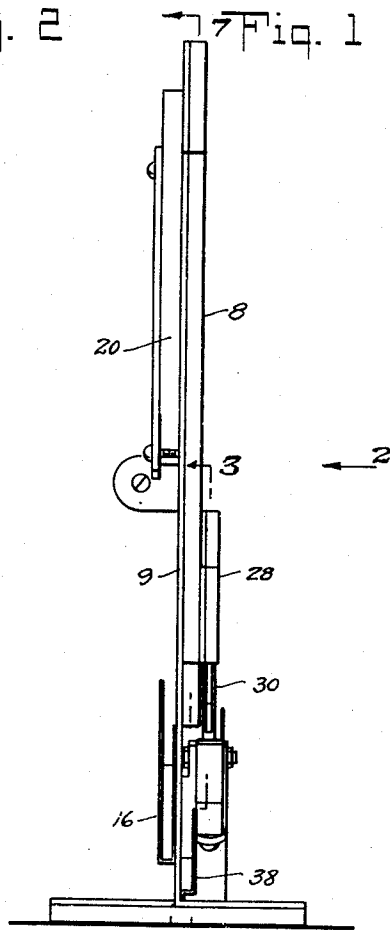


Fig. 1

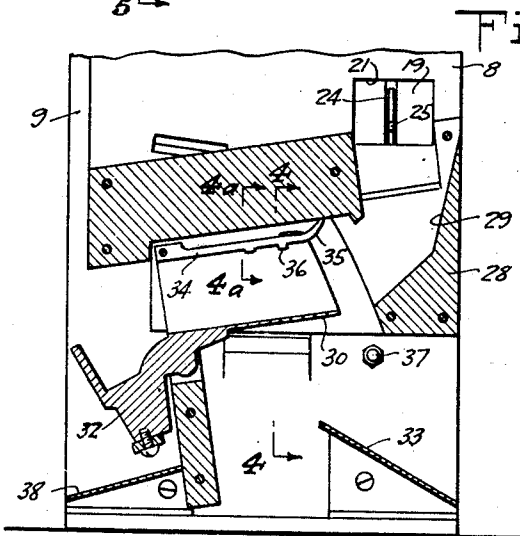


Fig. 3

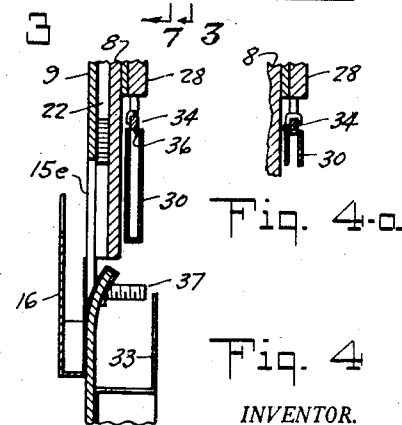


Fig. 4-a

Fig. 4

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2 Sheets-Sheet 2

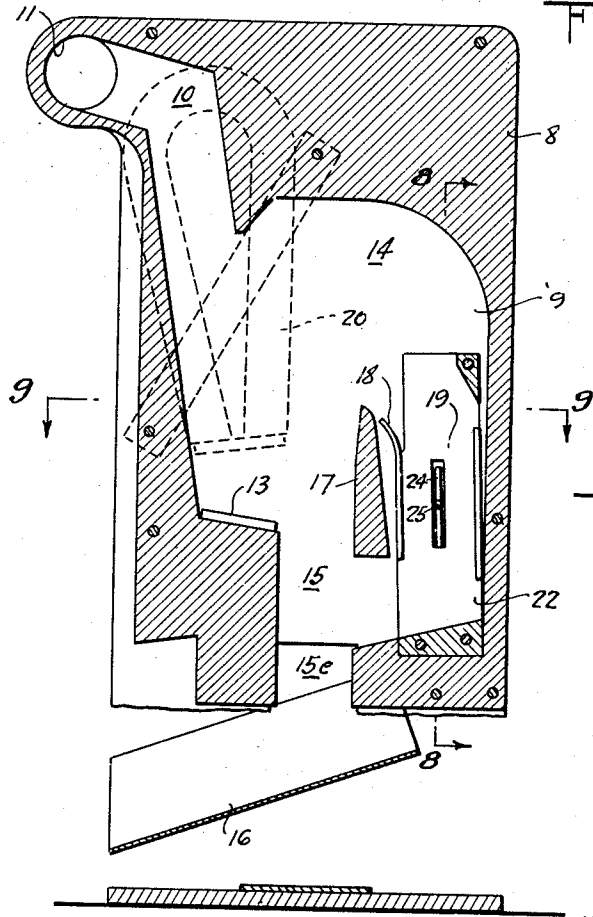


Fig. 7

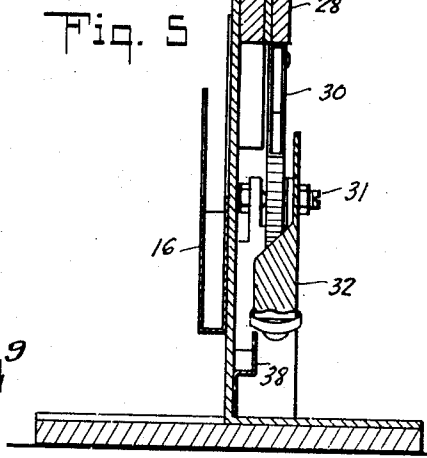


Fig. 5

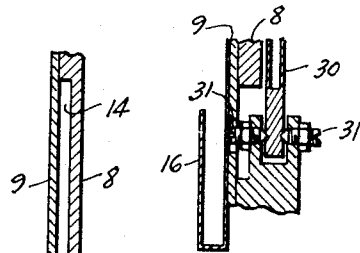


Fig. 6

Fig. 9

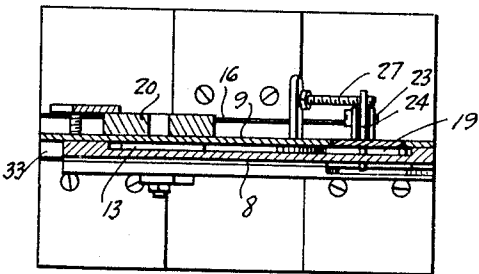


Fig. 8

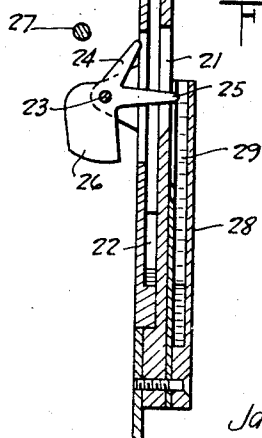


Fig. 8

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# UNITED STATES PATENT OFFICE.

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## COIN DETECTOR.

Application filed December 3, 1926. Serial No. 152,372.

This invention relates to a device for detecting spurious coins and separating them from genuine coins. More particularly, the present invention relates to a device applicable to positioning in the van of coin receiving apparatus especially coin control mechanism. The utility of such detecting devices is obvious.

The present invention has for its objects, first, the provision of a detector which has a coin chute communicating with a plurality of coin passages, one for the exit from the detector of genuine coins; second, to provide a detector with metallic classifying means to direct coins, or checks having spurious metal or material to a rejection exit and those having genuine metal toward the genuine exit; third, to provide a detector with perforated coin classifying means to separate and direct to the proper exits coins with central holes and genuine coins; and fourth to provide a detector with a sizing classifier for coins of genuine dimensions and those of undersized dimensions.

The above mentioned objects together with other objects and corresponding accomplishments are obtained by means of the embodiment of my invention illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevation of a detector; Fig. 2 is a side elevation thereof looking in the direction of arrow 2 of Fig. 1; Fig. 3 is a section of a fragment of the detector as seen on the line 3—3 of Fig. 1; Figs. 4 and 4<sup>a</sup> are sections of fragments as seen on the lines correspondingly numbered in Fig. 3; Fig. 5 is a section showing a fragment as seen on the line 5—5 of Fig. 2; Fig. 6 is a section of a fragment as seen on the line 6—6 of Fig. 2; Fig. 7 is a section as seen on the line 7—7 of Fig. 1; Fig. 8 is a section of a fragment as seen upon the line 8—8 of Fig. 7; and Fig. 9 is a section upon the line 9—9 of Fig. 7.

Referring with more particularity to the drawing, a coin detector is shown which, it will be understood, may be mechanically varied to adapt it to building into a coin control mechanism such as a coin operated machine of the vending type. The device is built with a coin receiving opening through which coins are introduced into the detector. There are exits for spurious coins, the genuine coins passing to a selected receptor such as a coin control mechanism. It will be un-

derstood that some spurious coins may have the qualities which will permit their passage through the machine but these would be relatively small in number.

The detector as shown, herein, comprises side plates 8 and 9 within which a coin chute 10 is formed. The side plates are formed with a forward extension providing an entrance to the coin chute. This entrance indicated by 11 and is formed in the plate 9. It is circular and of the same diameter as the genuine coin to be accepted. This will prevent the introduction of coins which are of too large a size. The chute is otherwise closed to the introduction of coins except through the opening 11. To facilitate the introduction of the coins, an opening 12 is provided in the plate 8, but of smaller size. This provides for finger manipulation of the coin. The coin chute 10 has a downwardly extending branch and at the bottom thereof is a shelf 13 for the coin to strike upon and bounce. Above the shelf and toward the side, the coin chute is enlarged to form a dome indicated generally by 14. At the lower end of the shelf is an exit passage 15 leading downwardly and opening as indicated by 15<sup>e</sup> into a side chute 16 inclined downwardly and extending the front of the detector, it being for the purpose of guiding the rejected coins toward a rejected coin receptor therefor, such receptor not being shown. In back of the shelf with its upper margin above the level thereof, is a hurdle 17. At the back of the hurdle is a guide 18 which directs coins to a branch chute 19 forming a continuation of the coin chute. The apparatus as described operates as follows:

A coin introduced through the opening 11 passes through the chute 10 and drops upon the shelf 13 which is rigid. The coin, if of the proper metal and having the correct resiliency will strike the shelf 13 and bounce leaping the hurdle 17 and passing into the chute 19 for further classification. If the coin is not of the proper metal, it fails to leap the hurdle and passes downwardly through the exit 15<sup>e</sup> into the inclined chute 16 to the point of rejection. Certain coins of magnetic material especially iron (and the word coins is used in this instance to mean disks), will bounce and leap the hurdle, if not hindered. For the purpose of hindering the leaping of such coins, I have pro-

vided a magnet 20 which is placed against the plate 9 and with its field so located that a coin must pass in dropping to the shelf 13. Obviously, an iron coin will have its

5 fall broken and will therefore not bounce sufficiently high to leap the hurdle, the shelf and hurdle together with the branch passages form what has been termed a metallic classifier.

10 Assuming that the coin has not been rejected by the metallic classifier, it will pass downwardly through the branch chute 19. There is an exit 21 in the side of the branch chute 19 and opening through the plate 8.

15 The branch 19 has an exit extending downwardly below the opening 21, as indicated by 22, where it is directed forwardly and through the exit 15° into chute 16. At the opening 21 there is a pawl comprising a body

20 pivoted at 23 and having two fingers 24 and 25. The pawl is weighted as indicated by 26 and the fingers are so arranged that when balanced, the finger 25 extends across the chute 19. This is in the path of the travel

25 of a coin through the chute. Extending from a projection on plate 9 is a stop 27 adapted to limit the movement of the pawl. A coin passing downwardly will impinge upon the finger 25 and turn the pawl. This

30 causes the finger 24 to be projected into the slot and if the face of the coin is unperforated the finger 24 will push the coin outwardly through the opening 21. If there is a perforation in the coin so as to admit the

35 finger 24, the latter passes into the perforation and permits the coin to drop downwardly into the space 22 so that it may pass outwardly into the rejected coin chute 16. Below the pawl so as to receive coins passing

40 through opening 21 is an offset guide chute 29. This chute is formed in a plate 28 and having a passage way therein as best shown in Fig. 3. The passage way 29 receives the coins passing through opening 21 and directs

45 them downwardly to a sizing classifier. The sizing classifier is a channel providing a tilting chute 30. It is pivoted at 31, having an adjustable counter weight 32. The arrangement is such that the chute normally is

50 in the position shown in the figure so as to be registered with the exit from chute 29, receiving therefrom coins passing through the chute. It may be tilted downwardly as best shown in Fig. 3 to deliver coins into a

55 chute 33. The chute 33 is formed by an angle plate secured to the plate 8 and simply forms a passage way for the guidance of a coin therein downwardly and toward the rear of the machine to a suitable receptor

60 not shown for genuine coins. The upper wall of the tilting chute is formed by a spring finger 34 secured at front end and having the free end bent as indicated by 35, to permit the ready entrance of coins issuing

65 from slot 29 into the tilting chute. The finger 34 is provided with a shoulder and lateral bevel indicated by 36 in Fig. 4. The arrangement is such that a coin of the proper thickness and diameter will lodge in the forward end of the tilting chute and will cause

70 the latter to swing downwardly toward the bottom of chute 33. In its downward movement, the end of finger 34 strikes a projection 37, springing the finger upwardly and permitting the release of the coin contained

75 in the chute whereupon it is delivered to the chute 33. If the coin is too thin, it will pass through one side of the finger, pass the bevel 36 and shoulder and the rear of the tilting chute and out exit 38. The same thing will

80 happen if the coin is of too small a diameter. It is obvious that I have provided a device which has a classifier to reject coins of a spurious metal. If the coin passes this classifier toward the genuine coin receptor,

85 it is again classified for perforations, and, if perforated, rejected. The next classification is that of size.

What I claim is:

1. In a device of the character described,

90 a coin chute having an exit, a tiltable classifier channel normally aligned with the exit of the said coin chute, said channel having coin lodgement means to cause proper

95 sized coins to lodge at the inlet end thereof and then to tilt the channel to deliver the lodged coin to a receptor for genuine coins, said lodgement means permitting passage therethrough of undersized coins to a rejection exit.

100 2. In a device of the character described, a coin chute having an exit, a tiltable classifier channel normally aligned with the exit of said coin chute, said channel having coin lodgement means comprising a wall of said

105 channel arranged so as to engage the edge of a proper sized coin at the inlet end of the classifier and cause the coin to lodge therein and then to tilt the channel to deliver the lodged coin to a receptor for gen-

110 uine coins, said lodgement means permitting passage through said classifier of undersized coins to a rejection exit.

115 3. In a device of the character described, a coin chute having an exit, a tiltable classifier channel normally aligned with the exit of said coin chute, said channel having coin lodgment means comprising a wall of said

120 channel yieldably secured thereto so as to engage the edge of a proper sized coin at the inlet end of the channel and cause the coin to lodge therein and then to tilt or to permit undersized coins to pass therethrough to a rejection exit and means to press said

125 yieldable wall outwardly upon the channel tilting downwardly so as to release the lodged coin to a receptor.

130 4. In a device of the class described, a coin chute having an exit, a tiltable classifier channel normally aligned with the exit

of said coin chute, said channel having a coin lodgment means comprising a wall of said channel formed by a cantilever leaf spring free at the inlet end of said chute so as to permit the passage therethrough of undersized coins to a rejection exit or to engage the edge of a proper sized coin and cause it to lodge at the inlet end, then to tilt downwardly, and an abutment to retract said spring and release the lodged coin for delivery to a receptor.

5 In a device of the class described, a coin chute having an exit, a tiltable classifier channel normally aligned with said exit, said channel having coin lodgement means comprising a wall of said channel formed by a cantilever spring having an inner laterally beveled face, said spring being free at the inlet end of said channel and arranged to permit the passage therethrough of undersized coins or to engage the edge of a proper sized coin and cause it to lodge at the inlet end, then to tilt downwardly, and an abutment to retract said spring upon channel tilting downwardly and thereby to

release the lodged coin and deliver it to a receptor.

6. In a device of the character described, a coin chute having an exit, a tiltable classifier channel, said channel having means to arrest the passage therethrough of proper size coins and to permit the passage therethrough of undersized coins to a rejection exit, said channel being actuatable by arrested coins to deliver the latter to a receptor.

7. In a device of the class described, a coin chute having an exit, a tiltable classifier channel normally aligned with the exit of said chute and having means to arrest the passage therethrough of proper sized coins and to permit the passage therethrough of undersized coins to a rejection exit, said channel being movable by the gravitative force of arrested coins to tilt and deliver the latter to a receptor.

In witness that I claim the foregoing I have hereunto subscribed my name this 26th day of November, 1926.

JAMES E. OLVIS.