March 9, 1937. J. GOTTFRIED 2,073,261

COIN SELECTOR

Filed Sept. 29, 1934

Fig. 1

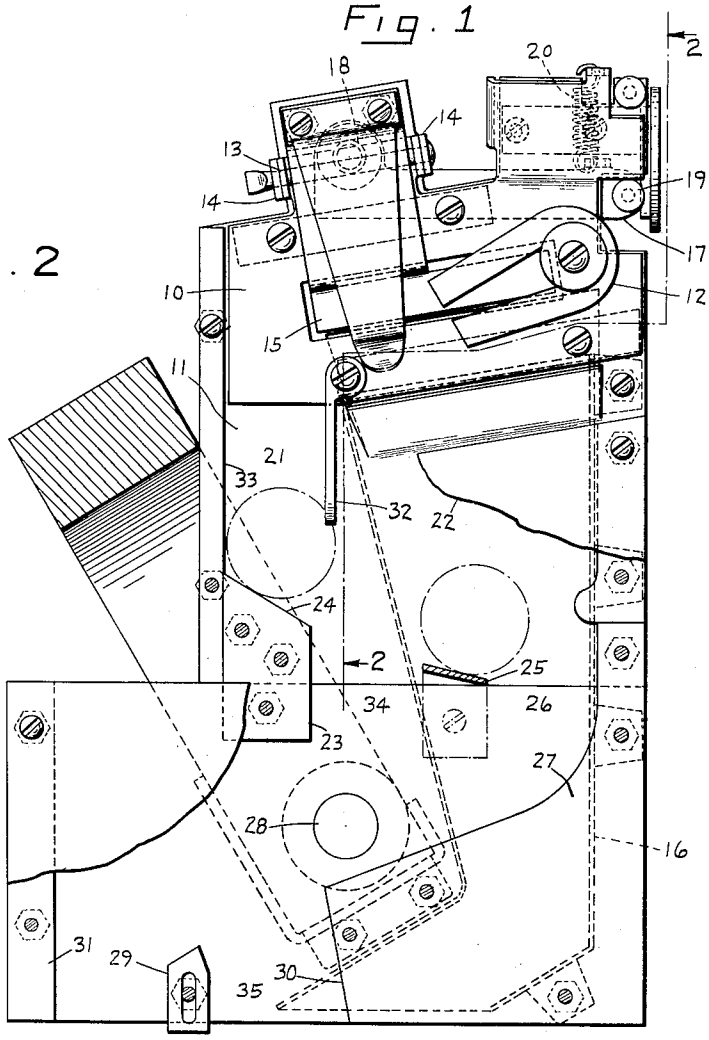



Fig. 2

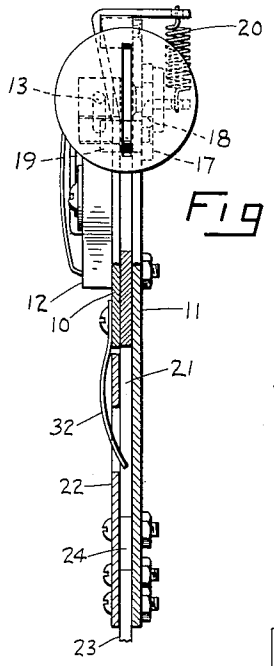
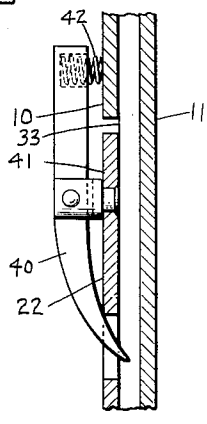



Fig. 3



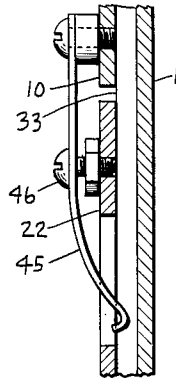




Fig. 4

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## COIN SELECTOR

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5 Claims. (Cl. 194—97)

This invention relates to coin selectors, and contemplates a device of this character equipped for the rejection of coins or slugs which are deficient in any one of a variety of respects.

It is common practice to provide coin selectors with a small magnet so arranged as to effect the rejection of magnetic materials and to direct non-magnetic coins through passages provided with devices for testing such properties as their weight, diameter, thickness and hardness. Usually separate means are provided for determining each of these properties, so that the apparatus becomes unduly complicated and its complication leads to inefficiency and inaccurate results.

Quite recently use has been made of strong magnetic fields for separating coins according to their electrical conductivity. Such apparatus, while effective for the purpose for which it is intended, is obviously incapable of effecting the rejection of coins or slugs having substantially the electrical properties of genuine coins but being defective in some other respect.

It is the object of the present invention to provide a simple and effective appliance for determining such properties as the size, weight, hardness, surface roughness and surface continuity, of coins, and to effect the rejection of coins which are deficient or improper in any of these respects.

It is a further object of the invention to combine such a tester with devices for the separation of magnetic slugs and with means for effecting a separation in accordance with electrical properties.

With these and other objects in view, the invention consists in the novel combinations and arrangements of parts representative embodiments of which are illustrated in the accompanying drawing.

In the drawing:

Fig. 1 is a fragmentary side elevation, partly in section, of a coin selector comprising one embodiment of the present invention.

Fig. 2 is a transverse section, substantially on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary transverse section showing a modification.

Fig. 4 is a similar transverse section showing a second modification.

The selector comprises a coin receiving passage defined by the lateral walls 10 and 11. To the side of wall 10 is secured a small magnet 12 for the purpose of causing the rejection of slugs of magnetic material. Such slugs are stopped and held in the coin receiving passage, and to effect their removal therefrom the wall portion 10 is hinged at 13 to arms 14 extending transversely from wall 11. A finger 15 in the upper portion of the coin receiving passage effects the separation of magnetic slugs from the magnet, whereupon they are ejected through a chute 16 fixed to the outside of the wall 11. The movement of the hinged wall portion 10 about pivot 13 is effected whenever a coin or slug is placed in the coin receiving passage. For this purpose, a lever 17 pivoted at 18 to the outside of wall 11 is provided with a roller 19 extending across the entrance of the coin passage. A spring 20 connects a bracket extending transversely from arm 17 with an arm extending transversely from the wall 10.

From the coin receiving passage between the walls 10 and 11 non-magnetic coins are directed downwardly through a substantially vertical passage 21 between wall 11 and a plate 22 suitably spaced from and joined to wall 11. At the lower end of the vertical passage 21 is an anvil 23 having a forwardly and downwardly inclined face 24. Coins rebounding from the anvil are directed upwardly and forwardly into a widened passage between wall 11 and the forward portion of plate 22. Somewhat below the face 24 of the anvil and spaced forwardly therefrom a distance slightly greater than the diameter of the largest coin which can be placed in the coin receiving passage is a coin separator 25 having an extended upper face which is inclined forwardly and downwardly. Acceptable coins are projected from the anvil 23 in such a manner as to engage the separator 25 and drop through a passage 26 between the forward edge of said separator and the side wall spacer plate 27. The margin of this plate curves downwardly and rearwardly, forming a surface down which the coin is rolled. Near the lower end of the spacer plate are the poles 28 of a magnet which furnishes a field of sufficient intensity to materially deflect coins and slugs having a conductivity equal to or greater than that of coin silver. The particular selector illustrated is designed for the acceptance of coins of low conductivity such as those of nickel. A coin separator 29 having an upwardly projecting point and reversely sloping faces effects the separation of coins which are materially deflected by the field between the magnetic poles 28 from those which are less deflected; the deflected coins dropping through a rejected coin passage defined by the front face of coin separator 29 and the margin 30 of plate 27, and the accepted coins leaving the separator through a passage defined by the

rear face of the separator 29 and a side wall spacer strip 31.

The parts thus far described are not novel per se; however, they are elements of novel combinations including the mechanism which will now be described. The present invention contemplates a controlling device which effects the rejection of coins that are light, undersize, soft, rough surfaced, or lack a continuous surface. The embodiment of this device selected for illustrative purposes operates on full size coins both before and after their impact upon anvil 23, and comprises a finger or feeler member 32 extending transversely into the coin passage above and opposite the forward portion of the anvil. In the embodiment of the invention shown in Figs. 1 and 2, this member is of a spring metal such as bronze and comprises an inturned end adapted to furnish a limited area of contact with the surface of a coin. This feeler is so proportioned and designed as to exert on the face of a coin the amount of pressure necessary for the performance of its functions without unduly retarding the passage of proper coins. It is so located with respect to the vertical coin passage 21 and the face 24 of the anvil as to be engaged and deflected outwardly by coins dropping through said vertical coin passage, and to be in engagement with the face of coins of full size at the time such coins are deflected by impact with the anvil.

The feeler member 32 causes the rejection of coins having any one of a variety of defects either by stopping and holding them or by so retarding their movement that they fall to the left of separator 25 and through the passage for rejected coins. If a coin is undersize, on descending through the passage 21 it will pass between the feeler 32 and the side wall spacer strip 33, and on being deflected by the anvil will engage the inturned end of the feeler finger. Its motion is thus halted and, instead of passing to the right of separator 25, it will drop directly through passage 34 between the anvil 23 and separator 25 and thence through the rejected coin passage 35 between separator 29 and wall 30.

If a coin is of proper size but the surface is rough, its movement upon being projected from the face of the anvil will be so retarded by its engagement with feeler 32 that it will drop through the passage 34 and be rejected. A soft coin leaves the anvil face with but a low velocity and its velocity is further retarded by feeler finger to cause its rejection. Coins which though soft are resilient are rejected due to the high friction between their soft material and the feeler. A coin which though of proper size and of a material having the proper resiliency is lighter than a genuine coin will likewise be rejected, lacking sufficient momentum to overcome resistance of the feeler. A coin lacking a continuous surface such as one having a hole will be halted by the engagement of the feeler finger in such hole.

Since coins or slugs may have such properties that their movement will not only be retarded but they will be retained and held in the coin passage by the feeler finger, it is desirable that means be provided for withdrawing this finger to permit their release. For this purpose, as illustrated in Figs. 1 and 2, the feeler may be mounted on the hinged wall section 10 of the coin receiving passage. Thus, the insertion of a second coin into the apparatus will effect the release not only of coins held in the coin receiving passage by the small magnet 12 but likewise coins held by feeler finger 32.

It will be obvious that the feeler finger may take various forms, of which the bronze spring above-described is merely representative. Another form is illustrated in Fig. 3, wherein the feeler is a substantially rigid lever 40 pivoted at 41 to such a member as the side plate 10 or an extension thereof and urged into the coin passage by suitable means such as a spring 42. If desired, means may be provided for adjusting the tension of such spring. Fig. 4 illustrates a second modification, in which the feeler 45 is of spring metal but its supporting devices comprise an adjusting screw 46 for varying the spring tension. It will be apparent that the use of such a feeler finger in any of the forms described, as well as other forms, enables the separation and rejection of spurious coins and slugs the defects of which are of such a nature that their rejection by means hitherto known has been extraordinarily difficult if not impossible.

It will be understood that the embodiments of the invention herein described are typical and illustrative only, the invention being susceptible to embodiment in other forms, all falling within the scope of the appended claims.

What is claimed is:

1. In a coin selector, in combination, means defining a coin passage, an anvil in said coin passage, and a member projecting laterally into said coin passage for engagement and deflection by coins approaching said anvil and so positioned with respect to said passage and said anvil that a properly sized coin remains engaged by said member during impact with said anvil but an undersized coin passes clear of said member prior to impact with said anvil, said member thereupon engaging the edge of said undersized coin and by such engagement effecting its rejection.

2. In a coin selector, in combination, means defining a coin passage, an anvil in said coin passage, and a member projecting laterally into said coin passage, said member being adapted to effect the rejection of an undersized coin by engagement with its edge and to effect the rejection of coins of improper surface characteristics, deficient hardness or deficient weight, by engagement with their surface.

3. In a coin selector, in combination, means defining a coin passage, an anvil in said coin passage, a magnetic field in said coin passage, means for directing coins properly projected from said anvil through said magnetic field, a rejected coin exit adjacent said magnetic field for egress of coins over-deflected by said magnetic field, a retarding feeler in the path of coins projected from said anvil, and means for directing spurious coins having such characteristics as to be over-retarded by said feeler directly through said rejected coin exit.

4. In a coin selector, in combination, coin receiving means comprising a hinged wall section and devices actuated by the insertion of a coin for displacing said hinged wall section, means defining a coin passage, an anvil in said coin passage, and a feeler member projecting laterally into said coin passage so positioned as to be in engagement with a face of a properly sized coin at the time of its impact with said anvil and to control the movement of coins projected from said anvil in such a manner as to effect the separation of genuine coins from spurious coins, said feeler member being supported on said hinged wall section whereby the insertion of a

second coin effects the release of a spurious coin held by said feeler member.

5. In a coin selector, in combination, means defining a coin passage, an anvil in said coin passage, a member projecting laterally into said coin passage so positioned as to be engaged and displaced by a coin approaching said anvil, to remain in engagement with a face of a properly sized coin during impact with said anvil and by such engagement to direct genuine coins away from said anvil into one pasage and to direct spurious coins away from said anvil to a rejection outlet.

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