Jan. 6, 1953 J. L. ANDERSON 2,624,438

SLUG REJECTOR SCAVENGER

Filed June 29, 1949

FIG. 1.

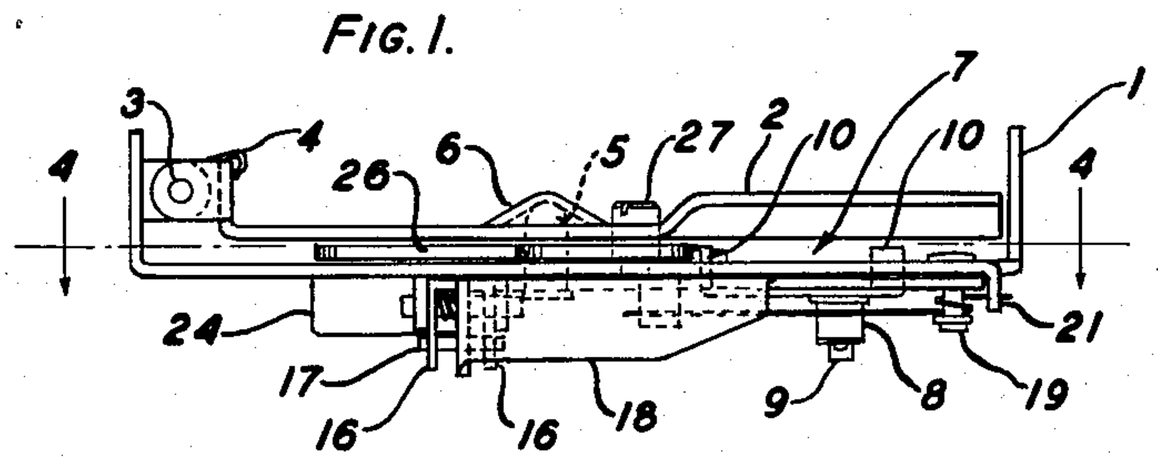


FIG. 2.

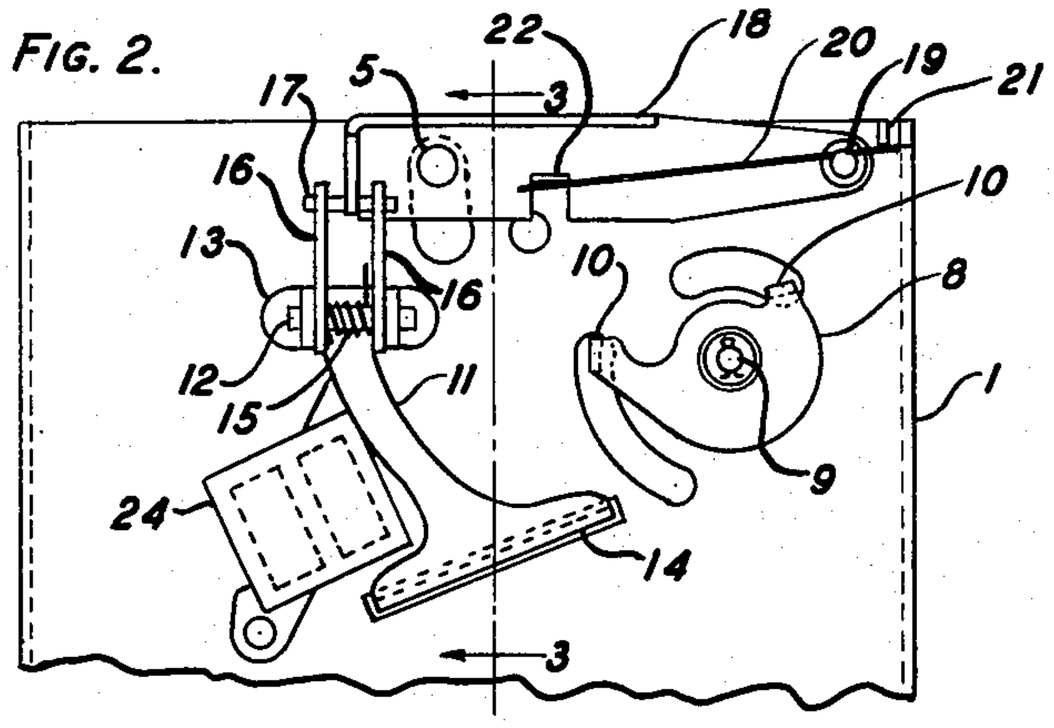
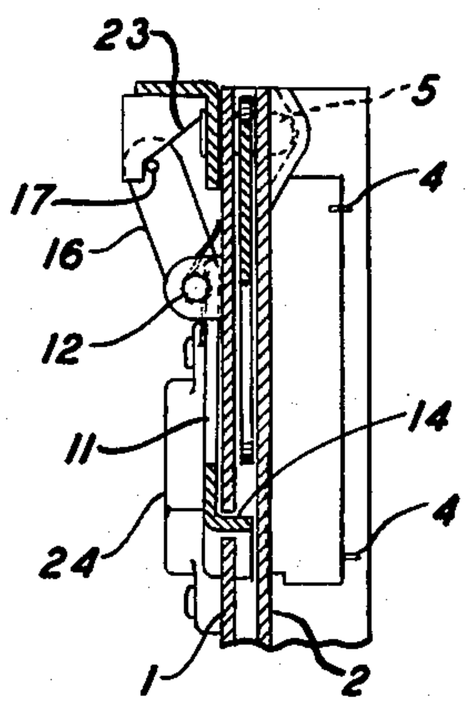


FIG. 3.



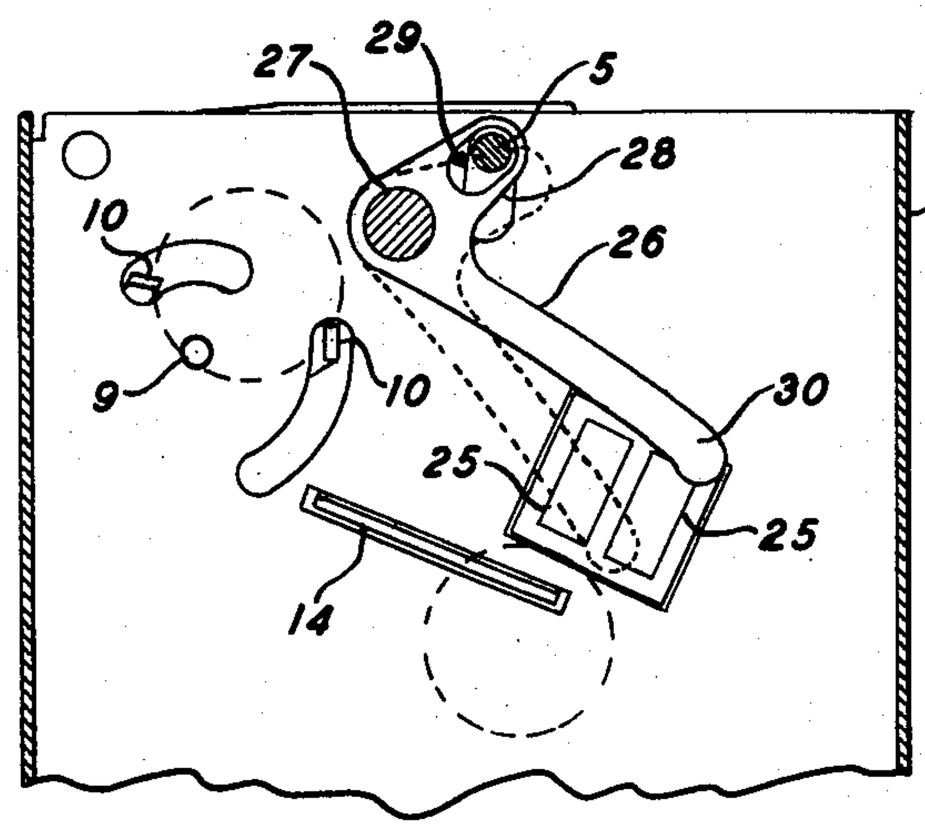


FIG. 4

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SLUG REJECTOR SCAVENGER

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1 Claim. (Cl. 194—101)

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This invention relates in general to coin separating apparatus and more particularly to a scavenging means in a coin separator for removing paramagnetic coins and debris retained therein.

In conventional type coin separators a permanent magnet is positioned adjacent to a passageway for the purpose of reducing the velocity of a coin moving under the influence of gravity in order to project coins of different conductivity into different predetermined trajectories, thus providing means whereby acceptable coins may be separated from non-acceptable coins. When a paramagnetic coin is deposited in such a device it will adhere to the permanent magnet and prevent the descent of further coins until the suspended coin is removed, and to this end several means, including the use of a movable wiper blade, are normally provided.

In devices employing a gate for opening the passageway the runway over which a coin descends is usually positioned on the gate and subject to displacement when the previously mentioned wiper blade is operated in order to provide a path for the removal of the suspended coin. This means of scavenging is not always effective as the suspended coin sometimes becomes obliquely positioned on the runway, thus obstructing the movement of the wiper member.

This invention provides means whereby an independent retractable runway is provided in the frame which is concurrently withdrawn from the passageway when a wiper blade is caused to scan the face of the magnet and comprises the principal object of the invention.

A further object of the invention is the provision of a retractable runway adapted to coact concurrently with the movement of a wiper blade adapted to be withdrawn from the coin passageway in order to strip therefrom any accumulated debris and simultaneously provide a pathway for the removal and rejection of a coin suspended in the pasageway on the face of the magnet.

These and other advantages in one embodiment of the invention are described and shown in the appended specification and drawing in which:

Fig. 1 is a plan view of a coin separator incorporating the new scavenger means.

Fig. 2 is a fragmentary side elevation of the separator shown Fig. 1.

Fig. 3 is a fragmentary cross-sectional view of the separator taken through section line 3—3 Fig. 2.

Fig. 4 is a fragmentary cross-sectional view of the separator taken through section line 4—4 Fig. 1.

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A frame 1 comprises a housing or stationary plate for the entire apparatus and a gate member 2 or movable plate is pivotally secured to the frame 1 by a pin hinge 3. The gate is normally urged in position shown Fig. 1 by spring 4 biased between the gate and the frame 1. A pin 5 normally projects into a conical cavity 6 in the gate and serves as a positioning stop for the gate. The space between the inside faces of the gate and the frame forms a passageway 7 for the descent of coins. A counterweighted cradle 8 is pivotally journaled on a fixed stud 9 in the frame and provided with a pair of spaced projections 10 projecting through suitable apertures in frame 1 into the passageway 7.

A runway member 11 is pivotally journaled on a pin 12, which pin is secured in a clevis 13 integral with the outside surface of the frame 1.

The lower edge of the member 11 is formed to provide a sloping track 14, better shown Fig. 4, which normally projects into the passageway between the gate and the frame 1 through a suitable close clearance aperture in the frame 1.

The runway member is normally urged inward by a coil spring 15 surrounding pin 12 and biased between the member 11 and the clevis 13. A pair of arms 16 integral with member 11 serve as a support for a cam pin 17 secured in the end of both arms, as shown Figs. 2 and 3.

A scavenger lever 18 is pivotally secured at one end to frame 1 by a stud 19. Pin 5 is riveted in the vertical portion of lever 18 and projects through a suitable clearance aperture as shown.

The lever 18 is normally urged into its upward position by a spring 20 surrounding stud 19 and having one end bearing against a lug 21 of the frame 1 and its opposite end bearing against an ear 22 integral with lever 18. The end of the lever opposite stud 19 is formed to provide an oblique cam 23, shown Fig. 3, which cam engages pin 17 in the arms 16 of the member 11.

A permanent magnet 24 having two pole faces is secured to the outside of the frame 1 with its pole pieces 25 flush with the inside surface of the frame 1, as shown Fig. 4.

A wiper blade 26 is pivotally secured to the inside surface of the frame 1 by a stud 27 and has a frame 28 with aperture 29 therein through which the pin 5 projects.

The end 30 of blade 26 is adapted for movement over the pole pieces 25.

In operation and assuming all components to be in normal position as shown and an acceptable coin is deposited in passageway 7 it will descend by gravity and straddle the projection 10 of the cradle 8 and thereby rotate the cradle 8

and be deposited on track 14 where it will normally descend at a predetermined velocity and traverse the magnetic flux supplied by the magnet 24 and be deflected into an acceptance passageway not shown.

A paramagnetic coin deposited in passageway 7 will likewise be transferred for descent on track 14 but will be retained against the pole pieces 25 of magnet 24 which will obstruct the descent of a subsequent coin. Under these conditions the scavenger lever 18 is caused to be moved downward against the restraining action of spring 20 and cam 23 will coact against pin 17 to rock member 11 against the restraining action of spring 15 about pin 12. This movement will withdraw the track 14 from the passageway. Simultaneously the downward movement of lever 18 will open gate 2 by the camming action of pin 5 in the conical cavity 6 of the gate 2 and concurrently pin 5 will move arm 28 of the wiper blade 26 downward which will cause its end 30 to engage the suspended coin and move it downwardly and into a reject passageway, not shown.

It is now apparent that any coin deposited while the lever 18 is in its downward position will be guided into the reject passageway by the outer edge of blade 26.

It is also apparent that any debris deposited in the passageway 7 and resting on the track 14 will be stripped therefrom by the scavenger motion of the lever 18.

Having described my invention I claim:

In a coin separator a frame, a gate member vertically pivoted to said frame including means for normally urging said gate in parallel relation with said frame forming a coin testing passageway therebetween, a runway member pivotally

secured to said frame and adapted for movement at substantially right angles and opposite to the movement of said gate, said runway member having an integral sloping track normally positioned in said passageway, means for urging said runway member in normal position, a permanent magnet secured in said frame with its pole pieces positioned above said runway and substantially flush with the inside surface of said frame, a wiper blade pivotally secured at one end to said frame and normally positioned in said passageway to one side of said pole pieces and adapted for movement over said pole pieces and substantially at right angles to the movement of said gate and said runway member, a scavenger lever pivotally secured at one end to said frame and having articulated means connecting said gate said runway member and said wiper blade whereby the movement of said scavenger lever will rotate said gate, said runway member and said wiper blade about their respective pivots to move said gate away from said frame and withdraw said runway member from said passageway and move said wiper blade across the face of said pole pieces to dislodge and reject by gravity a coin and/or debris in said passageway.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,226,873	Patzer et al.	Dec. 31, 1940
2,292,628	Fry	Aug. 11, 1942
2,339,823	Vogel	Jan. 25, 1944