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J. GOTTFRIED ET AL

2,247,488

COIN SELECTOR

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FIG. 1.

FIG. 2.

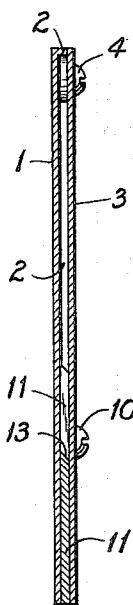
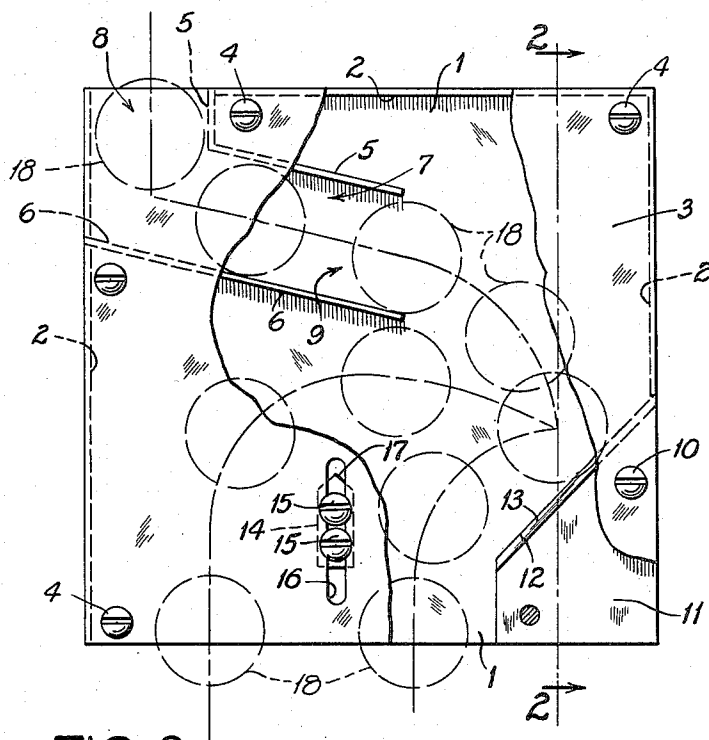
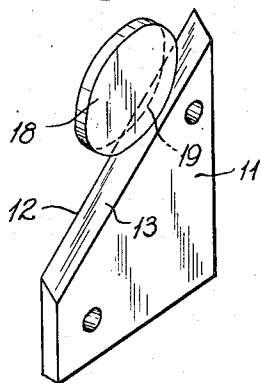


FIG. 3.



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COIN SELECTOR

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2 Claims. (Cl. 194—100)

This invention relates to coin selectors, and with regard to certain more specific features, to coin selectors for segregating good coins from slugs and like counterfeit tokens.

Among the several objects of the invention may be noted the provision of a coin selector of the class described which is particularly adapted for separating coins and slugs or the like which are made of different metals of substantially equal elasticity, but of different hardness; the provision of a coin selector of the class described which is particularly adapted to segregate United States nickels from slugs or counterfeit coins of die-casting metal; and the provision of a coin selector of the class described which is relatively simple and economical in construction and extremely reliable in action. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing, in which is illustrated one of various possible embodiments of the invention—

Fig. 1 is a front elevation of a coin selector embodying the present invention;

Fig. 2 is a vertical section taken substantially along line 2—2 of Fig. 1; and,

Fig. 3 is a perspective view of an anvil piece.

Similar reference characters indicate corresponding parts throughout the several views of the drawing.

Coins (by which term is hereinafter meant both genuine coins and counterfeit coins, tokens, or slugs) have long been separated by subjecting them to bouncing tests, as by dropping them edge-wise against an anvil, the segregation being effected in accordance with the extent of rebound of coins of various compositions, and hence various elasticities.

Such bouncing tests are relatively ineffective, however, when the metals of the coins are of substantially the same elasticities, except when special provisions, such as brought about by the present invention, are adopted. The problem becomes particularly acute in the separation of United States nickels (five-cent pieces) and counterfeit tokens or slugs made of die-casting metal. The nickel alloy of the United States nickel coin, unfortunately, has substantially the same elasticity as does die-casting metal. How-

ever, the hardness of these two metals are different; the nickel alloy of the nickel coin being somewhat harder than the die-casting metal. The coin selector of this invention effects a segregation of such genuine nickels and die-casting metal slugs in accordance with the relative hardnesses of these two metals.

Referring now more particularly to the drawing, there is illustrated a coin selector embodying the present invention. This comprises a base plate 1 having along certain of its edges projecting flanges 2. The flanges 2 extend upwardly from the base plate 1 a distance just in excess of the thickness of the coins to be tested, such as the United States nickel. Spaced from the base plate 1 by the upper edges of flanges 2 is a cover plate 3, which is the same in size and shape as the base plate 1. Screws 4 hold the base plate 1 and the cover plate 2 together in the aforementioned spaced relationship.

The base plate 1, near one of its upper corners, is provided with a pair of spaced, parallel projections 5 and 6, serving to define, with plates 1 and 3 a chute 7. The chute 7 preferably has an initial portion 8 leading vertically downwardly for a short distance, and then a sloping portion 9 extending downwardly and across the plate 1.

In the diametrically opposite corner of the base plate 1 from the chute 7, there is mounted, as by screws 10, a bouncing block or anvil piece 11 (see also Fig. 3), which has a sloping albeit smooth and unbroken bouncing edge 12 making an angle with respect to the edges and bottom of base 1 of the order of 45°, or the like. The particular angle is of no moment, except that it should provide a bouncing edge disposed at a relatively large angle to the path of oncoming coins delivered from the chute 7 thereagainst. In addition to sloping in this respect, however, the bouncing edge 12 is bevelled as indicated at numeral 13, so that said bouncing edge, cross-wise of the selector, is not at a right angle to the planes of the sides of the anvil piece 11. In previous anvil pieces of this general construction, the bouncing edge has been at a right angle to the planes of the sides of the anvil piece, and consequently to the inner surfaces of base plate 1 and cover plate 2.

In approximately mid-position between the anvil piece 11 and the opposite edge of the base plate 1, there is provided a separation block 14, which is held in position between the base plate 1 and the cover 3 by a pair of screws or the like 15 passing through a slot 16 in the cover 3. By loosening the screws 15, the separation block 14

may be moved vertically up and down to position its point 17 at the proper separation location.

The operation of the coin selector as thus constructed is as follows:

Coins, inserted at the upper left-hand corner of the selector, first fall through the vertical portion 8 of the chute 7, and then slide or roll along the sloping portion 9 of the chute 7, thereby acquiring a considerable momentum. When the coins thus introduced (shown in dotted lines and indicated by numeral 18) leave the chute 7, they are projected along a downward curve, against the bouncing edge 12 of the anvil piece 11. The spacing between the inner surfaces of base 1 and cover 3, it will be recalled, is somewhat greater than the thickness of the coins 18, so when said coins hit the bouncing edge of the anvil piece 11, they do so, due to the beveled character of said bouncing edge, along one of their circular corners (a corner of a coin being considered as the line of intersection of a side face of said coin and its cylindrical edge face), rather than hitting the bouncing edge on their cylindrical edge faces, as is the case when the bouncing edge is at right angles to the planes of the side plates. Consequently, in the present invention, the bouncing coins are wedged, to a slight extent, between said bevelled edge 13 and the inner surface of cover piece 3 (or the inner surface of base 1, in case the bevelled edge 13 slopes in a direction oppositely to that shown in the drawing). When a relatively hard coin, such as the United States nickel, is subjected to said wedging action, it is not substantially hindered thereby, but said nickel coin bounces relatively vigorously, in accordance with its hardness and elasticity, over the top of the separating point 17 of separating block 14 and then falls out from the coin selector at the bottom thereof, near the left-hand edge thereof as viewed in Fig. 1. A softer coin, such as a die-casting metal coin, however, is momentarily hindered by this wedging action, because of the energy absorption incident to the making of a slight dent or deformation, either temporary or permanent, along one of the edges of said softer coin, such as at the point of impact indicated by numeral 19 in Fig. 3, and this hindering action means that the softer coin, regardless of its elasticity, will not bounce to the same extent as the harder coin. With the separator point 17 of the block 14 properly adjusted, the softer coin will bounce to the right thereof, as viewed in Fig. 1, and will be discharged from the coin selector at the lower edge thereof, towards the right-hand side thereof as viewed in Fig. 1. Thus the two classes of coins, comprising the relatively harder coins from the relatively softer coins, are segregated in accordance with their relative hardness, regardless of their nearly equal elasticities.

One of the principal advantages of the present invention is the ease and simplicity with which it may be embodied in many coin selectors of the same general type now in use. For this purpose, in order to achieve the benefits of the present invention, all that needs to be done is to remove the anvil piece or bouncing block and grind or otherwise form a bevelled bouncing edge thereon, in place of the heretofore-customary right-angular bouncing edge.

It will be understood that the present invention may readily be adapted for the segregation of different coins other than United States nickels and die-casting metal slugs. In fact, it is of equal applicability in all instances where the hardnesses of the metals of the types of coins to be separated are different, even if the elasticities of said metals are substantially identical.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

We claim:

1. In a coin selector, means providing a coin passage slightly wider than the thickness of coins presented thereto and including coin guiding walls, an anvil member toward which coins move for contact and away from which they bounce, a contact face on said anvil member comprising an unbroken surface lying at an angle to the trajectory of a coin and extending at an angle other than perpendicular from said guiding walls, and comprising a plane of contact engageable only with a corner of a bouncing coin which engages the contact face of said anvil.

2. In a coin selector, substantially vertical walls engageable with the side faces of a coin inserted there-between and spaced apart a distance slightly greater than the thickness of said coin and defining a coin passage, an anvil member toward which coins move for contact and away from which they bounce, a contact face on said anvil member comprising an unbroken surface lying at an angle to the trajectory of a coin from said passage and having a knife edge located between said walls and substantially against one of said walls, said unbroken surface being located at an angle other than a right angle to said walls whereby one corner only of an approaching coin engages said unbroken surface.

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