

Oct. 22, 1929.

B. L. FRY
COIN DETECTOR

1,732,509

Filed April 19, 1928

2 Sheets-Sheet 1

Fig. 1.

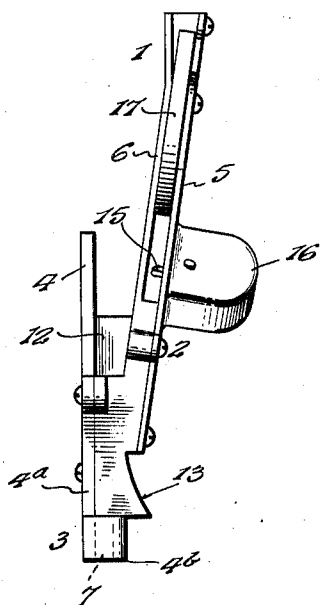


Fig. 2.

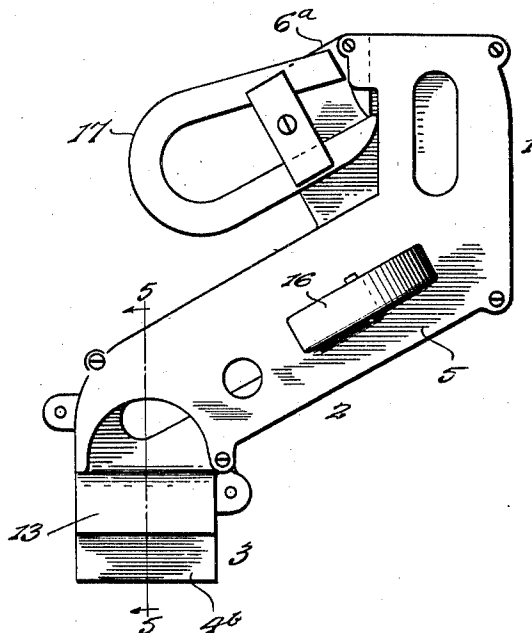


Fig. 3.

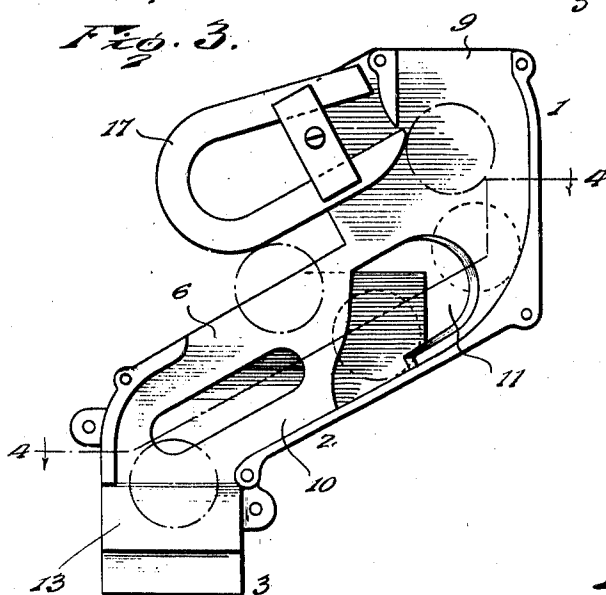
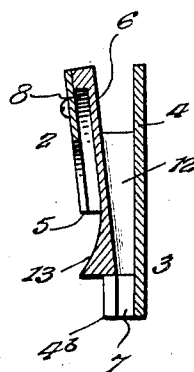


Fig. 5.



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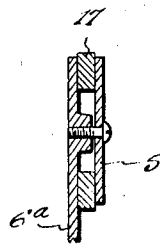
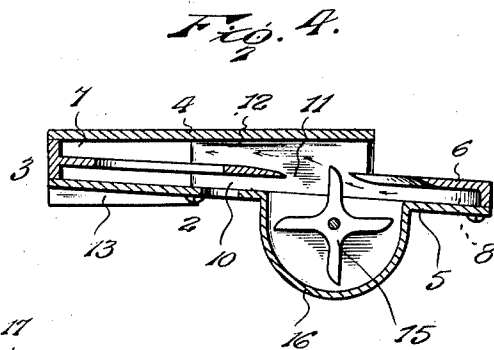
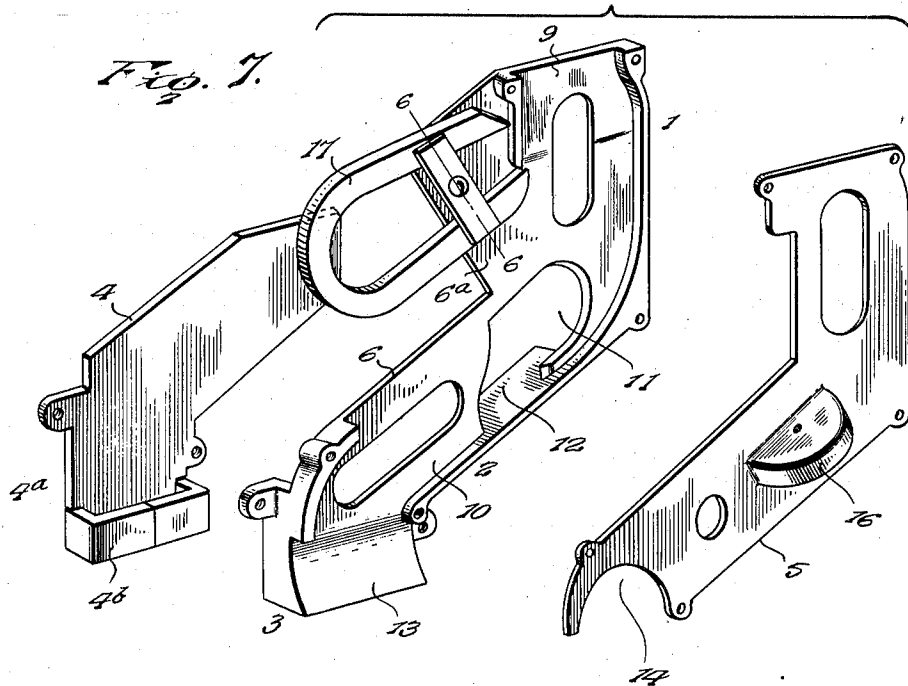
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

BENJAMIN L. FRY, OF ST. LOUIS, MISSOURI

COIN DETECTOR

Application filed April 19, 1928. Serial No. 271,284.

Coin controlled mechanism for vending and servicing machines is subjected to fraudulent practices, the most common being the use of slugs and analogous devices which are deposited in the coin opening in an attempt to operate the mechanism in substantially the same manner as by a legitimate coin.

The present invention provides a detector mechanism for separating and rejecting the spurious devices that may be employed by the unscrupulous in an effort to obtain service or an article without rendering compensation.

The invention provides a coin-way or chute having two passages, one for the legitimate coin and the other for the slug, dummy, washer or other spurious device generally employed as means for fraudulently operating coin controlled mechanisms of various kinds.

An essential feature of the invention is the provision of means whereby the rejected slugs, magnetic or non-magnetic, are discharged at a given point for convenience, thereby enabling the use of a coin-way of minimum length and having only two points of discharge, one for the legitimate coin and the other for the spurious devices or slugs.

While the drawings illustrate a preferred embodiment of the invention, it is to be understood that in adapting the means to meet specific needs and requirements, the design may be varied and changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which—

Figure 1 is a front view of a coin way for coin controlled mechanism embodying the invention.

Figure 2 is a side view of the coinway.

Figure 3 is a view similar to Figure 2 with the inner or near wall removed, and illustrating the operation.

Figure 4 is a horizontal sectional view of the coin way on the line 4—4 of Figure 3.

Figure 5 is a detail sectional view on the line 5—5 of Figure 2, looking in the direction of the arrows.

Figure 6 is a fragmentary sectional view on the line 6—6 of Figure 7.

Figure 7 is a detail perspective view of the coin way, the walls being separated.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawing by like reference characters.

The coin way is comparatively short and includes terminal vertical portions and an intermediate inclined portion and comprises three walls and two passages, the upper vertical portion and the intermediate inclined portion leaning away from a plane passing through the lower vertical portion. The numeral 1 denotes the upper vertical portion, 3 the lower vertical portion and 2 the intermediate inclined portion connecting the vertical portions 1 and 3. The upper and intermediate portions of the coin way lean outwardly from a vertical plane passing through the lower portion 3 when the coin way is operatively disposed. The coin way includes side walls 4 and 5 and an intermediate wall 6, two passages being formed between the several walls, one of the passages, as 7, constituting the path of the legitimate coin which is directed thereby to the coin controlled mechanism according to the nature of the machine for which the coin way is devised. The other passage, 8, includes an upper receiving portion and an intermediate portion. The legitimate coin and the slug, or other spurious device are received in the main passage and detector means are associated with said main passage to effect separation of the legitimate coin from the slug, so that the legitimate coin is retained and directed to the mechanism for operating the machine whereas the slug is rejected. The main passage comprises an upper vertical portion 9 and a lower inclined portion 10. The legitimate coin passage 7 includes an upper inclined portion and a lower vertical portion. The two passages are in communication through an opening 11 formed in the intermediate wall 6 adjacent the upper end of the inclined portion. The upper end of the opening 11 is half round and beveled to an edge adjacent

the passage 7, whereas the lower end of the opening 11 is substantially vertical, but of ogee outline. A flange 12 projects laterally from the lower or bottom portion of the intermediate wall, and forms the bottom of the passage 7, and supports the legitimate coin when traveling from the main passage or inclined portion 10 thereof to the inclined portion of the passage 7. The lower forward portion of the opening 11 is cut away, as indicated most clearly in Figure 7 to admit of the unobstructed passage of the coin from the coin way 10 to the coin way 7, as indicated by the dotted lines in Figure 3. To facilitate the transfer of the coin from the way 10 to the way 7 the rear portion of the opening 11 is beveled, and the front portion correspondingly beveled in a reverse direction, as indicated most clearly in Figure 4 of the drawings. An inclined ledge 13 is located at the delivery end of the main passage and constitutes a deflector to direct the slugs laterally in their discharge. The lower end of the side wall 5 is cut away, as indicated at 14 to provide a ready delivery of the slug in its discharge.

A detector 15 is mounted upon the side wall 5 directly opposite the opening 11, and is enclosed within a housing 16, preferably forming a part of the wall 5. The detector 15 is free to rotate under the influence of a coin or slug traveling through the main passage. The detector 15 includes a plurality of teeth or points, the ends of which are adapted to operate across the main passage and sweep through the opening 11, the terminal portions of the teeth or points being beveled upon the rear sides or faces to provide ample clearance for legitimate coins in their passage through the opening 11. The points or teeth are straight upon their forward side or face to pass through the opening of a washer and cause it to continue in the main passage and prevent transference to the legitimate coin passage 7.

The side wall 4 includes a vertical portion 4^a which terminates in a section 4^b disposed below the deflecting ledge 13 and forming an extension of the part 3. The side wall 4 occupies a vertical position, as indicated most clearly in Figure 1, the passage 7 formed between the two walls 4 and 6 being open at the top and providing ample clearance for the legitimate coin.

The top of the inclined portion 10 of the main passage and the lower rear portion of the part 9 of the main passage are open to provide ample clearance for the passage of slugs which are amenable to magnetic attraction. A permanent magnet 17 of horse shoe type is located above the way 10 and in the rear of the way 9 and is inclined downwardly and rearwardly in conformity to the inclination of the way 10. The top leg of the magnet 17 terminates at the rear

of the way 9 and the lower leg projects into the lower rear portion of the way 9 and is made rounding to properly direct a magnetic slug from the entrance portion 9 of the main passage into the inclined portion 10. A slug amenable to magnetic attraction when introduced into the coin way is attracted by the magnet 17 and held suspended until it clears the opening 11 so that when it drops from the magnet by reason of the decreased magnetic attraction it falls into the inclined portion 10 of the main passage at the rear of the opening 11 so as not to pass there-through into the passage 7. The magnet 17 exerts an attractive force upon a slug amenable to magnetic attraction to cause it to clear the opening 11 and prevent its passage therethrough. The magnetic attraction decreasing towards the closed end of the magnet permits the slug to drop after clearing the opening 11 so that it continues to travel through the lower portion of the way 10 and discharges laterally upon reaching the deflector 13. The magnet 17 is attached to an extension 6^a at the upper end of the wall 6. It is observed that the magnet 17 is disposed adjacent the receiving end of the coin way and exerts an attractive force upon a magnetic slug the instant the same is introduced into the coin slot or opening. By having the upper portion of the coin way leaning from the vertical, as indicated most clearly in Figure 1 of the drawings, non-magnetic slugs do not tend to pass through the opening 11 into the passage 7. A coin of proper denominate value is caused to pass through the opening 11 by the detector 15, a tooth or point of which exerts a lateral pressure upon the coin whereby to deflect its forward edge through the opening 11, it meeting with no appreciable resistance by engaging and riding upon the knife edge at the lower end of the opening 11 and separating the passages 10 and 7. The legitimate coin is discharged at the lower end of the passage 7 in position to operate the coin controlled mechanism. The slugs, both magnetic and non-magnetic, are discharged at the delivery end of the passage 10 and are not scattered at various points throughout the mechanism which is objectionable. The arrangement admits of a coin way of minimum length and is admirably adapted for telephone and like coin controlled mechanism.

Having thus described the invention, I claim:

1. A coin way for coin controlled mechanism, the same including adjacent passages and end vertical portions and an intermediate inclined portion, the latter having an opening in the wall separating the two passages for transference of a legitimate coin from the main receiving passage to the legitimate coin way, a magnet adjacent the

entrance to the coin way located to the rear thereof and above the intermediate inclined portion of the main passage to carry a magnetic slug past the opening formed in the intermediate wall and then return it to the passage, and a detector located opposite the said opening formed in the intermediate wall to effect transference of a legitimate coin from the receiving passage to the legitimate coin passage.

2. A coin way for coin controlled mechanism, the same including adjacent passages and having an intermediate inclined portion and end vertical portions, the upper vertical portion and the intermediate inclined portion leaning and the wall separating the two passages having an opening formed therein for the transference of a legitimate coin from the receiving passage through the legitimate coin passage, separating devices in the length of the coin way for preventing slugs from passing through the opening in the intermediate wall, said device operating to remove magnetic slugs from the main passage and eventually return them to said passage, all slugs being discharged at the same point, and a deflecting ledge at the delivery end of the receiving passage to effect a lateral discharge of the slugs.

3. A coin way for coin controlled mechanism including vertical end portions and an intermediate inclined portion, the upper vertical portion and the intermediate inclined portion leaning from the vertical, said coin way including adjacent passages, the wall separating the passages having an opening formed therein for the transference of legitimate coins from the main receiving passage to the legitimate coin passage, the latter being substantially vertical and comprising an inclined and a vertical portion, the main passage having a lateral deflecting ledge above the lower delivery end of the legitimate coin passage, and slug separating devices in the length of the coin way to prevent a spurious device passing from the main receiving passage into the legitimate coin passage, some of said devices removing magnetic slugs from the main passage and subsequently returning them thereto, all of the slugs being discharged at the same point.

4. A coin way comprising a middle and side walls, forming a main receiving passage and a legitimate coin passage, the middle wall including vertical end portions and an intermediate inclined portion in which is formed an opening for the transference of a legitimate coin from the main passage to the coin passage, one of the side walls including an upper vertical portion, and an inclined portion, and the other side wall including an inclined portion and a lower vertical portion, and separating devices in the length of the coin way to prevent slugs passing from the main receiving passage into the coin passage,

some of said devices removing magnetic slugs from the main passage and subsequently returning them thereto, all slugs being discharged at the same point.

5. A coin way comprising a middle and side walls between which passages are formed, the middle wall including upper and lower vertical portions, and an intermediate inclined portion in which is formed an opening for the transference of legitimate coins from the main passage to the coin passage, the lower vertical portion of the middle wall having an inclined ledge forming a lateral deflector, and one of the side walls comprising an inclined portion and a lower vertical portion terminating in a section adapted to form a continuation of the coin passage below the deflecting portion of the middle wall, and separating devices in the length of the coin way, some of said devices removing magnetic slugs from the main passage and subsequently returning them thereto, all slugs being discharged at the same point.

6. A coin way comprising a middle and side walls enclosing a main receiving passage and a coin passage, the middle wall including vertical end portions and an intermediate inclined portion in which is formed an opening, the rear portion of which is half round and the forward end substantially vertical with its lower forward portion unobstructed, the ends of the opening being reversely beveled and the lower portion of the middle wall having a lateral deflector, one of the side walls having an upper vertical portion and an inclined portion, and the other side wall including an inclined portion and a lower vertical portion terminating in a section which forms a continuation of the coin passage, a deflector mounted upon a side wall opposite the opening formed in the middle wall, and a magnet adjacent the entrance of the main passage and disposed above the inclined passage to carry a magnetic slug past the opening formed in the inclined portion of the middle wall and return it to the passage below said opening.

In testimony whereof I affix my signature.

BENJAMIN L. FRY. [L. S.]