Oct. 6, 1942. B. C. GRUNIG 2,298,009

COIN CHUTE DEFLECTOR

Filed April 24, 1940

Fig. 1.

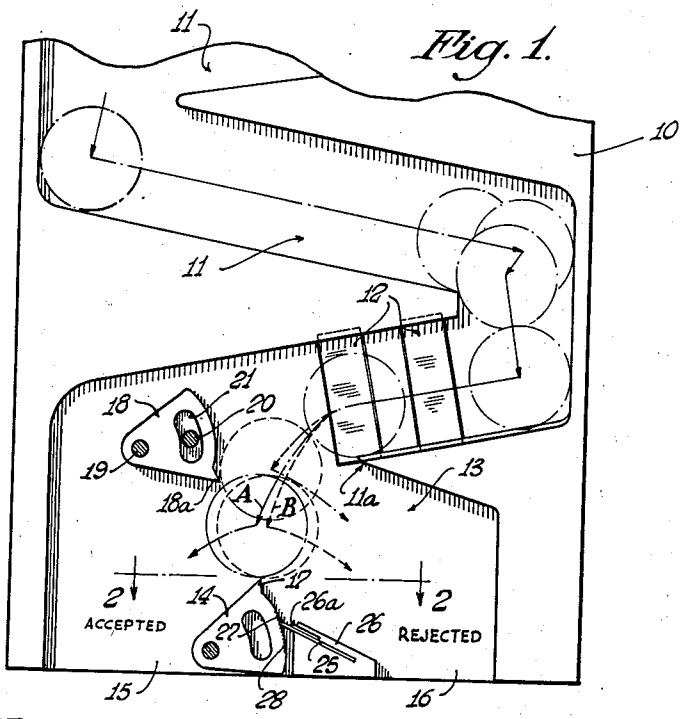
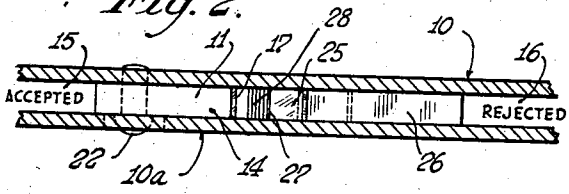


Fig. 2.



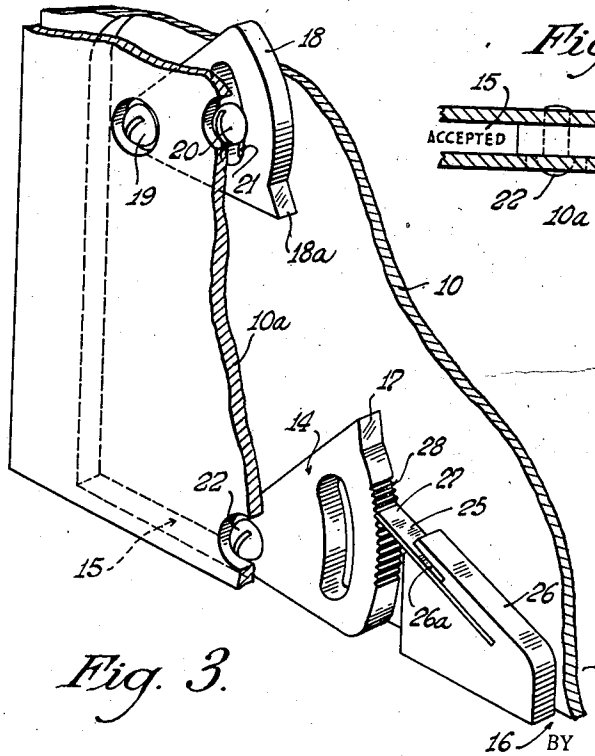


Fig. 3.

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COIN CHUTE DEFLECTOR

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4 Claims. (Cl. 194—100)

This invention relates to coin testing apparatus, particularly of the type known as a coin chute, in which the coin to be tested gravitates in a confined region relative to certain testing means for guidance toward an acceptance or a rejection opening.

An object of this invention is the provision in coin chutes having coin deflecting means against which coins are directed for guidance in different directions depending upon the angle of approach of the coin, of a means for preventing this deflecting means from working out of adjusted position due to the constant impact of coins thereon.

A further object of this invention is the provision in deflector means in coin chutes of a resilient thrust member mounted in the coin chute and adapted to engage a portion of the deflector means to absorb the impact caused by a coin striking the deflector and further adapted to be flexed out of engagement with the deflector so that the latter may be adjusted to a new and different deflecting position.

It is a still further object of this invention to provide in conjunction with a pivotally mounted coin deflector which is adapted to direct coins falling by gravity thereon to either one or the other side thereof, a plurality of arcuately disposed formations in one wall of the deflector member and a flat spring thrust member anchored in the chute with its free end disposed in one of the formations in the deflector so as to prevent pivotal movement of the deflector due to the impact of the gravitating coins falling thereon as well as to permit ready adjustment of the deflector by a flexing of the resilient thrust member.

Other objects, advantages and novel aspects of the invention reside in certain details of construction as well as the cooperative relationship of the component parts of the illustrative embodiment described hereinafter in view of the annexed drawing, in which:

Fig. 1 is a fragmentary elevation of the coin testing passage in a chute having its cover plate removed;

Fig. 2 is a fragmentary horizontal section along lines 2—2 of Fig. 1;

Fig. 3 is a fragmentary perspective to enlarged scale of the improved deflector.

A type of coin chute with which the present invention is especially suited for use is shown in Fig. 1 and includes a chute body 10 having a descending coin passage 11 formed therein and closed off by a cover plate 10a (Fig. 3), and adapted to have coins deposited in the upper reaches thereof for descent past testing means, such as a permanent magnet 12, which influences the movement of the tested coin into an enlarged terminal area 13 of the chute passage in accordance with the physical and electrical characteristics of the coin.

In the enlarged terminal area 13 of the passage there is a deflecting or segregating device 14 disposed between an acceptance passage 15 and a reject exit 16, the arrangement being such that a coin of acceptable characteristics passing through the field of the magnet 12 will follow the the trajectory indicated at A and strike the the trajectory indicated at A and strike the segregator 14, and particularly a pointed coin engaging portion 17 thereof, and be deflected toward the left into the acceptance exit 15.

A coin of unacceptable characteristics will be influenced by the testing means 12 to follow a shorter trajectory indicated by the dash-dot line B, and in consequence will strike the coin engaging point 17 at an angle which will cause the coin to be deflected toward the right into the reject exit 16.

Situated in the upper regions of the terminal area 13 opposite the lower end portion 11a of the runway is a spurious coin detector 18 similar in some respects to the deflector 14 and having a coin engaging point 18a positioned in spaced relation from the end 11a of the runway or chute passage so as to deflect spurious coin elements traveling at speeds which would carry them beyond the trajectory A back toward the rejection exit 16. The coin detector 18 is especially intended to effect rejection of cardboard, fiber and other light-weight coin elements or tokens.

The coin detector 18 is pivotally mounted on a screw 19, and is secured in positions of adjustment by a radially disposed screw 20 threaded into the chute through an arcuate slot 21 formed in the detector 18. When the detector has been moved into a suitable position of adjustment with the point 18a properly spaced from the end of the runway, the screw 20 may be turned up to clamp the detector 18 in position.

Heretofore it has been the practice to mount the coin deflecting segregator 14 in the same manner as the detector 18, that is to say, by means of screws similar to the screws 19 and 20. However, because of the repeated impact of the descending coins against the deflecting point 17, and the fact that the coin deflector or segregator 14 is pivotally mounted as by the screw

22, a turning moment is set up in the deflector 14 and, in time, notwithstanding the employment of a set screw similar to the screw 20, the deflector 14 is moved more or less out of adjusted position, and since the adjustment of the deflector 14 is relatively sensitive, a slight displacement is sufficient to render the same ineffective for its intended purpose.

To obviate the foregoing difficulties, the present invention dispenses with the employment of a screw like the set screw 20 in the coin detector 18 (which is not subjected to repeated pounding by descending coins because engaged usually only by light-weight elements), and substitutes therefore a special thrust-receiving means including an elongated thrust member 25 (Fig. 3) mounted in a block 26 at a position radially opposite the deflector 14 with an upper end portion 27 engaging in one of a plurality of radially disposed teeth 28 on a peripheral edge portion of the member 14 beneath the coin engaging point 17 thereof.

The angular relationship between the deflector 14 and the thrust receiving means 25 is such that when a coin strikes the deflecting point 17, the turning moment is absorbed and resisted by the thrust member 25.

In order not to impair the adjustability of the device 14, the thrust-receiving member 25 is preferably made of spring metal, and the mounting block 26 is provided with a cut-away portion or notch 26*a* at the point of emergence of the spring arm 25 therefrom, so that the latter may yield in an upward direction responsive to upward turning movement of the member 14 (anticlockwise), the end portion 27 of the thrust arm slipping over the teeth 28. In order to turn the deflector in the opposite direction, the exposed portion of the thrust member 25 is conveniently biased upwardly as by the use of a screwdriver or the like and held in such position until the deflector is moved into the desired position, whereupon the member 25 is released for engagement in one of the teeth 28.

It should be observed that the spring arm 25 is gauged, and the exposed portion between the end 27 and slot 26*a* is calculated so that the exposed portion will not flex in a downward direction responsive to clockwise turning efforts set up in the deflector 14 as a result of the impact of coins thereagainst.

The various advantages and objects of the invention may be accomplished by modifications of the particular embodiment specifically described herein, and it is intended that the appended claims shall include all equivalent arrangements fairly coming within their call.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a device of the class described, an adjustable coin deflector including a pivotally mounted member having a coin engaging portion disposed radially of the pivotal mounting thereof and adapted to be engaged by coins moving toward said member from a region thereabove, said member having a plurality of formations arranged arcuately of said pivotal mounting in the region below said coin engaging portion, and means for preventing movement of said member upon engagement of coins with the coin engaging portion, said means including a thrust member mounted opposite the deflecting member and having a portion projecting into engagement with one of said arcuately disposed formations.

2. In a coin chute, an adjustable coin deflector having a coin engaging point, means pivotally mounting said deflector in said chute with said point disposed to be engaged by coins moving thereagainst from the region thereabove, said deflector having a plurality of arcuately disposed teeth situated in the region beneath said point, and an elongated thrust receiving member mounted opposite said teeth and projecting for engagement with said teeth at a position above the level of the pivotal mounting of said deflector and beneath said coin engaging point.

3. In a coin chute, a deflecting means comprising a pivotally mounted deflector body having a coin engaging portion disposed eccentrically of its pivotal mounting so as to be struck by a coin in its passage through the coin chute, the resulting impact tending to turn the deflector body in a certain direction, said body having a plurality of arcuately disposed teeth on one peripheral edge thereof in the region beneath said coin engaging portion, resilient thrust means mounted opposite the deflector body and having a portion thereof engaging in one of said arcuately disposed teeth whereby to prevent turning movement in said certain direction when coins strike said deflector body and to permit manual turning movement in an opposite direction.

4. In a coin chute, a pivoted coin deflector having a coin engaging portion disposed eccentrically of the pivotal mounting of the deflector and adapted to be struck by a coin passing through the coin chute and resilient thrust means mounted in said coin chute with a portion thereof engaging said deflector eccentrically of said pivotal mounting to prevent turning movement of the deflector in the direction of engagement of coins when the deflector is struck by a coin as aforesaid and to permit manual movement of the deflector in the opposite direction.

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