

Dec. 18, 1934.

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1,984,460

COIN CHUTE

Filed Feb. 7, 1934

FIG. 1

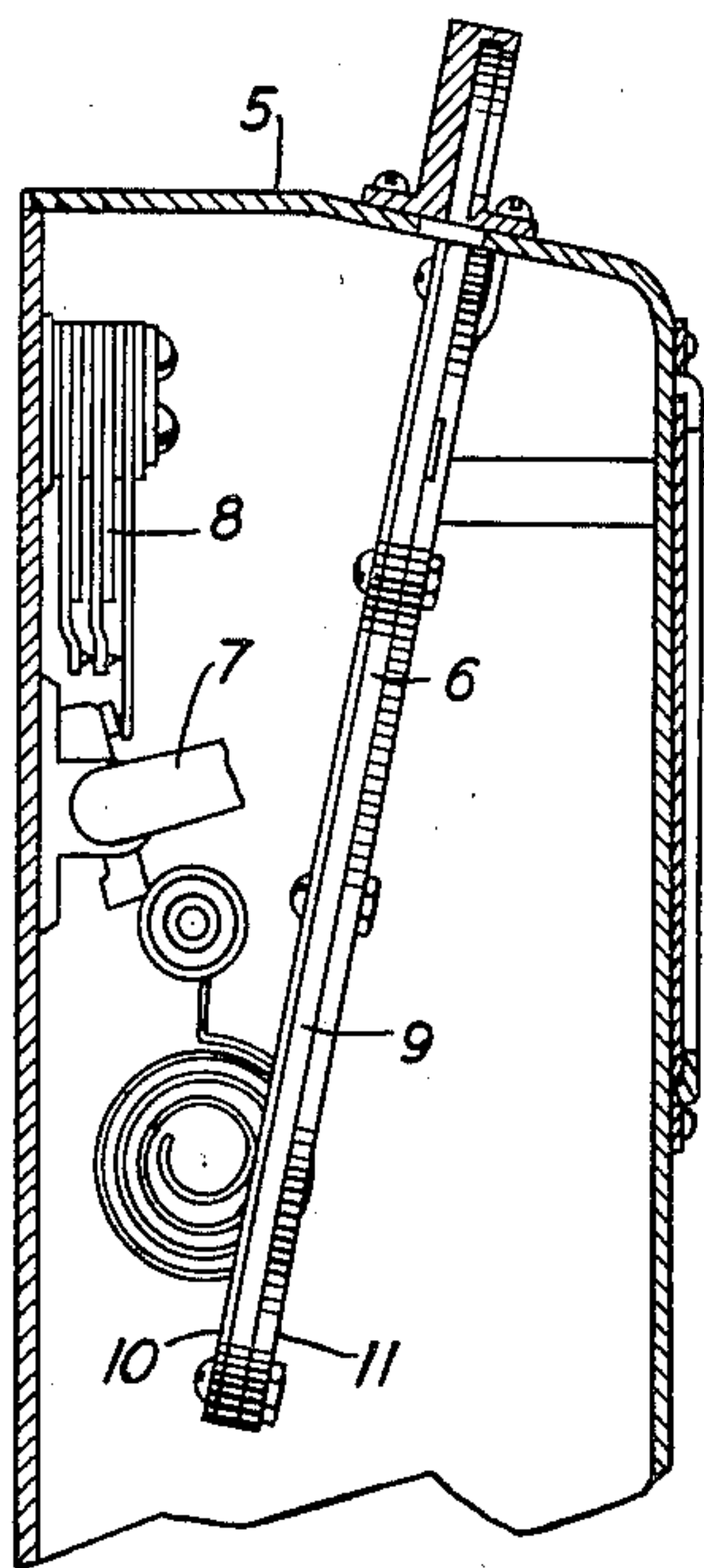


FIG. 2

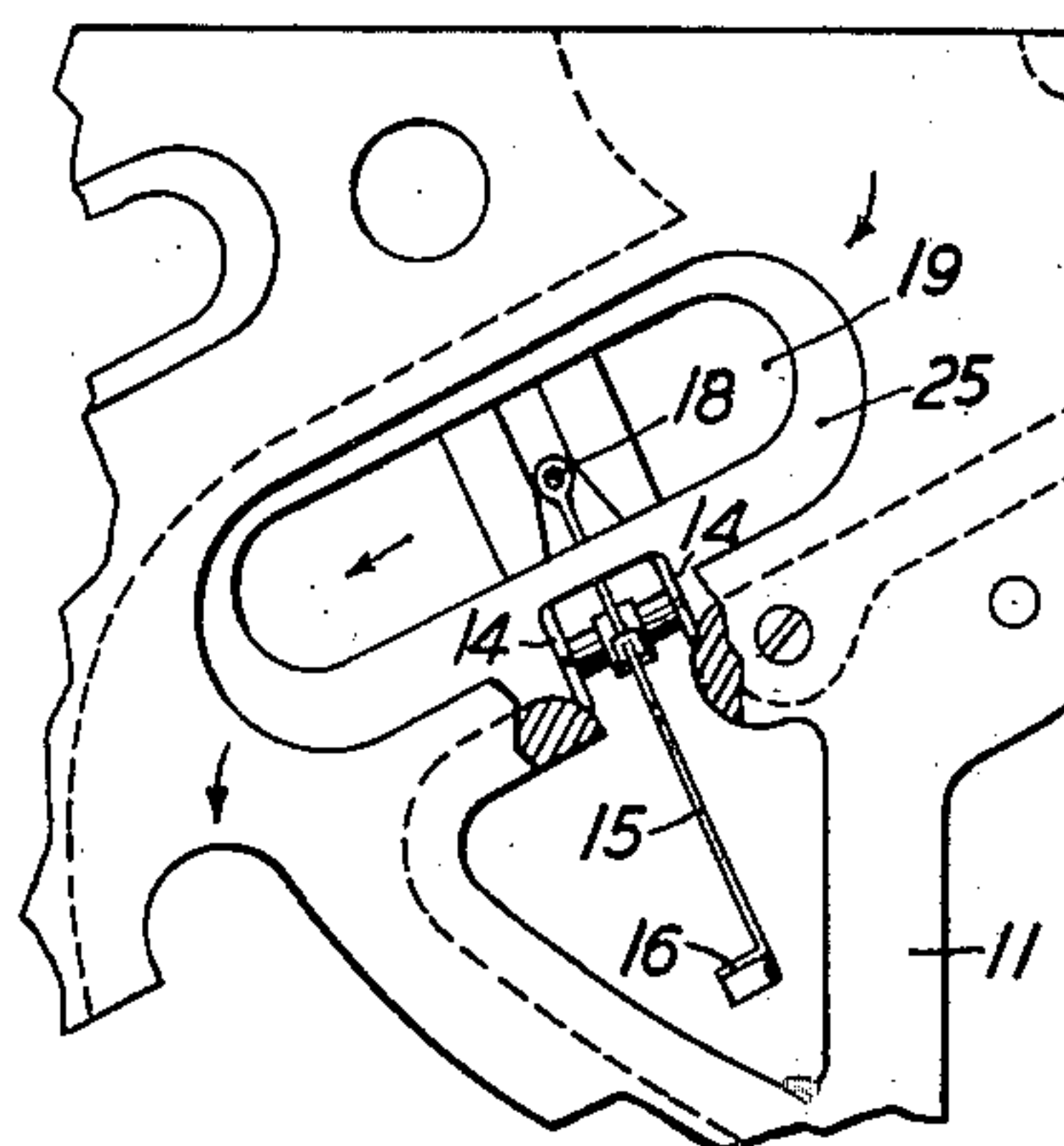


FIG. 3

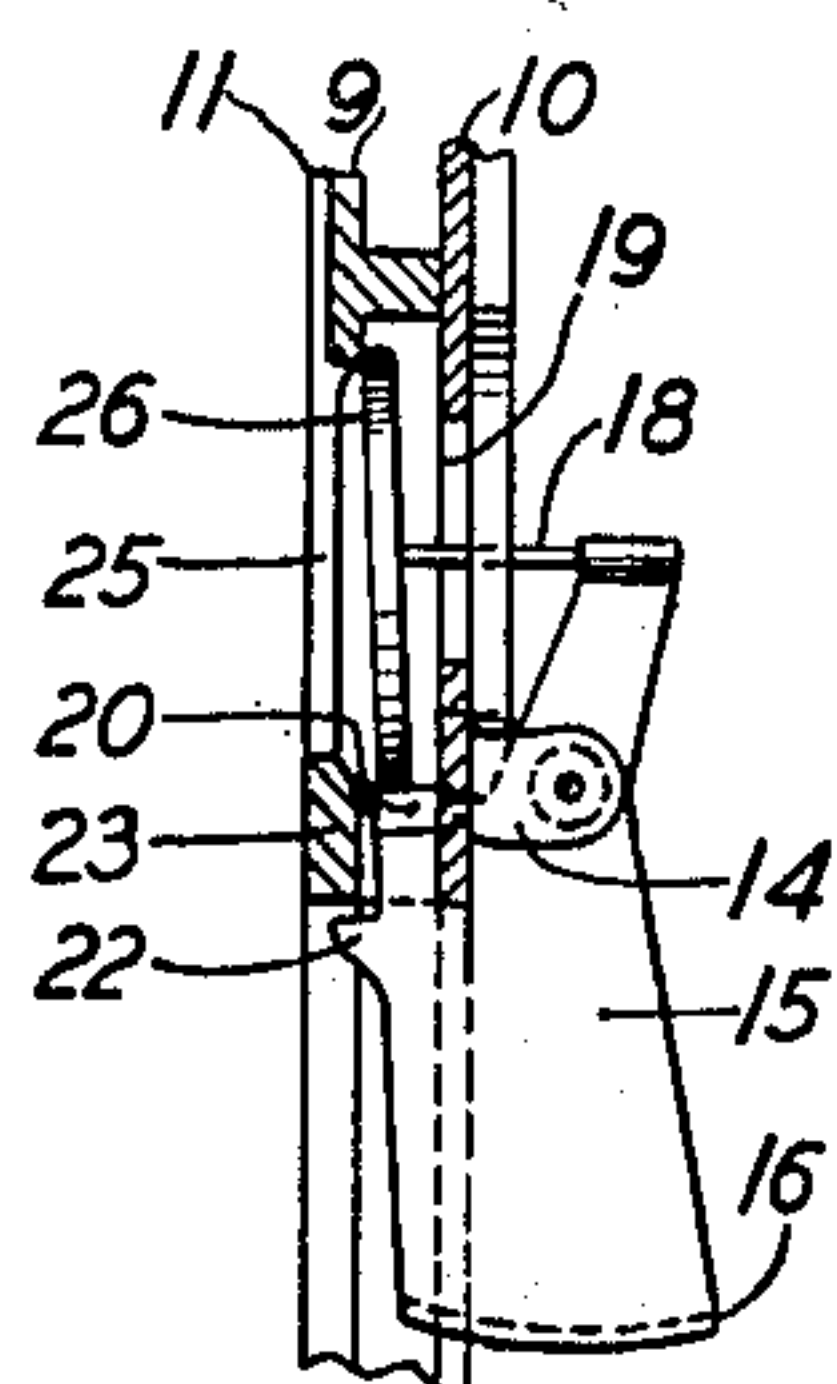
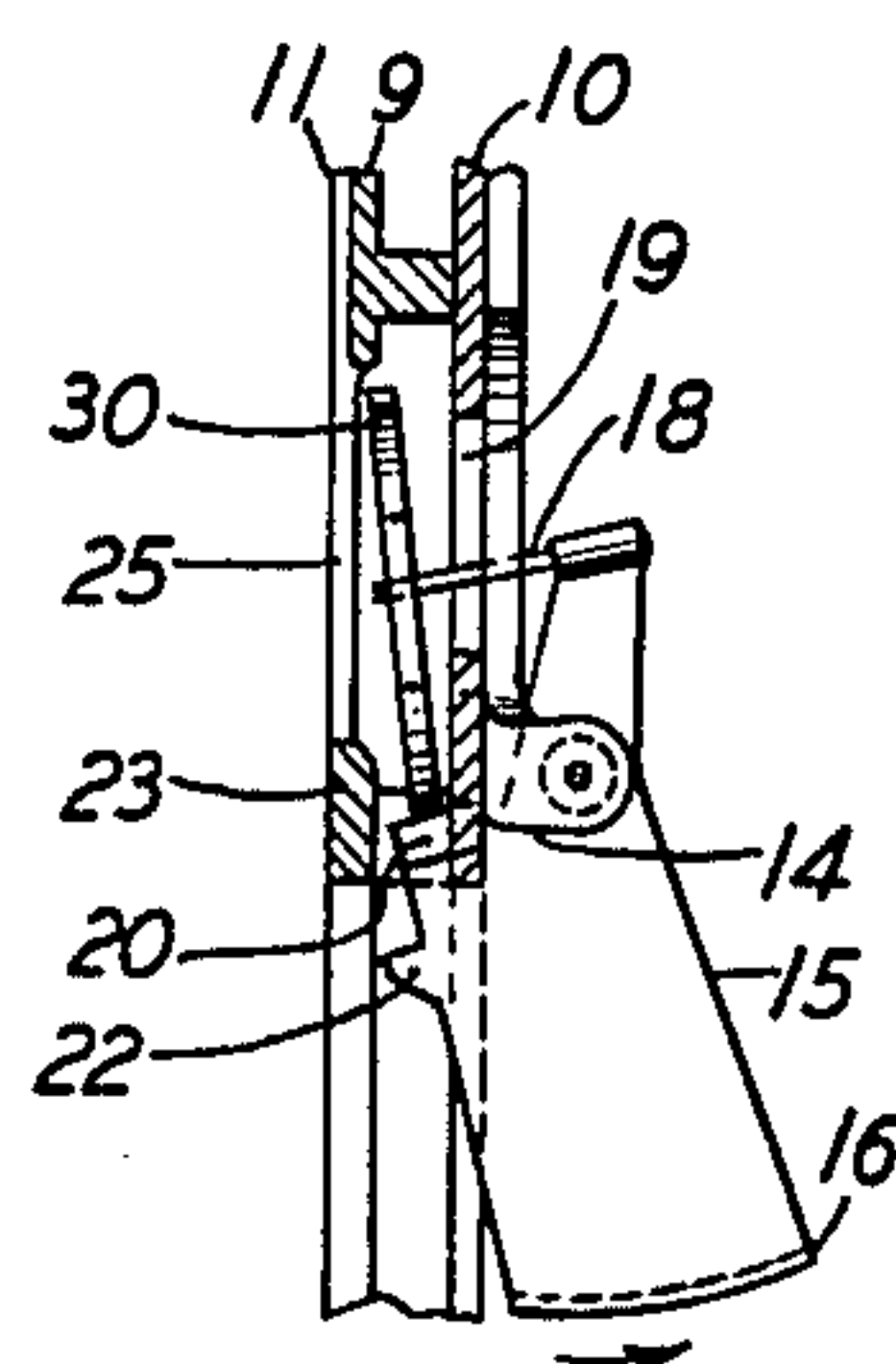


FIG. 4



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1,984,460

COIN CHUTE

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Application February 7, 1934, Serial No. 710,162

7 Claims. (Cl. 194—97)

This invention relates to coin chutes and particularly to coin chutes for use with coin operated devices.

An object of the invention is to provide a coin chute with means for rejecting washers and like slugs the same diameter as legitimate coins.

Another object is to provide improved means for rejecting undersize coins.

In accordance with one feature of the invention there is provided in a laterally and longitudinally inclined coin chute through which the coin rolls edgewise an opening in the lower side wall of the channel of such dimensions as would permit under normal conditions a legitimate coin or washer of equal diameter to leave the chute under the action of gravity. Associated with this opening is a rotatable lever having arms which engage the face and edge of a coin to raise it and prevent it leaving the chute. A washer, however, is not raised but is permitted to fall out of the chute because one of the arms enters the hole in the washer which allows the other arm to be depressed.

In accordance with another feature of the invention the rotatable lever positively ejects undersize solid coins and slugs which are not restrained by the upper edge of the reject opening and are therefore forced out of the chute by a movement of the lever. This prevents the manipulation of small diameter coins and slugs as by spinning in order to obtain goods or service from coin operated devices.

In the drawing illustrating this invention, Figure 1 is a sectional view of a conventional coin collector box used for telephone pay stations;

Fig. 2 is a fragmentary detail view of a portion of the coin chute structure with lever mechanism of this invention applied thereto;

Fig. 3 is a sectional view of the coin chute and lever mechanism showing the position of the parts with a legitimate coin passing therethrough; and

Fig. 4 is a similar view illustrating the operation in rejecting a washer.

In Fig. 1, 5 designates the conventional coin box casing, 6 represents generally the coin chutes, 7 a switch-hook lever and 8 a conventional spring pile-up controlled by the switchhook lever 7 for completing necessary circuit connections. The coin chute which is of standard and well known form is constructed of a central cored portion 9 to the opposite sides of which are secured formed plates 10 and 11 which together with the cored portion 9 form the runways for the coins of different denominations.

For simplicity of illustration and description the

invention is illustrated only in connection with one runway, namely, that for the five-cent piece but it is obvious that it is equally applicable to any or all of the chutes of any box of the type illustrated.

As shown more clearly in Figs. 3 and 4, there is pivotally supported by ears or lugs 14 upon the side member 10 of the coin chute, a lever 15 the lower end of which is weighted as at 16 so that the lever will normally be swung by gravity into the position shown in Fig. 3. Carried by the upper end of the lever 15 is a projecting pin or rod 18 which is adapted to swing through an opening 19 in the adjacent wall of the chute. Just below its pivotal axis the lever 15 is provided with a flattened projection 20 which is movable across the lower margin of the coin chute to complete or interrupt the continuity of the lower margin of the chute. A projecting lug or ear 22 on the margin of the lever 15 engages a section 23 of the side 11 of the chute opposite to that upon which it is supported to limit the swing of the lever in that direction. In the wall or side 11 of the chute there is provided an opening 25 of sufficient size to permit a coin for which the chute is designed to drop through unless it is restrained by engagement with flattened projection 20 on the lever 15 when in its normal position. In this case the upper part of a coin 26 will be raised above the upper edge of the opening 25 during its passage through the chute and past the opening 25. The lever 15 is restrained from complete swinging movement during the passage of the legal coin 26 due to the engagement with the coin of the inner end of the rod 18 which is brought into engagement therewith by a slight swinging movement of the lever 15 resulting from the weight of the coin 26 striking the flattened portion or projection 20 of the lever.

In case the token dropped into the chute is an ordinary machine washer 30 as shown, for example, in Fig. 4 its weight upon the member 20 will cause the lever 15 to swing outwardly and since there is no surface on the washer for the inner end of the rod 18 to engage, the lever 15 will be swung outwardly far enough to drop the upper margin of the washer below the margin of the opening 25, thereby causing the washer 30 to tilt outwardly through the opening 20 without operating the normal mechanism of the coin box.

An undersized coin or one of too small diameter to engage the upper edge of the opening 25 will be rejected also.

What is claimed is:

1. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper side wall, a laterally inclined lower side wall, a longitudinally inclined bottom, said lower side wall having a perforation therein the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer.

2. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper side wall, a laterally inclined lower side wall, a longitudinally inclined bottom, said lower side wall having a perforation therein the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer, said means comprising a lever having two arms both of which simultaneously engage a coin.

3. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper perforated side wall, a laterally inclined lower side wall, a perforated longitudinally inclined bottom, said lower side wall having a perforation therein the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer, said means comprising a lever having two arms one projecting through the opening in the upper side wall and the other projecting through the opening in the bottom.

4. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper perforated side wall, a laterally inclined lower side wall, a perforated longitudinally inclined bottom, said lower side wall having a perforation therein the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer, said means comprising a lever pivotally supported on the upper side of said channel and having two arms, one of which registers with the opening in the upper side wall and a lower arm projecting through the bottom the distance between said lower arm and the upper edge of the opening in said lower side

being normally less than the diameter of a legitimate coin and the distance between said arms being approximately the radius of a legitimate coin.

5. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper side wall, a laterally inclined lower side wall, a longitudinally inclined bottom, said lower side wall having a perforation therein, the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer, said means comprising a lever pivotally supported on the upper side wall and rotatable in a plane normal to the direction of travel of a coin, said lever having two arms for simultaneously engaging a coin to prevent its escape from said channel, and a weighted arm to normally maintain one of said arms in the path of the coin and the other out of the path.

6. A coin chute comprising a laterally and longitudinally inclined channel in which a coin rolls on its edge, said channel having an upper perforated side wall, a laterally inclined lower side wall, a perforated longitudinally inclined bottom, said lower side wall having a perforation therein, the distance between the upper edge of which and said bottom is greater than the diameter of a legitimate coin whereby a legitimate coin and a washer of the same diameter would normally leave the chute, and rotatable means for raising the coin edgewise above the upper edge of the opening in said lower side without affecting the normal course of a washer, said means comprising a lever, pivot means supporting said lever, the axis of said pivot means being substantially parallel to the bottom of said channel, a plurality of arms integral with said lever, one of said arms engaging the periphery of a washer to rotate said lever, the other arm entering the perforation in said washer, whereby said washer is permitted to escape through the opening in the lower side of said channel, and means for returning said arm to its normal position.

7. A coin chute having a laterally and a longitudinally inclined channel, said channel having a perforated bottom, a perforated upper side wall and a perforated lower side wall having upper and lower coin guiding edges, the distance between said bottom and said upper edge being greater than the diameter of a legitimate coin, a rotatable washer ejector having a lower arm and an upper arm pivotally mounted on said upper side wall, said lower arm projecting above the bottom of said channel, the distance between said lower arm and said upper edge normally being less than the diameter of a legitimate coin, said upper arm extending transversely of said channel into the aperture in the upper side wall whereby legitimate coins engaging said lever are raised past said reject opening.

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