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2,014,505

COIN CHUTE

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FIG. 1

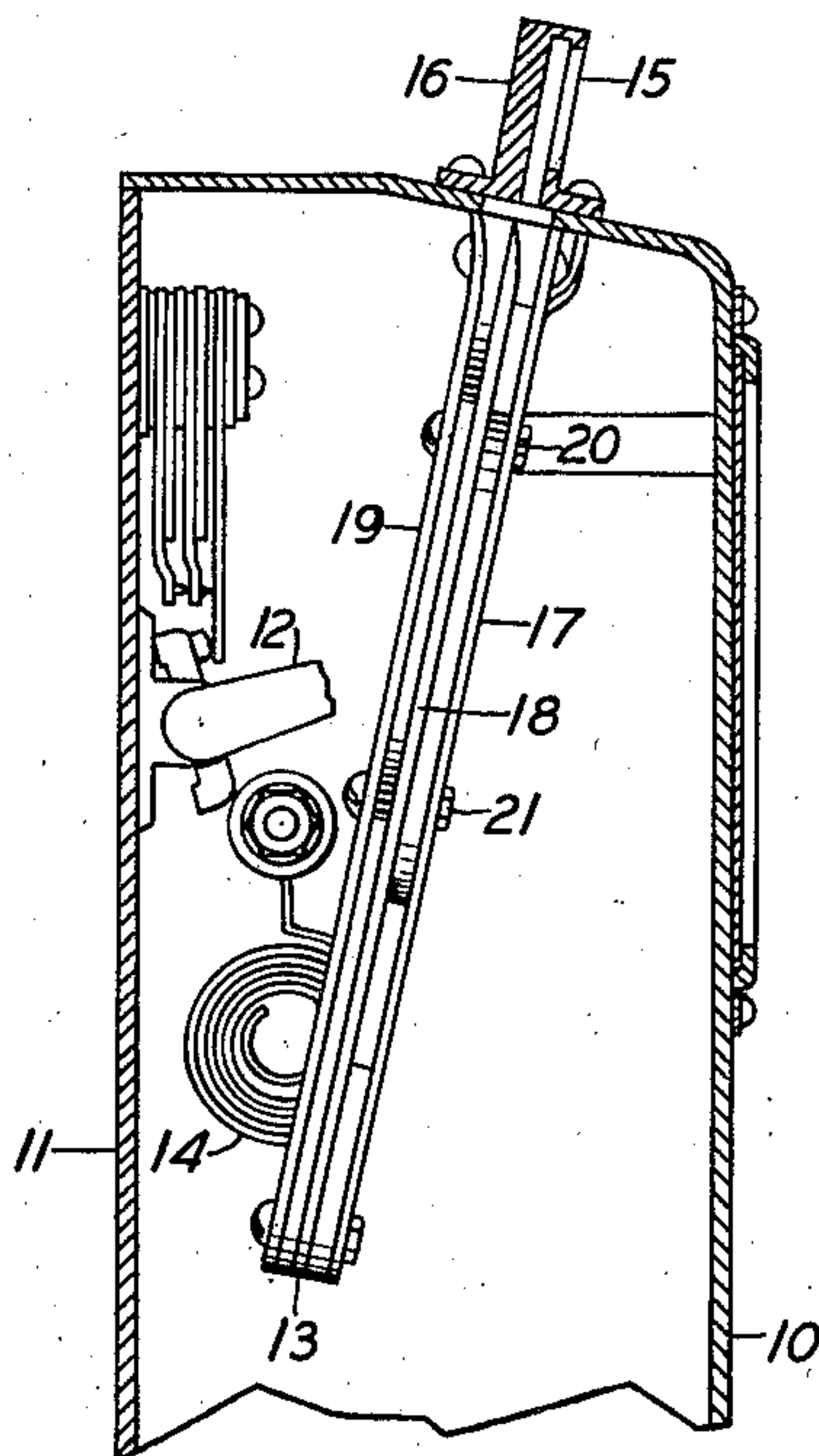


FIG. 2

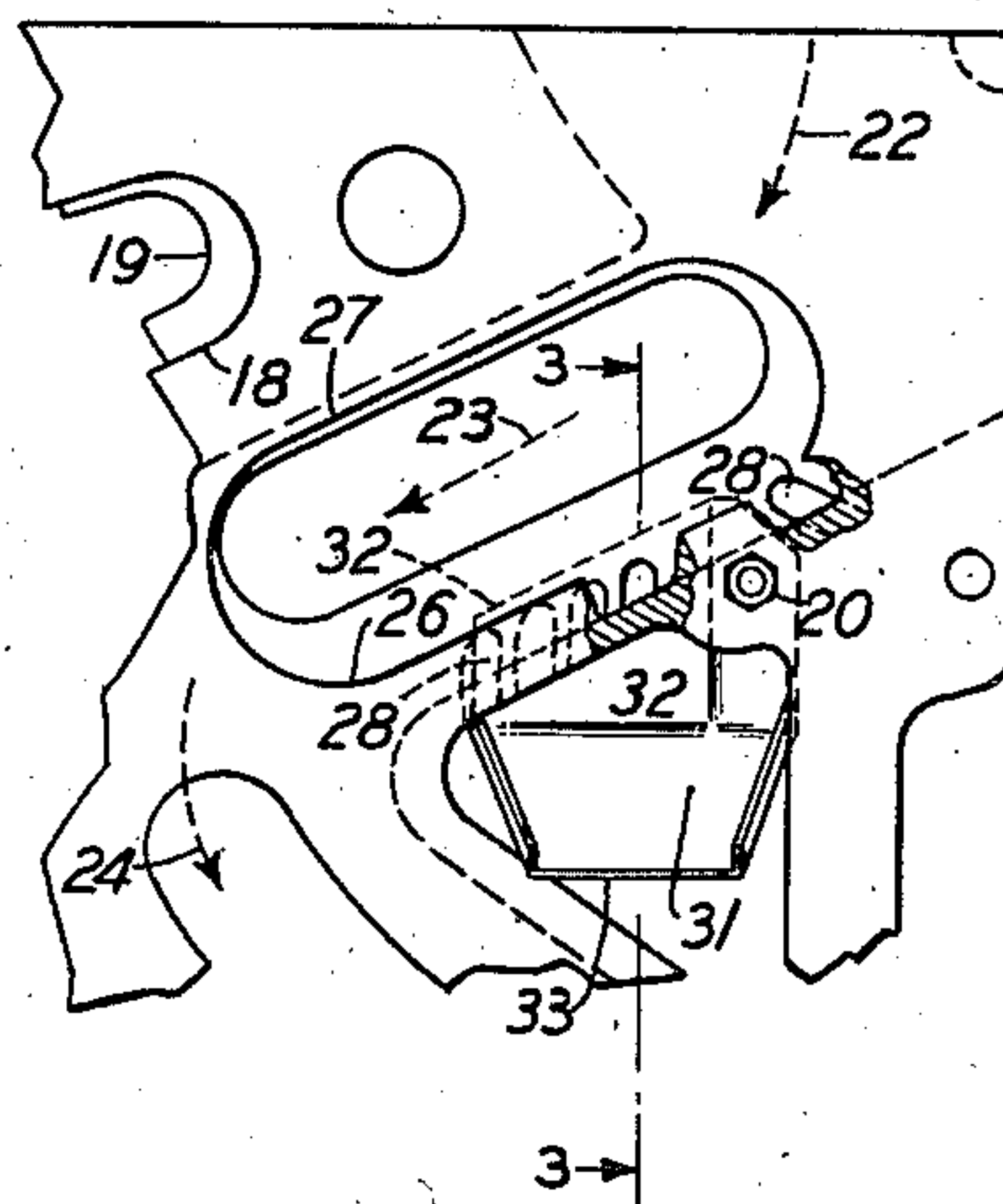
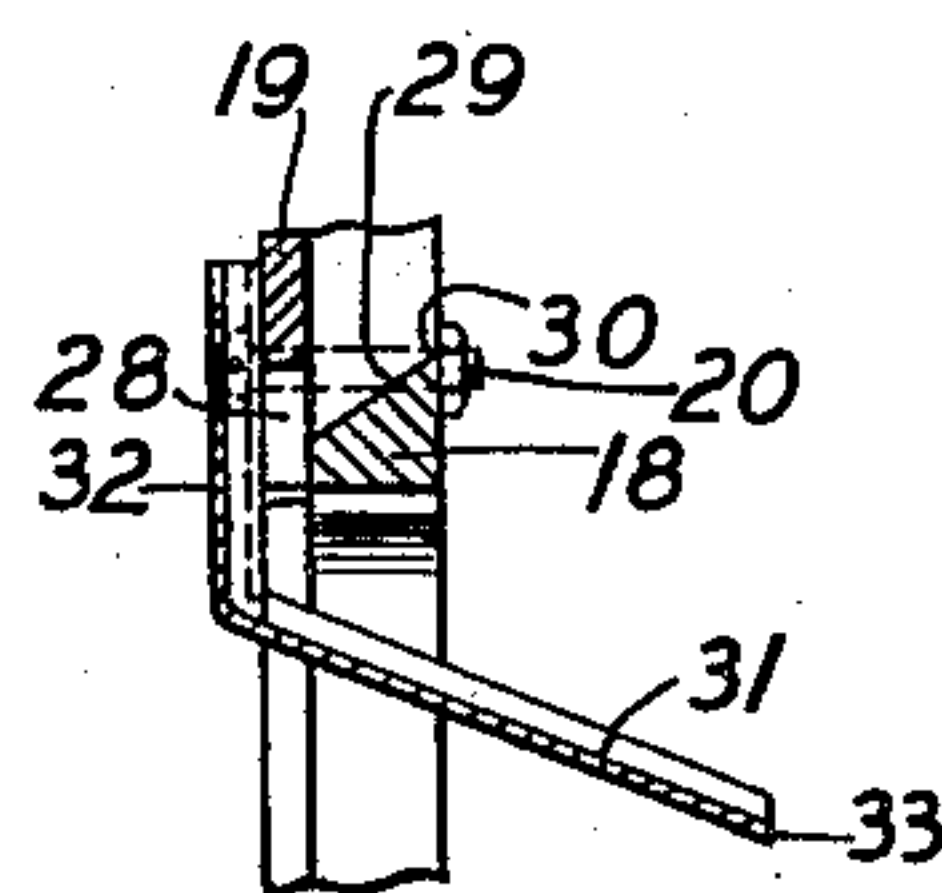


FIG. 3



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COIN CHUTE

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2 Claims. (Cl. 194—97)

This invention relates to coin chutes for use in coin operated devices and particularly to coin chutes embodying means to prevent the fraudulent operation of such device.

An object of the invention is to provide a coin chute with improved means for rejecting under-diameter coins and thereby prevent their use for fraudulently obtaining service from coin collectors or other coin-operated devices.

In accordance with the invention, one side of the coin chute is provided with the usual reject opening for under-diameter coins and the bottom is sloped transversely downward from the opening toward the opposite wall where a series of holes are provided along the lower edge so as to permit the escape of salt or other comminuted material that may have been poured in the chute to raise the level of under-diameter coins and thus render the reject area inoperative to reject them. Such a coin chute is particularly adapted for that type of telephone pay station wherein the calling party tentatively deposits a coin or coins as indicated by the central office operator who subsequently in the ordinary course of events makes the proper distribution thereof, that is, either refunds or deposits the coins. Such a coin collecting device is usually arranged so that the deposit of a coin by a subscriber is automatically signaled to the central office operator, each coin transmitting a signal of characteristic significance. Occasionally, however, fraudulent attempts are made by the introduction of powdered material into the chute to cause an under-diameter coin or slug to give the same characteristic signal to the operator as the proper coin. The present invention as above described renders such fraudulent attempts ineffective.

Referring to the drawing:

Fig. 1 is a fragmentary side view of a coin collector housing including a coin chute;

Fig. 2 is a view showing how the coin chute of Fig. 1 may be modified to incorporate the present invention; and

Fig. 3 is a sectional view of Fig. 2 taken along the line 3—3.

The invention for convenience will be described in connection with a coin chute of the general type disclosed, for example, in the U. S. patent to O. F. Forsberg 1,043,219, issued November 5, 1912, to which reference is made for a disclosure of the complete coin chute and the apparatus associated therewith at a telephone pay station.

The portion of the usual telephone coin collecting apparatus disclosed in Fig. 1 is a side elevation of the upper part of the coin collector housing 10 with the side wall of the housing re-

moved. The coin collector has a back plate 11 upon which are mounted the usual telephone receiver hook 12 and other parts of the telephone and signaling apparatus. The housing carries the forwardly inclined coin runways or passages indicated generally by character 13, and one of the coin signaling devices is shown at 14. The other ends of the several coin runways project through the top of the housing 10 and terminate in openings such as opening 15 in plate 16. Usually and as shown in the Forsberg patent there are three openings in plate 16, one for twenty-five cent pieces, one for dimes and one for five-cent pieces. In the view shown in Fig. 1 the opening 15 is the one for twenty-five cent pieces. Thus a twenty-five cent piece deposited in opening 15 would drop into a runway defined by front plate 17 and intermediate plate 18 of the chute assembly. The openings in plate 16 for dimes and for five-cent pieces are aligned so that such coins drop into individual runways between back plate 19 and intermediate plate 18. Thus a five-cent piece deposited in the proper opening in plate 16 would pass between plates 18 and 19 by a devious path and after striking a bell (not shown) would pass into the lower part of the housing (not shown) for subsequent collection or refund. The three plates which with their flanges define the coin runways are suitably bolted together as at points 20, 21.

Such coin runways are usually constructed with openings of the proper dimensions in the side walls in a longitudinally inclined section so that slugs, tokens, etc., which are not of the proper dimensions will not be permitted to strike the coin signaling device but will fall out of the runways through such openings due to the laterally inclined side walls as shown in Fig. 1. The manner in which this invention may be embodied in a coin chute such as in Fig. 1 is shown in Fig. 2 where the invention is applied to the five-cent piece runway adjacent the opening provided in the runway for rejecting under-diameter coins.

As shown in Fig. 2 the runway for a five-cent piece after deposit in the proper opening in plate 16 comprises between plates 18 and 19 a vertical section indicated by dotted arrow 22, then the longitudinally inclined section indicated by dotted arrow 23 and then a reversely inclined section indicated by the dotted arrow 24, the rest of the runway being omitted since it is not concerned with this invention. The longitudinally inclined section 23 has the usual reject opening 26 in plate 18 for under-diameter coins and slugs. This rejection is due to the fact that the distance between the upper edge 27 of opening 26 and the bot-

tom of the runway is only slightly less than the diameter of the five-cent piece and hence a smaller size coin will readily fall out through opening 26 due to the laterally inclined position of the runway as shown in Fig. 1. Plate 17 is properly omitted from Fig. 2 since as shown in the Forsberg patent the plate 17 does not extend over that part of the five-cent piece runway shown in Fig. 2.

As previously stated, attempts have occasionally been made to avoid this under-diameter reject feature by introducing powdered material such as salt into the chute to effectively raise by this powdered material the bottom of the runway in inclined section 23 thereby decreasing the distance between the bottom of the runway and the upper edge 27 of the reject opening so that an under-diameter coin will project above the edge 27 and hence be held in the runway.

In accordance with the preferred form of this invention such fraudulent attempts are nullified by having the bottom of the runway in inclined section 23 defined by a slope extending transversely downward from the lower edge of opening 26 to the back side wall 19, said wall 19 having a series of holes 28 extending upwardly from the bottom of the slot for a substantial distance. In the sectional view of Fig. 3 this sloping surface of the bottom of the runway is shown at 29 extending from the lower edge 30 of the reject opening 26 down to the side wall 19 containing holes 28. One of these holes 28 is to the right of bolt 20 and directly below the vertical section 22. It will be apparent that any powdered material dropped into the vertical section 22 will pass out of the runway through one or more of the holes 28 so that the introduction of such material will be of no avail in attempting to get an under-diameter coin past the reject opening 26. It also should be noted that the presence of a hole 28 directly beneath vertical section 22 insures there will be no clogging of the runway at the point where the coin path curves from section 22 to section 23. The sloping or V-shaped bottom of the runway section 23 is particularly effective in connection with the perforated side plate 19 since the coins will travel as far down slope 29 towards plate 19 as their thickness will permit, so that the coins themselves will aid in expelling the powdered material. The angular slope 23 with respect to the horizontal should, therefore, be substantial to cause the powdered material to gravitate towards wall 19 with its perforations. That is, the angle of the bottom slope 29 with respect to a line at right angles to the inclined wall 19 should be substantially greater than the angle of side wall 19 with respect to the vertical, or expressed in other words, the bottom 29 is inclined laterally from the horizontal in a direction opposite to the direction wall 19 is inclined from the vertical. It is to be understood however that this invention is not limited to a runway having a transversely sloping bottom.

It is obvious that the openings 28 in side wall 19 may be spaced and shaped as may be desired for the elimination of any powdered material from the runway. It should be noted that by locating the openings 28 in a side wall of the runway there

is no danger that the presence of these openings will interfere with or retard the progress of a proper coin down the runway.

In many instances, there would be objections to having the powdered material merely pass out through openings 28 down into the coin chute housing because such powdered material in falling out of openings 28 would strike the coin runways below section 23, due to their lateral inclination as shown in Fig. 1, and might interfere with the passage of the coins in such lower sections or with the operation of the coin relay. Accordingly, this invention provides a chute 31 which serves to catch the material passing through holes 28 and convey the material through an opening in plates 18 and 19 below section 23, the chute projecting a substantial distance from plate 18 so that when the powdered material drops off the end 33 of the chute it will fall freely to the bottom of housing 10 without striking coin runway plates 17, 18 or 19, the coin relay or other operating parts of the collector. The form of chute 31 may have various designs for serving this purpose. The chute may have a back wall 32 substantially parallel to and spaced away from plate 19 and the entire chute should have side walls of sufficient size to properly guide the powdered material to the edge 33. The chute 31 may be suitably supported by bolt 20 in any desired manner.

This invention is not limited in its use to the particular type of coin runway disclosed but may be usefully employed in coin runways of widely varying types. It is also to be understood that coin runways for tokens or coins other than five-cent pieces may be advantageously modified in accordance with this invention.

What is claimed is:

1. A telephone coin collector comprising a coin channel having a substantially vertical section followed by a longitudinally inclined section in which a coin rolls on its edge, said longitudinally inclined section having substantially parallel upper and lower side walls inclined laterally and having a bottom inclined laterally from the horizontal in a direction opposite to the direction in which said side walls are inclined from the vertical, said bottom in said inclined section being imperforate to provide a continuous support for a coin traveling down said inclined section, said lower side wall having an elongated opening therein for rejecting under-diameter coins, said upper side wall having a plurality of openings opposite said reject opening and adjacent the lower edge of said bottom through which comminuted material may escape.

2. A telephone coin collector coin channel in accordance with claim 1 in which a chute is provided for receiving comminuted material ejected through said plurality of openings, said chute extending transversely of said walls through an aperture in said walls, the discharge outlet of said chute being sufficiently far in front of said upper side wall that material discharged from said chute will fall free of the portion of said coin channel below said inclined section.

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