

Nov. 5, 1940.

J. M. MELICK

2,220,168

COIN COLLECTION APPARATUS

Filed April 18, 1939

FIG. 1

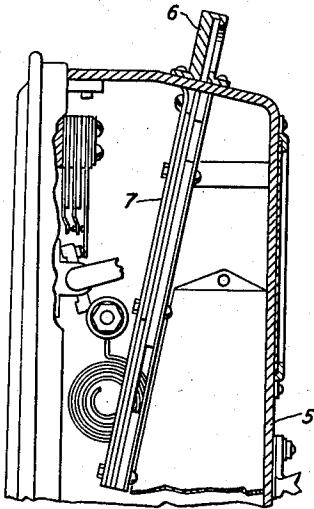


FIG. 2

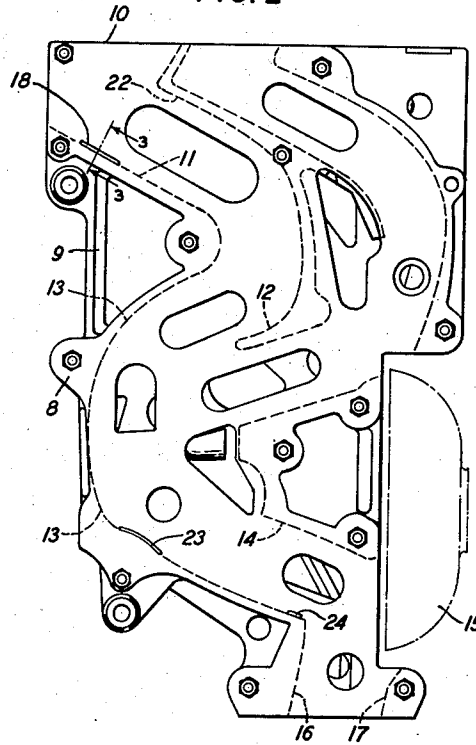


FIG. 3

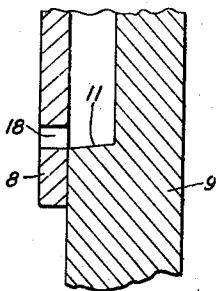


FIG. 4

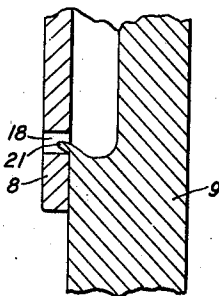
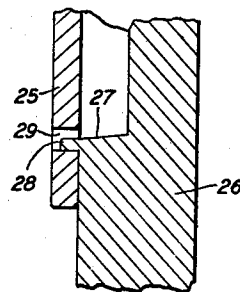


FIG. 5



INVENTOR
BY J. M. MELICK

T. H. Jackson

ATTORNEY

UNITED STATES PATENT OFFICE

2,220,168

COIN COLLECTION APPARATUS

John M. Melick, Cresskill, N. J., assignor to Bell Telephone Laboratories, Incorporated, New York, N. Y., a corporation of New York

Application April 18, 1939, Serial No. 268,478

2 Claims. (Cl. 194—1)

This invention relates to coin collection apparatus in which a coin or token is deposited for the use of an instrument or for the purpose of receiving services or supplies from a vending device.

More particularly the invention relates to telephone apparatus such as described in U. S. patent to O. F. Forsberg 1,043,219, issued November 5, 1912, where it is required that one or more coins be deposited for the use of the instrument. Such apparatus usually includes a coin chute containing coin channels down which a deposited coin travels to strike a suitable signaling device before being collected or refunded. A preferred way of providing such a chute is to cast out of soft metal a plate having spaced parallel ridges or guide rails defining the desired coin channel and then complete the coin channel by mounting on the channeled plate a flat cover plate. The chute is usually mounted in a substantially vertical plane to receive coins deposited in a coin gauge mounted external to the collector.

However, the coin battering to which such a chute is subjected tends to distort the coin runway and eventually makes it necessary to remove the chute from service to avoid the danger that the battered metal will block the coin passage or otherwise render the chute inoperative.

In accordance with this invention it is proposed to prolong the useful life of such a coin chute by providing slots in the cover plate adjacent the point subjected to distortion so that the battered metal may extrude through these slots instead of piling up against the cover plate or remaining in the chute to retard or block the passage of coins.

As shown in the Forsberg patent a coin deposited in the coin gauge drops substantially vertically for an appreciable distance before striking the bottom wall of a longitudinally inclined channel and the portion of this bottom wall receiving the falling coins becomes gradually distorted with use. By providing a slot in the cover plate opposite the coin receiving surface of this battered area it has been found that the battered metal extrudes through the slot instead of piling up in the coin passage, and by such a construction it has been found possible to double or treble the useful life of the chute.

Referring to the drawing:

Fig. 1 represents the upper portion of a telephone coin collector embodying a coin chute of this invention;

Fig. 2 is a plan view of a coin chute having a cover plate constructed in accordance with this invention;

Fig. 3 is a sectional view of the coin channel along the line 3—3 of Fig. 2 in its original condition;

Fig. 4 is a sectional view similar to Fig. 3 after coin battering has taken place; and

Fig. 5 is a modification of the invention.

Fig. 1 is a side view partly in section of the upper part of a telephone coin collector of the type disclosed in the above-mentioned Forsberg patent to which reference may be made for a more complete disclosure. Mounted on top of upper housing 5 is a coin gauge 6 containing apertures for receiving coins of various denominations and a coin deposited in gauge 6 drops into a tortuous coin channel in chute 7 whereby the coin is guided to strike a signaling device after which the coin drops into a suitable coin hopper where it remains for subsequent collection or refund.

The type of coin chute shown in Fig. 2 is quite similar to that disclosed in C. H. Wheeler U. S. Patent 1,717,079, issued June 11, 1929, except for a modification in the cover plate hereinafter described. Fig. 2 is a rear view of the chute assembly with the flat cover plate 8 in place over the channeled plate 9 on the rear face of which are formed guide rails defining a nickel runway and a dime runway. A nickel deposited in coin gauge 6 enters the nickel channel between plates 8 and 9 at the point 10 and drops upon the longitudinally inclined guide rail 11 of plate 9. Thereafter the coin strikes the opposite retaining wall 12 and is then guided by retaining wall 13 and retaining wall 14 to strike bell 15 after which the nickel passes out of the chute between walls 16 and 17.

The portion of rail 11 which is subjected to the greatest battering by deposited coins is that opposite slot 18 in cover plate 8. As indicated in Fig. 2 slot 18 is longitudinally inclined and is substantially parallel to the coin supporting surface of track 11, while in a direction at right angles to surface 11 the slot extends above the normal coin supporting surface for an appreciable distance as shown in Fig. 3. Hence the coin battered metal from wall 11 is free to extrude into and through slot 18 as shown in Fig. 4 where the coin receiving surface due to coin battering has been distorted with the result that some of the metal 21 from rail 11 has been forced into slot 18.

In the absence of slot 18 the displaced metal in the case of a soft metal cover plate would tend to force the cover plate 8 away from the channeled plate 9 creating a gap into which a thin coin or slug might become wedged; or in the case

of a rigid cover plate of sheet steel, for example, the displaced metal would merely pile up in the runway decreasing the distance between bottom wall 11 and top wall 22 eventually leading to the blocking of the coin passage. Either of the above tendencies is overcome by providing the described slot 18 whereby coin battering merely results in a lowering of the coin supporting surface, which lowering, however, will not prevent the chute from functioning in the desired manner.

Another point in the nickel runway which is liable to similar distortion is in that portion of wall 13 opposite slot 23 on which portion the coins may drop with considerable force. Slot 23 in cover plate 8 functions in the same manner as slot 18 to provide an opening into which the battered metal may go without detriment to the operation of the coin chute. Still a third point in the nickel runway subject to coin battering is that portion of the guide rail near the junction of walls 13 and 16 and opposite the slot 24 in cover plate 8. Slot 24 functions in the same manner as slots 18 and 23.

In the preferred embodiment the cover plate 8 is made of sheet steel sufficiently rigid to prevent any separation of plates 8 and 9 under the action of the metal displaced by the coin battering; and channeled plate 9 is preferably die cast from a soft metal such as a suitable lead alloy.

It is obvious that similar slots may be provided in plates forming a part of runways for coins of other denominations such as dimes or quarters to provide an outlet for any metal displaced under the action of deposited coins.

A modification of the invention is disclosed in Fig. 5 and it may be assumed that Fig. 5 is also a sectional view taken along the line 3—3 of Fig. 2. In Fig. 5, cover plate 25 corresponds to cover plate 8 and channeled plate 26 corresponds to

plate 9 with the coin supporting rail 27 corresponding to rail 11. The only difference between Fig. 3 and Fig. 5 is that channeled plate 26 is originally formed with a ledge 28 projecting into slot 29, but slot 29 will function in the same manner as slot 18 of Fig. 3 in that under the action of coin battering, some of the metal from rail 27 will be forced into the slot, thereby forcing ledge 28 farther out through the slot.

What is claimed is:

1. A coin chute comprising a coin channel plate and a cover plate fastened to said channel plate, said channel plate having spaced guide rails extending towards the inner face of said cover plate to define a coin runway between said plates down which a coin will roll or fall under the influence of gravity, said guide rails being formed of relatively soft metal, one section of one of said rails having a coin receiving face which is battered by the relatively hard coins with sufficient force to finally distort said face and the guide rail of which said face is a part, said cover plate having a slot opposite said face and extending along said face in the direction of coin travel, the upper edge of said slot being located a substantial distance above said face, the distance between said face and the upper edge of said slot being substantially less than the diameter of a standard coin for said runway, said slot extending downwardly from its upper edge a distance at least equal to the distance between said upper edge and said face whereby metal from said battered rail may extrude into said slot.

2. A coin chute in accordance with claim 1 in which said one section of said one guide rail has a ledge projecting into said slot.

JOHN M. MELICK.