Nov. 1, 1927. 1,647,180

M. J. KINDRAT ET AL

COIN CHUTE

Filed Dec. 18, 1926

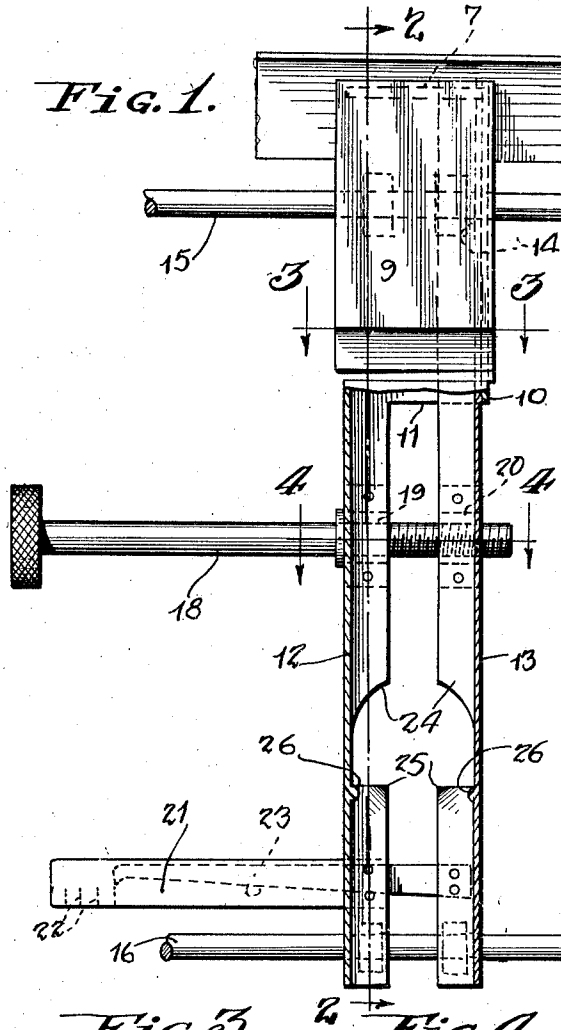


Fig. 1.

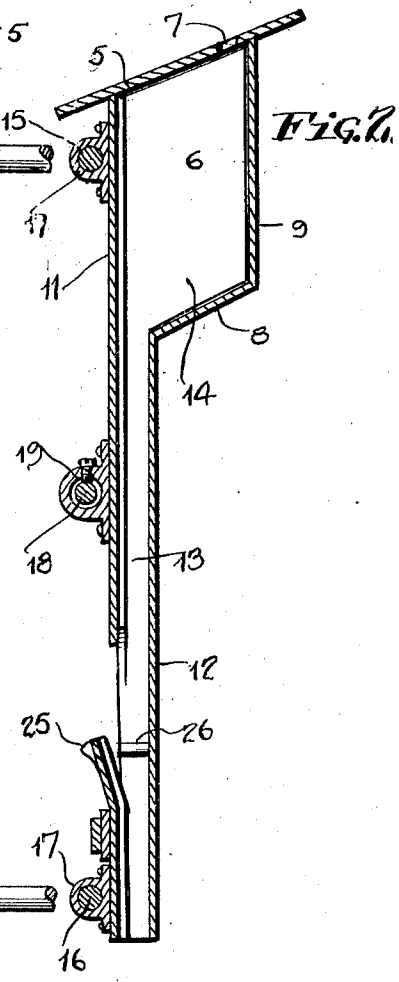


Fig. 2.

Fig. 3.

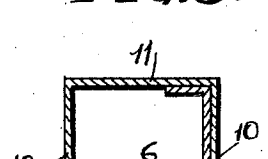


Fig. 4.

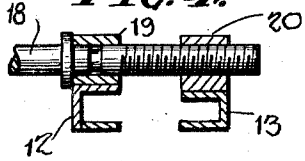
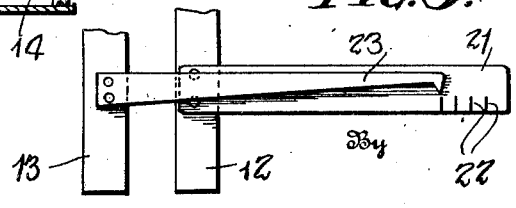


Fig. 5.



Inventors
Metrod J. Kindrat
Hauryil Zatzerkowny
By Bryant & Rowny
Attorneys.

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UNITED STATES PATENT OFFICE.

METRO J. KINDRAT AND HAWRYIL ZATZERKOWNY, OF DETROIT, MICHIGAN.

COIN CHUTE.

Application filed December 18, 1926. Serial No. 155,721.

This invention relates to certain new and useful improvements in coin chutes for vending machines and the like, and has more particular reference to a particular form of coin chute capable of being advantageously employed in a dispensing machine such as shown in our co-pending application, Serial Number 13,735, filed March 7, 1925, which has merged into Letters Patent No. 1,622,262, dated March 22, 1927.

The primary object of the present invention is to provide an improved form of coin chute capable of being readily adjusted to receive a coin of given diameter and to prevent the insertion of a coin of a greater diameter.

A more particular object of the invention is to provide a coin chute of the type set forth in our above mentioned co-pending application, and wherein provision is made for adjusting the chute to adapt the same for delivering coins of any desired one of a number of different diameters to a coin controlled mechanism, while at the same time preventing passage of smaller coins to such coin controlled mechanism and preventing the insertion of larger coins.

Still another object is to provide a coin chute of the above kind embodying a pair of longitudinal sections, and means to adjust said sections toward or away from each other to adapt the chute for operative reception of coins of any desired one of a number of different diameters.

A further object is to provide simple and effective means for indicating the relative adjustment of the coin chute sections whereby the desired adjustment may be accurately and expeditiously effected.

Other objects will become apparent as the nature of the invention is better understood, and the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing, wherein like reference characters indicate corresponding parts throughout the several views,

Figure 1 is a view partly in top plan and partly in longitudinal section, of a coin chute constructed in accordance with the present invention;

Figure 2 is a longitudinal sectional view taken substantially upon line 2—2 of Figure 1;

Figure 3 is a transverse section taken upon line 3—3 of Figure 1;

Figure 4 is a transverse section taken upon line 4—4 of Figure 1; and

Figure 5 is a fragmentary bottom plan view of the parts of the chute-adjustment indicator and the adjacent portions of the relatively adjustable chute sections.

It is to be understood that the present coin chute is adapted to assume an inclined position when operatively disposed, substantially as is disclosed in connection with an analogous form of coin chute, in our above mentioned co-pending application. This inclined position of the chute will be apparent upon the understanding that 5 indicates a fragment of the front vertical wall of a vending machine housing or casing.

The present coin chute embodies a relatively large hollow outer end portion forming a chamber 6 for initially receiving the coin inserted through the coin slot 7 provided in the vending machine wall 5 adjacent the top of said hollow end portion, and this end portion is preferably constructed of a suitably bent or folded sheet metal blank as indicated in Figure 3 so as to provide said end portion with a tubular body open at its outer end, partially closed at its inner end by a substantially vertical wall 8, and composed of a top wall 9, side walls 10 and a bottom wall 11.

The present chute also embodies an inner end portion communicating with the inner end of the chamber 6 adjacent the bottom of the latter and composed of a pair of substantially complementary longitudinal sections 12 and 13 which are of substantially channel form as shown in Figure 4 and have their flanges facing toward each other so as to form substantially a divided flattened tube. The chute section 12 is fixed or rigid with the outer end portion of the coin chute as well as co-extensive with one side of the latter, while the section 13 is freely movable laterally toward and away from the section 12 for varying the effective width of the portion of the chute formed by said sections 12 and 13. It is thus apparent that when the section 13 is adjusted toward the section 12, passage of a coin into the chute portion composed of sections 12 and 13 will be prevented unless it is of no greater than a given diameter. The outer end of the movable chute section 13 freely extends outwardly

into the chamber 6 through the inner end of the outer chute portion, and rigid with the outer end of said section 13 is an angular plate 14 fitting and laterally slidable in the chamber 6 across the slot 7 for restricting the latter in accordance with the adjustment of the section 13 relative to the section 12. It will thus be apparent that when the section 13 is adjusted toward the section 12 the plate member 14 will be correspondingly adjusted toward the transverse center of slot 7 so that the latter is correspondingly restricted. This will prevent insertion of a coin through slot 7 and into chamber 6 unless such coin is of no greater diameter than may pass into the portion composed of sections 12 and 13.

The outer end of the chute may be attached to the inner surface of the wall 5 by soldering or the like, and for effectively supporting the chute, it is mounted upon stationary transverse horizontal supporting rods, 15 and 16 suitably carried by the casing or housing of the vending machine. As shown, the inner and outer ends of the chute are provided with mounting brackets 17 through which the supporting rods 15 and 16 extend, and the bracket 17 carried by the section 13 slidably engages the rod 16 so that said section 13 is guided in its lateral movement when adjusted relative to the section 12. Any suitable means may be provided for relatively adjusting the sections 12 and 13, but, as shown, the same preferably consists of an adjusting screw 18 swiveled as indicated in Figure 4 in a bearing bracket 19 fixed to the underside of the intermediate portion of the stationary chute section 12 and having threaded engagement in a nut member 20 transversely aligned with the bracket 19 and fixed to the underside of the adjustable section 13. It is thus apparent that when the screw 18 is turned in one direction the section 13 will be adjusted toward the section 12, while turning of the screw 18 in the other direction will effect adjustment of the section 13 away from the section 12. A dial arm or plate 21 is fixed at one end to the stationary section 12 and projects laterally from the latter. This dial arm is provided at its outer or free end with a longitudinal series of graduations as at 22 for cooperation with the free outer end of a pointer 23 which projects laterally from and is rigidly secured at one end to the adjustable section 13. It will thus be seen that means is provided for facilitating quick and accurate adjustment of the chute section 13 and for indicating the particular adjustment made. In the relation shown the section 13 is adjusted to its extreme limit of movement away from the section 12 and the pointer 23 registers with the innermost graduation 22 for indicating that the chute is then adapted for reception of a 25 cent piece. When the chute section 13 is adjusted so as to have pointer 22 register with the next outer graduation, the chute will be adapted for reception of a nickle, while with the pointer 23 registered with the then next outer graduation, the chute will be adapted for reception of a penny. Upon adjusting the section 13 so that the pointer 23 registers with the outermost graduation 22, the chute will be adapted for reception of a dime.

Means is provided for preventing a coin, smaller than the size of the coin for which the chute has been adjusted, from being delivered to the coin control mechanism of the vending machine, and therefore from actuating such mechanism. This means is of a character to insure coins of the proper size to be delivered to such coin control mechanism, and consists in the provision of a bottom opening, of substantially semi-circular form, in the inner chute portion, such opening being constituted by opposed notches 24 provided in the bottom flanges of the sections 12 and 13 as shown in Figures 1 and 2. The notches 24 preferably extend the full depth of the flanges of sections 12 and 13 as shown in Figure 1, so that when the chute is adjusted in width by adjustment of section 13 relative to section 12, the opening formed by said notches 24 will be correspondingly adjusted in width. The corners of the bottom flanges of sections 12 and 13 at the inner ends of the notches 24 are directed downwardly as at 25 so as to substantially form a depression in the bottom of the chute at the inner end of the opening formed by notches 24, and formed upon the inner surfaces of the webs of sections 12 and 13 at the inner ends of the notches 24 are opposed transverse or vertical ribs 26 which slightly constrict the passage through the inner portion of the chute at the inner end of the opening formed by notches 24. It will thus be seen that when a coin of proper size is inserted through the coin slot 7 it will have a considerable drop in the relatively long and deep chamber 6 so as to enter the inner end portion of the chute with considerable speed of movement. This coin will then pass until it strikes the ribs 26, whereupon it will be deflected outwardly and downwardly through the opening composed of notches 24 for passage to and operation of the coin control mechanism the passage of the coin through the bottom opening being facilitated by the downwardly bent corner portions 25. On the other hand, should the coin inserted be an improper one having a sufficiently small diameter as to readily pass between the ribs 26, such improper coin will not be deflected outwardly and downwardly through the bottom opening of the chute, but will pass on to the extreme inner end of the chute for delivery

through the latter to a desired point where it will have no effect upon the coin control mechanism of the vending machine. As shown in our above mentioned co-pending application, this desired point may consist in the receiving end of a coin return chute leading to the exterior of the vending machine casing, whereby the false coin is returned to the prospective customer.

From the above description it is believed that the construction and operation as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art. However, it is particularly noted that the present construction not only provides for the adjustment of the effective width of the chute, but also a corresponding constriction of the coin slot, whereby a coin which cannot pass into the adjustable part of the coin chute will be prevented from being inserted into the coin slot. Also, in any adjustment a coin of proper size will positively be directed to the coin control mechanism and a coin of any smaller size will be allowed free passage to a coin return chute or the like for insuring against operation of the coin control mechanism. A structure of this character in which the chute is, in itself, adjustable in width, is extremely simple, durable and efficient in operation and accordingly presents considerable advantage over a rigid chute having mere internal adjustable means for constricting its passage.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What we claim as new is:—

1. In combination with a wall of a vending machine having a horizontal coin slot, an inclined coin chute having a relatively deep outer end portion and a relatively shallow inner end portion, said coin slot opening into the top of said deep portion, said shallow portion leading from the bottom of said deep portion, said shallow portion embodying a pair of longitudinal sections, one fixed to the deep portion and the other adjustable laterally, and an extension on the outer end of said laterally adjustable section movable in the deep portion across said coin slot for restricting the latter in accordance with the adjustments of the adjustable section toward the fixed section.

2. A coin chute embodying a pair of longitudinal sections relatively laterally adjustable, said sections having opposed bottom notches forming an opening for the passage of coins to coin-controlled mechanism.

3. A coin chute embodying a pair of longitudinal sections relatively laterally adjustable, said sections having opposed bottom notches forming an opening for the passage of coins to coin-controlled mechanism, and transverse internal coin-deflecting ribs on the sides of said sections at the inner ends of said notches.

4. A coin chute embodying a pair of longitudinal sections relatively laterally adjustable, said sections having opposed bottom notches forming an opening for the passage of coins to coin-controlled mechanism, and transverse internal coin-deflecting ribs on the sides of said sections at the inner ends of said notches, said sections being of channel form and having down-turned corner portions at the inner ends of said notches.

5. A coin chute embodying a pair of longitudinal sections relatively laterally adjustable, said sections having opposed bottom notches forming an opening for the passage of coins to coin-controlled mechanism, and coin deflecting means at the inner end of said coin passage opening.

In testimony whereof we affix our signatures.

METRO J. KINDRAT.
HAWRYIL ZATZERKOWNY.