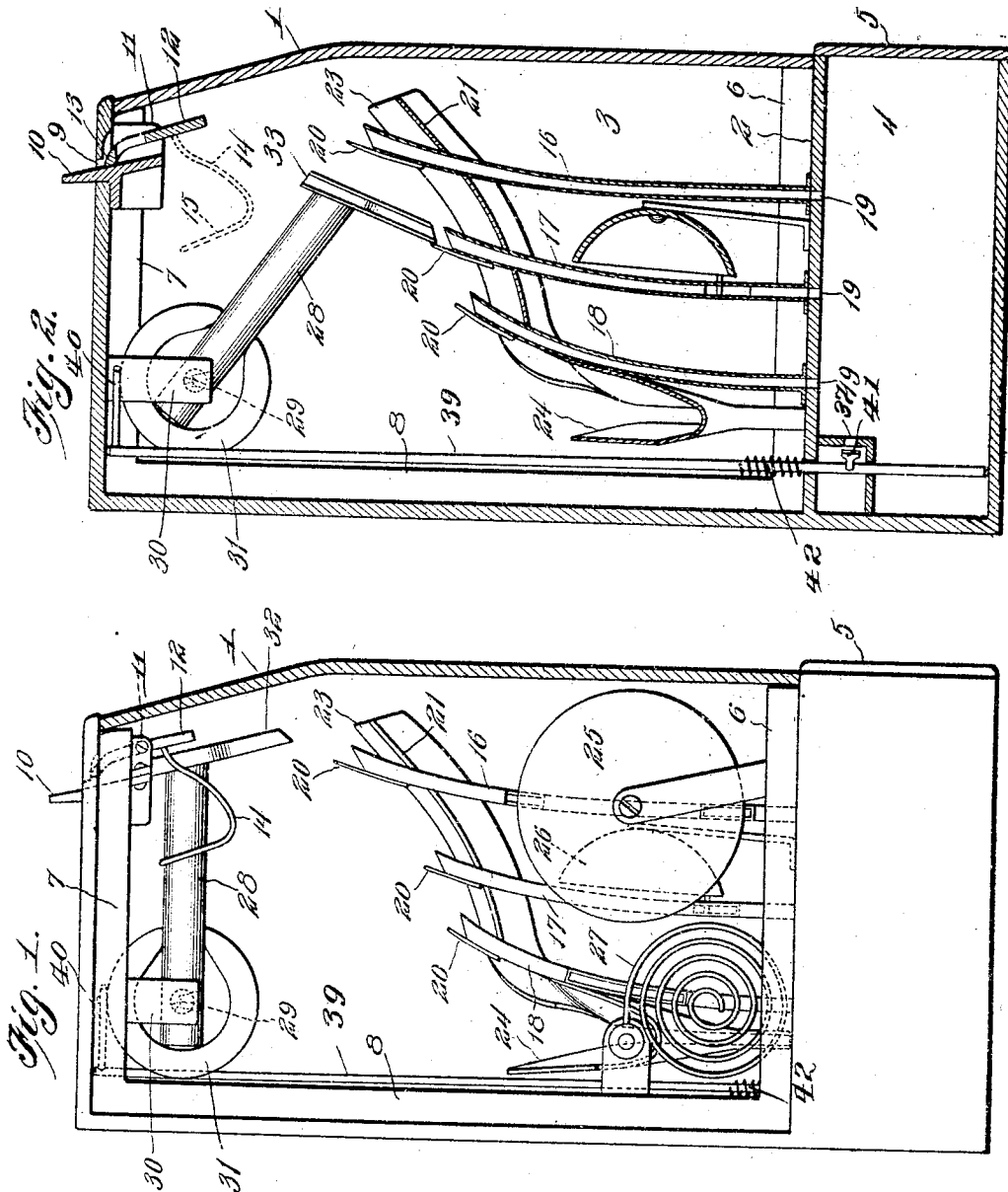


H. A. SMITH.
 COIN DISTRIBUTING APPARATUS.
 APPLICATION FILED APR. 20, 1909.

1,039,604.

Patented Sept. 24, 1912.

2 SHEETS—SHEET 1.



Henry Alexander Smith ^{Inventor}

Witnesses

Louis S. Heinrichs
 D. W. Gould.

By Victor J. Evans

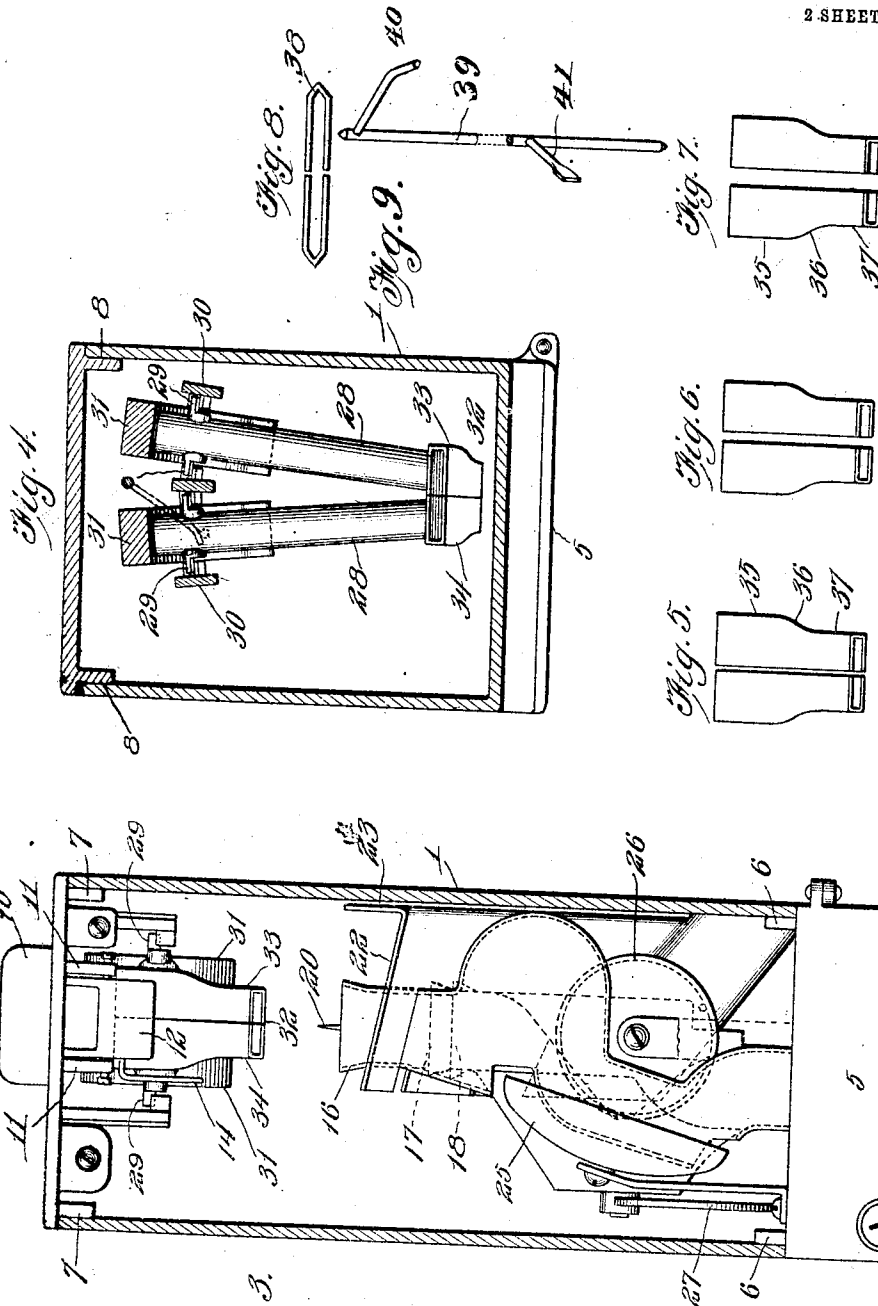
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Attorney

UNITED STATES PATENT OFFICE.

HENRY ALEXANDER SMITH, OF ATLANTA, GEORGIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-FOURTH TO CHARLES CLIFFORD HUDSON, OF EAST POINT, GEORGIA, AND ONE-SIXTH TO A. I. V. WILSON, OF ATLANTA, GEORGIA.

COIN-DISTRIBUTING APPARATUS.

1,039,604.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed April 20, 1909. Serial No. 491,094.

To all whom it may concern:

Be it known that I, HENRY ALEXANDER SMITH, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Coin-Distributing Apparatus, of which the following is a specification.

The invention relates to an improvement in coin-distributing apparatus designed particularly for use in connection with telephone pay stations or the like, and is specifically directed to a mechanism whereby the various essential coins delivered to the apparatus through a single slot are automatically delivered to a proper coin chute, whereby the central operator at the distant station is advised of the insertion of the proper coin in the apparatus.

As is well understood in connection with telephone pay stations of the usual type the central operator on determining the cost of a call will notify the caller to deposit a coin of a certain denomination and will determine the proper deposit of such a coin by the sound incident to the contact of the coin in its travel through the chute with a distinctive sounding alarm. As heretofore constructed these devices have required the formation of distinctive coin chutes, one for each particular coin and there has been no way to guard against the insertion of a counterfeit coin or marker resembling the proper coin in size and shape.

It is, therefore, the main object of the present invention to construct a coin delivery apparatus in which automatic selective mechanism is employed which will deliver to the proper coin chute only perfect coins of proper size and weight, and will reject and return to the caller all coins or markers other than those of a perfect character.

Another object of the invention is the provision of means whereby the coin slot in the wall of the casing is closed against the further introduction of a coin during the operation of the apparatus.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in elevation, partly in motion, illustrating the improved delivery

apparatus with the parts in normal or inoperative position. Fig. 2 is a view in section, partly in elevation, of the same, with the parts in operative positions. Fig. 3 is a front elevation of the apparatus, the forward wall of the casing being removed. Fig. 4 is a section on line 4-4 of Fig. 3. Fig. 5 is an elevation of the coin receiver, showing the parts in the positions occupied when delivering the smallest and lightest coin, as a dime. Fig. 6 is a similar view with the parts in position for delivering the next lightest coin, as a nickel. Fig. 7 is a similar view with the parts in the position occupied when delivering the heaviest coin, as a quarter. Fig. 8 is a bottom plan of the receiver, showing the preferred sectional formation thereof. Fig. 9 is a perspective view of the locking bar.

Referring particularly to the accompanying drawings, my improvement is shown as applied to a telephone pay station case 1, and it is to be understood that this case, aside from the details of construction hereinafter noted, is to indicate any desired form or size of case, as such forms no material part of the present invention. As shown the case is divided by a transverse partition 2 near the bottom thereof to form an upper or delivery chamber 3 and a lower or coin chamber 4, the latter being ordinarily designed to receive a coin receiving receptacle and being closed by a door 5 provided with any desired form of lock. As illustrated the upper portion of the case is made in two separable sections, one of which, that is the rear wall and top wall of the case proper, is integral with the lower portion, the other section including the side walls and front wall of the case and being adapted to slidably engage flanges 6 and 7 formed on the edges of the partition 2 and top plate, and to bear against flanges 8 projecting from the back plate when in applied position, suitable securing means being used to fix the parts in case-forming position.

The construction described is simply a convenient means for providing access to the coin delivery mechanism; it being understood that as before stated the invention contemplates the use of any style or form of case.

The upper wall of the case is centrally, adjacent the forward edge, formed with a coin receiving slot 9, this slot being the only slot formed in the upper wall and having a length and width sufficient to receive the largest coin for which the particular mechanism may be adapted. A guard strip 10 is arranged adjacent the rear wall of the slot to facilitate the insertion of coins and in the construction shown this guard strip is carried on a separate section secured to the under surface of the top wall of the case. Pivotaly mounted in ears 11, depending from the top wall of the case in advance of the slot 9, is a trap 12 comprising a strip of metal having its upper edge bent rearwardly, as at 13, so that when the trap is in a certain position said edge 13 will bear against the guard strip 10 and close the slot 9 against the introduction of a coin. The trap is provided with an arm 14, preferably of wire, which projects rearwardly and downwardly from the trap and then upwardly to form a loop 15, for a purpose which will presently appear.

Secured to and rising from the partition 2 in the case are coin chutes 16, 17 and 18, three being shown in the present instance, it being understood, however, that the number of coin chutes will depend upon the number of coins for which the device is adapted. The coin chutes are practically of identical construction and communicate with the coin chamber 4 through the medium of slotted openings 19 in the partition, so that any coin delivered to said chutes will be in turn delivered to the coin chamber or to any receptacle placed therein. The coin chutes are of unequal heights, that nearest the forward wall of the case being of the greatest height while that nearest the rear wall is of least height, the particular height of the coin chutes having a definite relation to the working of the apparatus, as will presently appear. The rear wall of each coin chute is provided with a guard finger 20, arranged centrally of said wall and projecting above the upper edge thereof, said fingers being very narrow as compared with the normal width of the chute, as particularly apparent from Fig. 3 of the drawings. A coin trough 21 is arranged about the coin chutes, said trough comprising a bottom plate 22 through which the respective chutes pass, said plate inclining downwardly toward the rear of the case and laterally toward one side thereof, being adjacent said latter side of the case provided with a guard flange 23, as clearly shown in Fig. 3. The coin trough has its forward edge arranged in advance of the forward coin chute 16, and its rear edge in rear of the final coin chute 18, the rear edge of the trough being formed to provide a delivery chute 24 formed to direct the coins falling into the coin trough toward one side

of the casing, the mouth of the delivery chute opening through an appropriately formed opening in said side wall.

Each of the coin chutes 16, 17, and 18 are provided with distinctive alarms, as 25, 26, and 27, each secured immediately adjacent its respective chute, and said chutes are so formed that the coin in its passage there-through will engage and sound the particular alarm, whereby the operator is advised of the passage of a particular coin through a particular chute.

As so far described the apparatus comprises the fixed parts of the apparatus, and while preferring the specific embodiment described and shown it is to be understood that the generic feature of the present invention resides in the selective coin receiver and that, therefore, the details of the parts described are not primarily essential, and are designed to be varied to suit particular requirements within the terms of the appended claims.

The selective coin receiver is a single device designed to receive the coin from the coin slot 9 and to automatically select the proper coin chute to which said coin, in accordance with its value, is to be delivered and to reject and prevent the delivery to a coin chute of any marker or coin not exactly in accordance with the particular requirements for which the apparatus is designed.

The coin receiver comprises duplicate rods 28, formed adjacent their relatively rear ends with opposed knife edge trunnions 29 designed to be mounted in bearings projecting from standards 30 depending from the upper wall of the case. The respective standards and bearings carried thereby are so arranged that the rods 28 project toward the forward wall of the case in a relatively converging relation, that is at the forward or free ends the rods are practically in contact, while at their rear ends they are spaced the maximum distance apart. Each of the rods are provided adjacent their pivots with an appropriate counterweight 31, which weights are designed to slightly overbalance the normal weights of the rods and the coin receiver proper, so that under normal conditions the rods are always in their uppermost or coin receiving positions. Each rod carries at its forward end a portion of the coin receiver, or more properly speaking each rod carries one-half of said receiver. The receiver, which is, of course, in duplicate sections, as one-half is carried by each rod, comprises an approximately rectangular holder 32 divided longitudinally into duplicate sections 33 and 34. The holder as an entirety has its side walls extended for a portion of its length in parallel relation, as at 35, and the maximum width at this point is of a size to just receive a coin corresponding to a perfect coin of the largest size for

which the apparatus is adapted. Below the parallel sections the side walls of the holder converge toward each other, as at 36, and below said converging portion are again projected in parallel relation, as at 37. The holder is open at the top and bottom and the extent of the converging portion of the side walls 36 is such that at the narrowest point of the holder when the sections 33-34 thereof are in contact, as when the parts are in normal position, is such that the smallest coin for which the machine is designed will not pass through the holder.

As has been previously stated the arms 28 of the receiving mechanism are mounted in angular relation with the effect that as said arms are moved downward the relatively forward ends thereof will gradually recede from each other. This will be clear from an inspection of Fig. 4 of the drawings, and it will be clear that as said arms move downward and, therefore, cause the forward ends thereof to recede from each other the side walls of the holder will, by virtue of such movement of the forward ends of the arms, be gradually separated to virtually increase the transverse dimension of the holder. It is by virtue of this movement that the apparatus is designed for the automatic selection of the proper coin chute for the delivery thereto of the coin carried in the holder, as will presently appear.

The receiving or mouth ends of the chutes 16, 17 and 18 are arranged so that in the movement of the receiving apparatus the holder will aline successively with the chutes with its lower edge immediately above the upper edge of said chutes. In other words the upper edge of the chutes are arranged in a plane which is practically concentric with the path of movement of the lower end of the holder, as plainly shown in Figs. 1 and 2.

In the disposition of the receiving apparatus in normal position, which is the position occupied under the influence of the weights 31, one of the arms 28 engages the loop 15 of the arm 14 and so tilts the trap 12 as to open the slot 9, so that as long as the receiving apparatus is in position the slot is open for the introduction of coins, though immediately succeeding the initial movement of the receiving device the slot is automatically closed to prevent introduction of a coin for any purpose during the operation of the device under the influence of the first coin.

In use, assuming the parts constructed and arranged as described, the operation of the improved coin delivery and selective mechanism is as follows: If for instance the coin to be introduced is a dime, which is the lightest and smallest coin to be used, a perfect coin of such type is introduced into the

holder the holder is so constructed that the dime will be held therein between the convergent portions 36 of the side walls as long as the sections 33 and 34 of the holder are in contact, or in other words as long as the receiving device is in normal position. The weight of the coin is sufficient to cause the forward ends of the receiving device to move downward, which movement as before stated tends to gradually separate the sections of the holder. The parts are so related that when the holder sections have been sufficiently separated to permit the passage of the dime therethrough, said holder will be alined with the coin chute 16 thereby delivering the coin directly to said chute and sounding the audible alarm 25. The guard finger 20 provides a guiding cooperation with the coin to insure the delivery of said coin to the chute. If the coin delivered to the chute holder is a nickel it will be obvious that the separation of the holder sections when in alinement with the chute 16 will not be sufficient to permit the passage of the nickel through the holder, and that said sections will not separate to an extent to permit such passage until the holder is in alinement with the chute 17. The same operation applies when the coin inserted in the holder is a quarter, the separation of the holder sections in this instance being not sufficient to permit the passage of the coin therethrough until said holder is in alinement with the chute 18. In other words the holder will be automatically opened to permit the passage therethrough of a coin only when the holder has reached a position in alinement with the chute designed to receive that coin, thus causing an automatic selection of the proper chute for the coin. Upon the delivery of the coin from the holder the ears 31 operate to return the receiving device to normal position for further operation.

In the event the coin deposited is of less weight and size than a perfect coin it is obvious that the passage through the holder will not be timed in exact accordance with the arrangement of the chutes, so that said coin will be delivered through the holder in a position in advance or in rear of that chute designed for a coin most nearly approximating the weight and size of the coin carried. In delivery from the holder in any position other than in alinement with the chutes permits the coin to drop into the coin trough 21 and from said trough to be returned to the operator through the delivery chute 24.

In Fig. 8 I have illustrated what I prefer as the sectional formation of the holder, in which instance the side walls are of angular formation, as at 38. By this means it will be obvious that if the coin or marker introduced is not of the exactly proper thickness, it will have greater freedom of movement in the holder than a coin of proper thickness

and hence will be delivered to the coin trough notwithstanding the fact that it may be of an exactly proper diameter and weight.

From the construction described it will be obvious that the device described provides for the automatic selection of perfect coins and for the delivery of such perfect coins to their proper chutes only, and while the embodiment of details herein described is preferred it is to be understood that I consider as within the spirit of the present invention such changes in form and structure as may fall within the scope of the appended claims.

In Fig. 9 I have illustrated a lock for preventing the operation of the coin distributing mechanism in the event the coin chamber 4 is unoccupied by the proper coin receiving receptacle. For the purposes of this lock the receptacle is provided with a projection designed to pass through an opening 37 formed in an auxiliary chamber 38 in the chamber 4. The locking rod 39 is mounted for rotation within the case 1 adjacent the rear wall thereof, said rod being provided near its upper end with a finger 40 designed to overlie a portion of one of the arms 28, and near its lower end within the chamber 38 with an arm 41 alining with the opening 37. A spring 42 is arranged on the rod and operative to hold the arm 41 normally adjacent the opening 37, in which position the finger 40 is so disposed as to prevent movement of the arm. Therefore until the coin drawer is in place the coins cannot be deposited, as the apparatus is held inoperative.

It is to be understood that the device will reject coins which are so worn as to become unsuitable for usual commercial purposes.

Having thus described the invention what is claimed as new, is:—

1. A receptacle arranged for coin reception, a plurality of chutes arranged in the receptacle to receive coins of different values, a movable sectional coin holder to receive the coins delivered to the receptacle, and means whereby the sections of said holder are automatically operated to permit the passage therethrough of the specific coin corresponding with the particular chute when said holder is in position to deliver said coin to said chute.

2. A receptacle arranged for coin reception, a plurality of different coin chutes arranged within the receptacle, a sectional coin holder operated by the coin and adapted to cooperate with each chute in succession, and means whereby the sections of said holder are operated to permit the passage therethrough of a particular coin when the holder is in position to deliver said coin to the chute arranged therefor.

3. A receptacle arranged for coin reception, a plurality of different coin chutes therein, a sectional coin holder to receive

the coins delivered to the receptacle, said holder being formed with a coin passage normally adapted to support the coins within the holder, and means whereby the sections of the holder are operated to adjust the size of the passage to permit the delivery of predetermined coins therethrough when the holder is in position above the chute adapted for the reception of such coins.

4. A receptacle adapted to receive coins of different values, an independent chute for each respective coin value, and a coin holder to receive all the coins delivered to the receptacle and movable to cooperate with the successive chutes, said holder being formed with a coin passage normally arranged to prevent the travel of coins therethrough, and means whereby said passage is automatically varied in size to permit the passage therethrough of a particular coin when the holder is in inoperative relation with the chute designed to receive the particular coin.

5. A receptacle adapted to receive coins of different values, an independent chute for each respective coin, a holder to receive all the coins delivered to the receptacle, said holder being capable of movement for cooperation with the respective chutes in succession, and means whereby the holder upon the reception of the coin will move to a position above the chute adapted for the reception of said coin and deliver said coin thereto, the delivery of the coin permitting the return of the chute to normal position and wholly beyond the position to cooperate with any chute.

6. A coin receptacle including three coin chutes for the reception of respectively different coins, a coin holder normally arranged beyond all of said chutes and adapted for travel under the influence of a coin to cooperate with the respective chutes in succession, and means whereby said holder will deliver a particular coin inserted therein to the chute adapted for said coin, the delivery of the coin serving to limit the operative movement of the holder and permitting the same to return to normal position.

7. A coin receiver for coin operated apparatus comprising a sectional coin holder adapted for movement, and means for gradually and increasingly separating the holder sections in the movement of the latter from normal position.

8. A coin receiver for coin operated apparatus comprising a sectional holder to receive the coins, said holder being arranged to support when in normal position the smallest coin for which the apparatus is adapted, and means for gradually and increasingly separating the holder sections in the movement of said holder from normal

position, whereby coins of different values will be discharged from the holder at separated points in its path of movement.

9. A coin receiver for coin operated apparatus comprising a sectional coin holder of hollow construction, and an arm supporting each section of the holder, said arms being arranged in relatively divergent planes.

10. A coin receiver for coin operated apparatus comprising a sectional coin holder of hollow construction, and an arm supporting each section of the holder, means for pivotally supporting each arm, said arms converging toward each other from their pivotal support.

11. A coin operated apparatus including a receptacle formed with a coin receiving slot, a series of coin chutes arranged within the receptacle and respectively adapted for the reception of coins of different value, and a single means normally disposed beyond cooperation with any chute operating between the slot and all of said chutes and adapted to deliver the coin inserted through the slot to the particular chute designed for the reception of such coin.

12. A coin operated apparatus including a receptacle formed with a coin receiving slot, a series of coin chutes arranged within the receptacle and respectively adapted for the reception of coins of different value, and a single means normally disposed beyond cooperation with any chute operating between the slot and all of said chutes and adapted to deliver the coin inserted through the slot to the particular chute designed for the reception of such coin, slot closing means, and means operating between the slot closing means and single means to maintain the closing means in inoperative position when the single means is in normal position.

13. A sectional coin distributor including a coin holder arranged for movement in a determinate path, said holder being adapted to receive coins of different values to operate the holder sections to distribute a coin of a particular value at a certain determinate point only in its path of movement.

14. A coin distributor including a sectional coin holder normally adapted to receive and support coins of any value, and

means for moving the sections of the holder to permit the passage therethrough of the respective coins at different points in the movement of the holder.

15. A coin distributor including a sectional holder, and means for operating the holder to space the sections thereof different distances apart at determinate points in the movement of the holder, whereby to permit the discharge from the holder of different coins at such points.

16. A coin distributor including a coin holder made up of sections to receive the coins between them, said holder being arranged for movement and adapted at determinate points in such movement to permit the discharge therefrom of coins of different values.

17. A coin holder comprising separated sections adapted for simultaneous movement under the influence of a coin, the distance between the sections varying at determinate points in such movement.

18. A coin holder comprising duplicate sections, and means for inducing a gradually divergent movement of the sections under the influence of a coin deposited therein.

19. A coin holder adapted for movement, said holder comprising a plurality of sections, and means for mounting the sections to induce simultaneous movement of the sections in two distinct directions during movement of the holder.

20. A coin holder adapted for movement and made up of a plurality of sections, and means to operate one section of the holder in a direction away from the other so as to space the sections different distances apart at determinate points in the movement of the holder.

21. A coin holder adapted for travel in a determinate path, said holder being formed with a coin passage therethrough and means for varying the size of said passage at determinate points in the travel of the holder.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY ALEXANDER SMITH.

Witnesses:

W. P. HUNTER,
C. C. HUDSON.