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COIN OR CHANGE DELIVERY MACHINE.

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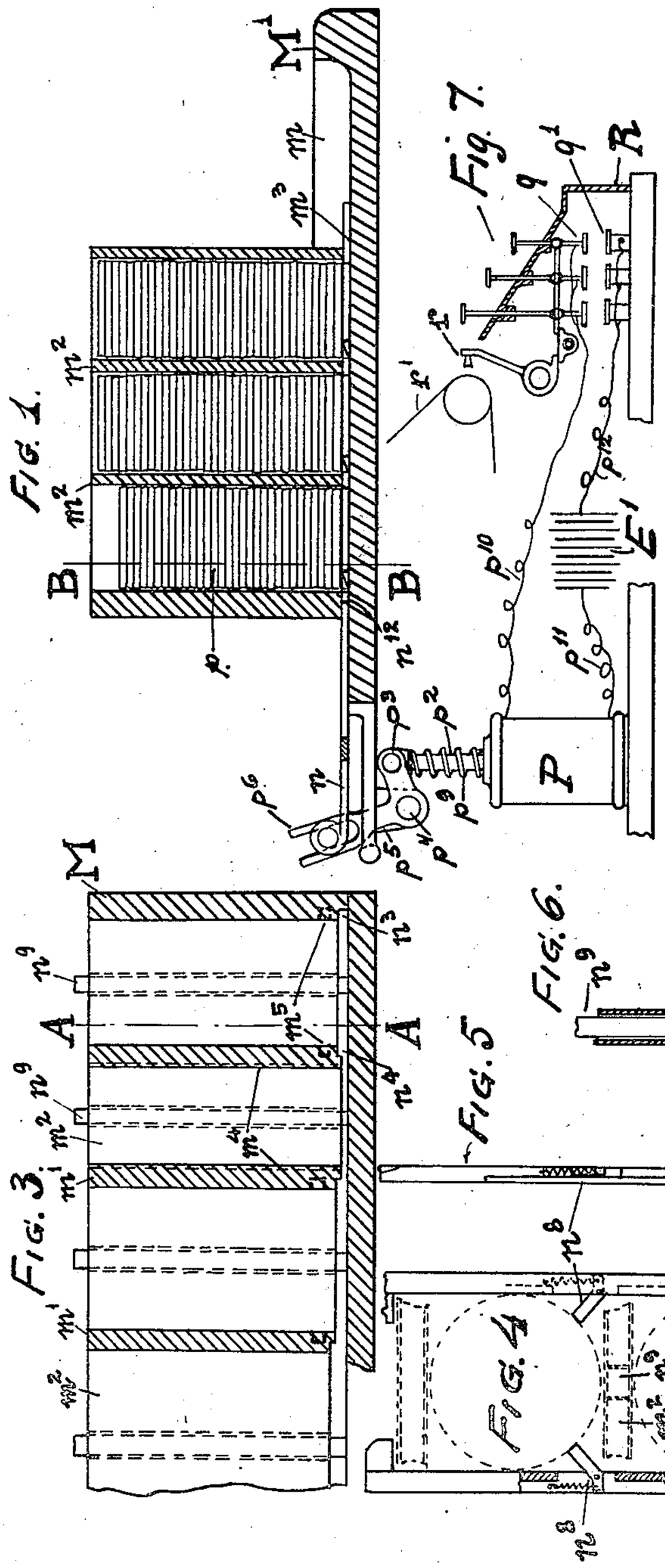

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COIN OR CHANGE DELIVERY MACHINE.

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To all whom it may concern:

Be it known that I, ARTHUR VON BARTH, a citizen of the United States, and a resident of Perth Amboy, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Coin or Change Delivery Machines, of which the following is a specification.

My invention relates to coin or change delivery mechanism although capable of use for delivering other articles like tickets and any round disks and square shaped objects.

The present mechanism as applied to the coin or change delivery is operated in conjunction with a controlling and registering device with a keyboard, keys of which when depressed cause a coin or a number of coins to be delivered at a time, registering at the same time on a sheet of paper inserted over the printing roller of said controlling device the denomination of a coin or amount of coins ultimately delivered.

In the accompanying drawing which form a part of this specification Figure 1 is a side elevation of the coin delivery mechanism sectioned on the line A—A of Fig. 3. Fig. 2 is a plan view of said mechanism partly broken off. Fig. 3 is an end elevation sectioned on the line B—B of Fig. 1. Figs. 4, 5 and 6 are explanatory sketches of certain details of the mechanism. Fig. 7 is an approximate sketch of the controlling and registering keyboard placed at any convenient distance and location to the coin delivery mechanism.

I will now describe the coin or change delivery mechanism. As illustrated this comprises an open top casing M within which are coins of different denominations and in front of which at the lower portion is an extension M^1 having a recess m for the coins fed out. The casing is divided into a series of compartments by means of walls m^1, each compartment adapted to hold coins of a given denomination, for example 1¢, 5¢, 10¢, 25¢, 50¢.

The coin compartments within the casing M may each be longer than its width so as to contain a number of columns of coins of the same denomination, and these may conveniently be separated from each other by divisions m^2 as seen in Figs. 1 and 2. By this arrangement the coin mechanism is enabled to contain a very large number of coins, and the feeding out mechanism which will be described, is adapted to feed out successively from each of the different columns without the need of any special attention by the operator or any re-adjustment of the mechanism after one column has been exhausted. Each of the compartments has a coin exit in front, for example the first or nickle compartment has a coin exit at m^3, such exit consisting in a horizontal slit of sufficient depth to permit one or more coins to pass outwardly; as also according to the respective compartment from which one or more coins has to be delivered at a time, they also being of varying depths according to the coins. Each of the compartments may have a flat bottom surface, as clearly indicated in Fig. 1. The divisions m^2 contained in the compartments are each caused to stand slightly above the flat bottom so as to permit coins to pass forwardly under the divisions in a manner that will be explained. The divisions may be secured in place either by a sliding connection as seen at m^4 in Figs. 2 and 3, or a pivotal connection as seen at m^5. In the latter case the divisions may be swung to an inclined position and in both cases the feature of movability is an assistance in putting coins into and taking them out of the compartments.

The means for feeding coins out is shown as a pusher or slide N having a stem n and forked beyond the stem in two branches n^1 and n^2, said branches passing forward in parallelism to whatever extent may be necessary to correspond with the number of columns of coins in each compartment. The pusher seen in Figs. 4 and 5 is of a size for three columns of coins, and its application is more clearly seen in Fig. 2. In action the pusher rests upon the flat bottom of its compartment and slides forwardly and backwardly thereon in the act of pushing coins out of the compartment. The walls m^1 between the compartments as also between the side walls M of the casing are grooved or cut away at n^3 and n^4 to admit the pusher, and in fact as seen in Fig. 3 I prefer that the wall m^1 should not extend to the bottom of the casing but be suspended slightly thereabove so as to admit space for the side rails or branches n^1 and n^2 of the several pushers. The means which actually accomplishes the pushing out of the coins consists in a plu-

rality of projections n^6 formed preferably in pairs on opposite sides of the pusher, and of such construction that on each forward movement of the pusher the projections will engage the lowermost coins and shove them forward so that in the full operation of the machine each complete forward movement of the pusher forces a number of coins out from the compartment into the recess m in front. In order that the pusher may be returned to its backward position notwithstanding the presence of the projections n^6, the latter are made in the form of wedges with inclined rear surfaces n^7 so that they may ride easily under the coins, or said projections are pivotally attached as at n^8 and made the same to recede on passing the column of coins while the pusher N is moving to its backward position.

In conjunction with the wedge projections n^6 or n^8 I employ also a means to prevent coins being fed backwardly by friction caused by projections of the pusher and this may conveniently comprise drop latches n^9, each of which is shown mounted centrally in one of the division walls m^2, the latter having an interior passage from top to bottom to permit the free movement of the latch. The lower end of each latch is inclined as seen at n^{10}, Figs. 3 and 6.

In the operation of a pusher of the construction described, referring to Fig. 1, coins will be fed on each reciprocation of the pusher and will be drawn from the rearmost column p of the coins in such compartment. To describe the action in detail it is as follows: Fig. 2 shows the pusher N in its backward position. The several projections n^6 or n^8 are behind the three respective bottom coins of the three columns. The several latches n^{10} are inclined at their lower ends so as to permit forward movement but to prevent backward movements of the coins. With this condition of affairs, the pusher is shoved forwardly the distance approximately the diameter of one coin. The three bottom coins are thereby each moved forwardly to the extent of one diameter, and the forward coin p^1 passes out from the front slit m^3 into the recess m of easy access to the operator. At the same time the other two coins are each moved forwardly taking their place beneath the next succeeding columns, and at the end of the front stroke of the pusher the rear column p will drop to the extent of the thickness of a single coin and a new coin will thereby engage the pusher in the space n^{11} thereof. On the backward movement of the pusher the several pairs of wedge projections n^6 or n^8 will pass easily under or around the several columns of coins respectively, and the pusher will be returned to its normal position or that seen in Fig. 1, while the coins will be prevented from moving backwardly with the pusher by means of the latches n^9 standing in their way. The rearmost wall does not require a drop latch with inclined bottom face, but instead is provided with a fixed lug or projection n^{12} which stands permanently in position to prevent any coins passing backwardly out of the compartment.

A convenient means to actuate the pusher N is as follows: A solenoid P may be employed having an armature p^2 acting upon one arm p^3 of a bell crank lever which is pivoted at p^4 and has a second arm p^5 forked at p^6. The rear end of the pusher is formed as seen in Figs. 4 and 5 with a pair of supporting extensions p^7 for a pin p^8, in consequence of which the inward and outward movement of the armature p^2 effects a forward and backward movement of the pusher, and the extent of such movement will be in accordance with the size of the coin handled in the compartment, to which the pusher applies. A spring p^9 may be employed and conveniently located about the armature p^2 for the purpose of forcing the bell crank lever back to its normal position, thereby returning the pusher to its rearward position. The solenoid will be sufficiently powerful to overcome the force of the spring p^9 and the friction and other resistance of the coins in being moved forwardly. To energize the solenoid any source of electricity, conventionally illustrated at E^1, may be employed, and the wires p^{10}, p^{11} and p^{12} may be employed to complete a circuit through the solenoid, the source of current and the control device. It is to be mentioned that in the control mechanism there is an electrical contact device consisting of two contacts q and q^1 which are adapted to be brought together by the depression of the proper key. For example if the key marked 5¢ is depressed, it will effect a contact between the contacts q and q^1 and complete the circuit so as to energize the solenoid P corresponding to the compartment which contains five cent pieces. In this way the depression of the key not only effects the feeding out of a five cent piece from the coin compartment into the recess m, but also records at the same time by means of an oscillating type r the amount of money paid out on the sheet of paper r^1. The solenoid P may be conveniently fixed below the coin container, and the control mechanism R can be located at any convenient distance from the coin or change delivery mechanism. It has to be said also that the thickness of projections n^6 or n^8 of the pusher N as also clearances at the bottom of compartments and at the exit m^3 must be made according to the thickness of one or a number of coins a pusher from the respective compartment is destined to feed out at a time.

Having thus described my invention and while not wishing to limit myself to the me-

chanical details of construction, I claim as new and desire to secure by Letters Patent the following:

1. A machine of the kind described, embodying therein a series of coin containers, each comprising a plurality of members having connecting open bottoms, and adapted to hold horizontally a vertical column of coins, vertical partitions separating the members of each series, said partitions having a space below the same sufficiently large to permit the passage of a coin and means simultaneously forcing a coin from one member to the next adjoining member beneath said partition, and delivering a coin from the last member to the operator, and a controller whereby said last named means may be selectively operated.

2. A machine of the kind described embodying therein a series of coin containers each comprising a plurality of members having connecting open bottoms and adapted to hold horizontally a vertical column of coins, vertical partitions separating the members of each series, said partitions having a space below the same sufficiently large to permit the passage of one coin and means simultaneously forcing a coin from one member to the next adjoining member beneath said partition, and delivering a coin from the last member to the operator, comprising a reciprocating pusher common to all members of each container, and a controller whereby said last named means may be selectively operated.

3. In a machine of the kind described, the combination of a coin container embodying therein a series of vertical containers each having a plurality of columns therein, vertical partitions separating said columns, said partitions being spaced above the bottom of the container sufficiently to permit the passage of one coin, a pusher common to all columns of a container and moving in the bottom of said container, permanently adapted to engage and to feed out coin, from any column next to the last exhausted, said pusher constructed to simultaneously move forward the bottom coins of all the columns so as to feed out the foremost coin, and to permit the rearmost column to feed downwardly to replace a coin in the vacant space.

4. In a machine of the kind described, the combination of a coin container embodying therein a series of vertical containers each having a plurality of columns therein, vertical partitions separating said columns, said partitions being spaced above the bottom of the container sufficiently to permit the passage of a coin, a backwardly and forwardly moving pusher common to all columns in a container and moving in the bottom of said container, permanently adapted to engage and to feed out coin, from any column next to the last exhausted, said pusher constructed to simultaneously move forward the bottom coins of all the columns so as to feed out the foremost coin and to permit the rearmost column to feed downwardly to replace a coin in the vacant space, and means whereby the pusher may return backward without moving coins backward.

5. A coin container comprising a plurality of alined coin columns of equal diameter, division walls therebetween having cut away portions at the bottom thereof to permit coins to be pushed below said walls from one column to the adjacent column, a reciprocating pusher common to all of said columns for feeding coins from said columns, one at a time, upon one reciprocation thereof, and latches in said division walls whereby coins are prevented from being fed upon the return reciprocation of said pusher.

6. A coin container having a plurality of coin columns, division walls therebetween arranged with spaces thereunder to permit coins to be pushed out from below, a pusher for feeding out coins, and latches in said division walls to prevent coins feeding back, and means on said pusher permitting it to move back without obstruction by the coins.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR VON BARTH.

Witnesses:
Mrs. H. R. CLARK,
INGVARD GREISEN.