A. E. H. BARILI.

CHANGE GIVING VENDER.

APPLICATION FILED OCT. 22, 1913.

1,128,281.

Patented Feb. 16, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

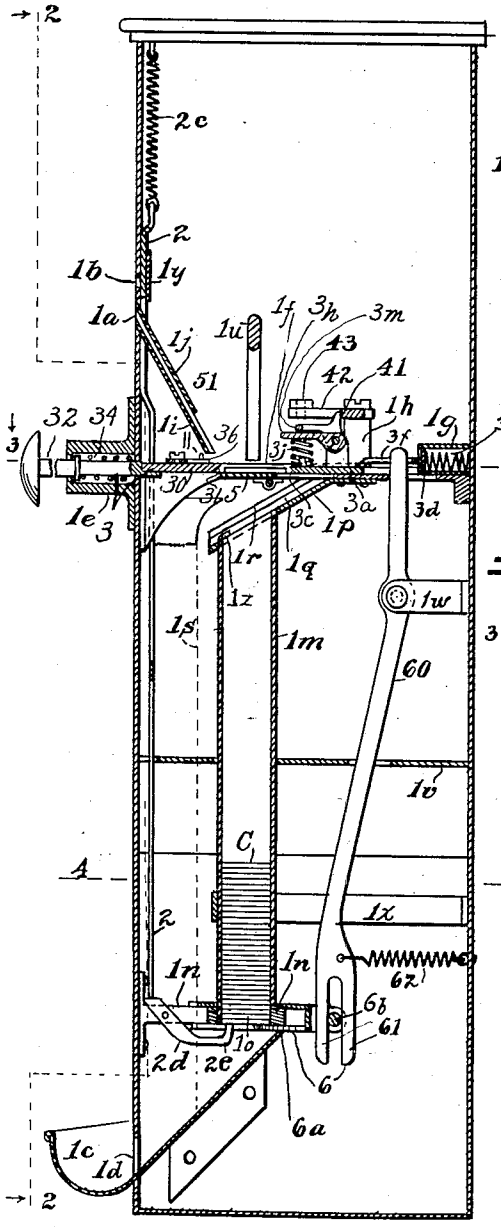


Fig. 2.

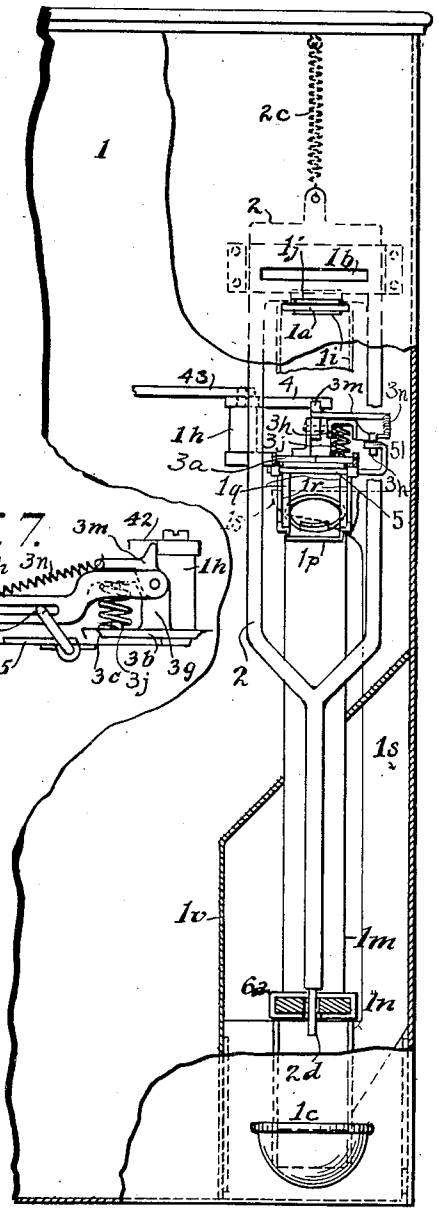


Fig. 7.

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2 SHEETS—SHEET 2.

Fig. 3.

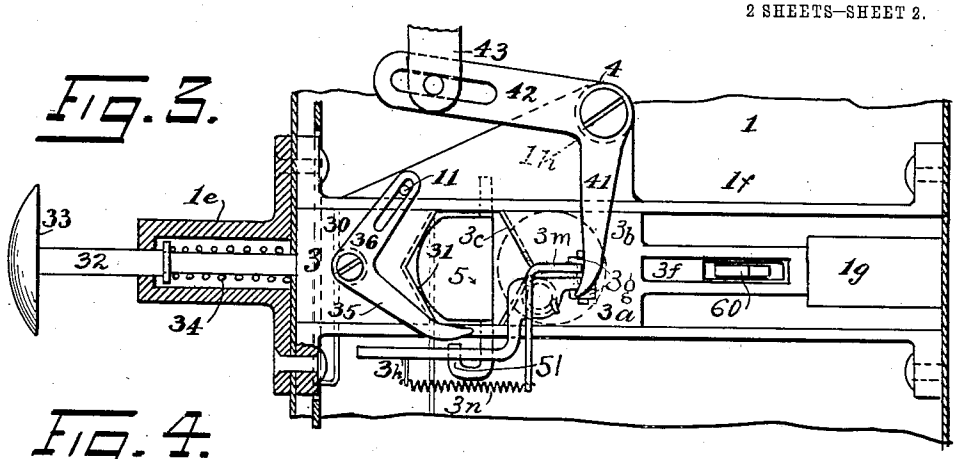


Fig. 4.

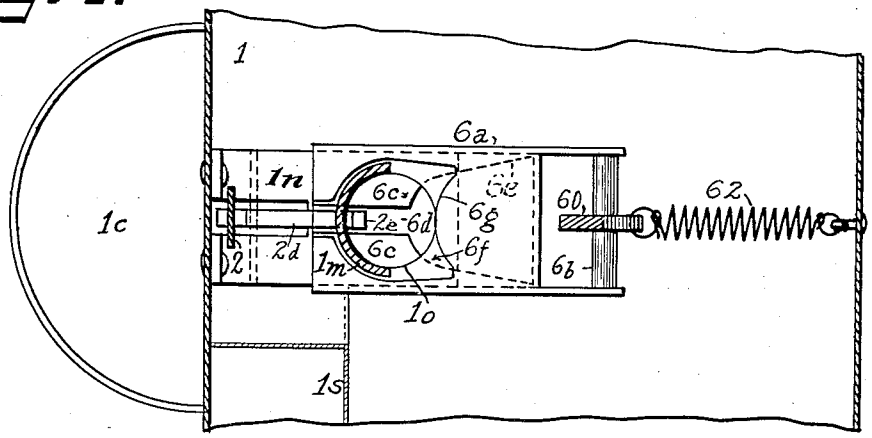


Fig. 5.

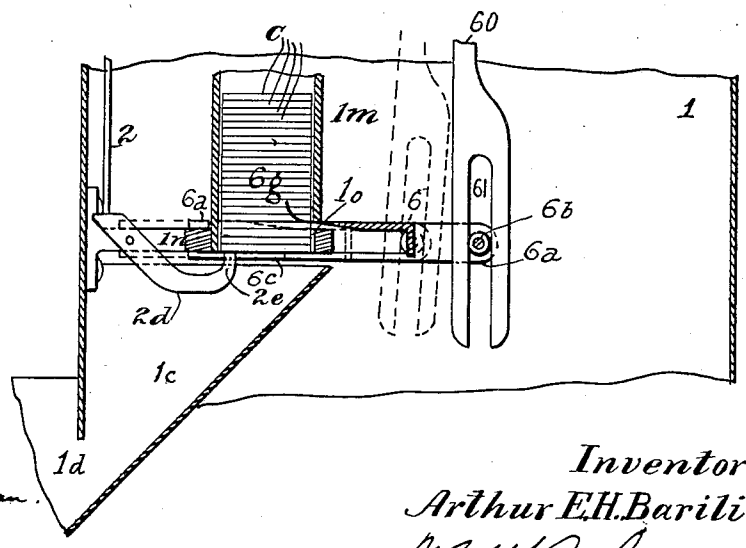
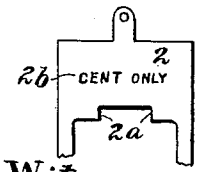


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CHANGE-GIVING VENDER.

1,128,281. Specification of Letters Patent. Patented Feb. 16, 1915.

Application filed October 22, 1913. Serial No. 796,558.

To all whom it may concern:

Be it known that I, ARTHUR E. H. BARILI, a subject of the King of Italy, residing in Pittsburgh, county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in Change-Giving Venders, of which the following is a specification.

My invention provides a change-giving appliance for mechanical venders which will widen their field of use by enabling them either to receive the price coin and deliver the purchase, or to receive a coin of higher value and deliver the purchase and the change.

The drawings illustrate a machine selling articles for one cent and adapted to receive cents, and deliver purchases, or to receive five cent coins and deliver purchases and four cents change. But it is obvious that the price-coin might be five cents or a quarter and the larger receivable coin a quarter, or a dollar; or that the price coin might be of one value, the change coin of another and the large coin of a third.

In general terms, my change-giving appliance comprises a case, either part of or adapted to be connected with the vender case and having on one face a coin-slot, a slide-knob and a change-pan; and contained therein an operable, preferably a lever-and-link connection with the vender mechanism; a change-coin hopper and change-giving mechanism; a coin-switch adapted to divert purchase-coins to the change-pan when the vender mechanism is unworkable; a manually-operable slide operably related with the coin-slot, the change-giver, the vender-lever, and the coin-switch; and a slot-gage adapted, when change cannot be given, to narrow the coin-slot to fit price-coins and exclude large ones.

In the drawings, Figure 1 is a vertical axial section, Fig. 2 a lateral section on the line 2—2 of Fig. 1, with the coin-slot in elevation. Figs. 3 and 4 are sectional plans respectively on the lines 3—3 and 4—4 of Figs. 1 and 2, Fig. 5 an enlarged axial section through the outlet of the change-hopper, Fig. 6 an elevation of the upper part of the slot-gage plate, and Fig. 7 a detail of the switch-mounting.

The case 1 is a closed prism made of sheet metal by known modes. In the upper part of its face is a coin-slot 1^a adapted for the large coin and adjacent thereto a sign-slot 1^b through which to read a sign "Cents" (or the price-coin) "only," which automatically registers with and is read through the sign slot when the machine cannot give change. Projecting from the lower part of the face is a change-pan 1^c communicating through an opening 1^d with the interior of the case; and between it and the slots a slide-ferrule 1^e. Inside the case are fixed parts as follows: the slide-way 1^f and thereon a spring-socket 1^g, a fulcrum post 1^h for the vender lever 4, and a suitably mounted magnet 1^u; the coin-chute 1^i, which is a channeled plate with a somewhat shorter cover plate 1^j, both let into the face plate and having marginal slots adjacent thereto for the slot-gage; a change hopper 1^m; a change gage block 1^n which contains an opening in which the end of the hopper is steadied and which also forms a change-coin-passage 1^o; a coin-sorter 1^p, formed with two pairs of rabbets or guides respectively 1^q for price-coins, which they divert into the hopper and the other 1^r for large coins, which they deflect into a suitable bin; a switch chute, 1^s to convey rejected coins to the change-pan; a partition 1^v which incloses the lower part of the change-giver; a fulcrum post 1^w; a sway brace 1^x to steady the hopper 1^m, and a guide-plate 1^y for the slot-gage.

The slot-gage 2 is a slotted plate formed with a price-coin gage 2^a, the width of the price-coin and a sign 2^b ("Cents only"), is suspended by a gage spring 2^c and its lower end rests on one end of a lever 2^d fulcrumed on the change block 1^n and whose other end is formed into a finger 2^e, which plays beneath or into the hopper 1^m. The weight of the number of change coins C due for once giving change, extrudes the finger 2^e from the hopper 1^m, rocks the lever 2^d and lifts the gage 2 so that its sign 2^p is concealed and its wide slot envelops the change slot 1^a, and large coins can be received; but if there be fewer change coins in the hopper, the unsupported weight of the gage 2 depresses the lever 2^d, lifts such coins, and descends so that its price-coin slot 2^a so narrows the coin-slot 1^a that price-coins only can be received and the sign 2^b registers with and can be read through the sign slot 1^b.

The slide is in two parts, namely, the motive slide 3 and the driven slide 3^a, the latter operative only when and by means

of a coin located between said slides. The motive slide 3 comprises a plate 30 mounted in the slideway adjacent to the face-wall of the case, terminating inwardly in a V-shaped socket with beveled lower edges 31, and fast to a stem 32 which extends through the ferrule 1^e, terminates in a knob 33 and has a shoulder between which and the case a retracting spring 34 is strained. A bell-crank wiper, centrally pivoted in the plate 32, has a slotted arm 36 whose slot engages a fixed pin 11 and a wiper arm 35.

If an iron disk or washer be fed into the machine, the magnet 1^u attracts and lifts it into the path of the wiper arm 35 and when the motive slide is advanced the engagement of the wiper slot with the pin 11 causes the wiper arm 35 to wipe the iron off the magnet so that it will fall into the general bin and not cause the machine to deliver either goods or coins. The vender lever 4 is a bell crank pivoted on the post 1^h, has an arm 41 which extends over the driven slide 3^a and a slotted arm 42 operably connected, through a link 43 with the vender mechanism, to operate it when the driven slide is moved by means of a coin.

The driven slide 3^a comprises a plate 3^b mounted in the slide-way 1^f, and the same plane with the motive slide, terminating inwardly in a V-socket like that of the motive slide and with similarly beveled edges 3^c, terminating outwardly in an offset abutment head 3^d which plays in the socket 1^g, and strains a feed spring 3^e therein, contains a slot 3^f for the change lever 60 and, by means of suitable forks 3^g, pivotally mounts a compound lever comprised of a slotted primary lever 3^h and a secondary bell-crank 3^m, both fulcrumed on the same pin. The lever 3^h contains a slot 3^i and is upheld by a spring 3^j, in initial strain sufficient to cause the operation of the vender mechanism under normal conditions. One arm of the bell-crank 3^m operates the vender lever 4, and its other arm is normally strained against the primary lever 3^h by a spring 3^n. A switch plate 5 is located immediately beneath and between the slides 3 and 3^a, is pivotally mounted on suitable conformations of the slide-way and is normally held horizontal by the engagement of its crank-pin 51, with the slot 3^i of the primary lever 3^h. A coin put in the coin-slot 1^a descends the chute and falls on the switch plate, in line with and between the slides 3 and 3^a. The motive slide 3 is then pushed in, contacts with the coin, and shoves it against the driven slide, which is thus pushed back and brings the vertical arm of the bell-crank 3^m against the vender lever 4; and if the vending mechanism works properly swings said lever and operates said mechanism. The other arm of the bell-crank presses on and tends to depress the primary lever 3^h, which, upheld by the spring 3^j, holds the switch plate horizontal unless the vending mechanism is out of order; in which case the increased resistance of the vender lever 4 causes the bell crank to compress the spring 3^j and depress the primary lever 3^h, whose slot 3^i coacting with the switch crank 51, tips the switch plate 5 and dumps the coin into the switch-chute 1^s. The stroke of the arm 41 of the lever 4 is less than that of the driven slide and bell-crank 3^m, which therefore passes said arm; and on the return stroke the bell crank is swung by contact with said arm and latched therewith by the spring 3^n.

The change mechanism 6 comprises a lever 60 pivoted on the post 1^w, extending its short end through the slot 3^f of the driven slide 3^a, terminating in forks 61 in line with the change block 1^a, and retracted by a spring 62; and a box-like change gage 6^a, provided with a draft-pin 6^b which engages the forks 61, location flanges 6^c and between them a broom-shaped slot whose narrow anterior part 6^d accommodates the finger 2^e when the knife is retracted,—at which time the wide part of the flanges 6^c to each side uphold change-coins in the hopper,—and whose wide posterior part 6^e permits the descent of change coins when the knife is advanced; and in the upper face, about the end of the hopper 1^m, and over the interior narrow portion 6^d of the broom shaped slot, a hole 6^f whose posterior margin is a knife 6^g whose distance from the bottom flanges 6^c equals the aggregate thickness of the numbers of change coins to be given as change and which when the gage is advanced, separates the right number of coins from those in the hopper. When the gage is advanced, the knife 6^g retains in the hopper all the change coins not separated for change; and when it is retracted, the coins descend and rest upon and are retained in the hopper by the gage flanges 6^c. Therefore only the due number of coins can be given as change. When a price coin is slipped into the coin slot 1^a it descends the chute 1^i and falls on the switch plate 5; and the motive slide 3 is pushed in.

As shown in Fig. 1, the thickness of a price-coin is less than that of the slide plates 30 and 3^b, its diameter is less than their opening and its play between them is increased by the bevels of their edges, 31 and 3^c; and this play is so great that when the motive slide 3 is fully advanced the driven slide 3^a does not operate the change lever 60 and mechanism 6. Pushing in the slides operates the vender lever 4 if the machine is in working order; and if not the switch plate 5 is tipped and the coin dumped into the switch chute 1^s and change pan 1^c, as above described.

If the vender lever can be swung, the motive slide 3 shoves the coin off the switch

plate and it falls upon the inward rabbets 1^q of the sorter 1^p. The machine illustrated gives price coins (cents) in change for larger (five cent) coins, and the price coins are directed into the hopper 1^m by a finger 1^z, to be subsequently given as change. But if the change coins were different from the price coins the latter would fall into the common bin. When a large coin is put in, it likewise falls upon the switch plate, but it and the slide plates are of substantially equal thickness and their opening is as nearly as may be equal to its diameter, so that it has no unnecessary play between them; and when the motive-slide 3 is pushed in, the large coin (if it be not switched to the change-pan) moves the driven slide its full stroke, it swings the change lever 60 and advances the change gage 6^a, whose knife, 6^g separates from the change-coin in the hopper the number due for change while the wide end 6^e of its slot permits them to fall into the change pan. The large coin falls on and slides down the outer rabbets 1^r of the sorter and goes to the bin. If there be not change in the hopper the slot gage 2 prevents the receipt of a large coin, as above described.

I claim as new and desire to protect by Letters Patent:

1. In combination with a case having a coin-entry and coin-delivery, and with therein-contained mechanical vending apparatus, a change-giving apparatus comprising a change-coin container, a change-giving mechanism adapted to separate from the change-coins in said container the number due as change and cause them to be advanced to said delivery, a manually-operable motive slide, a driven slide adapted to be operated, by means of an interposed coin, from said motive slide and to cause the operation of said vending and change-giving mechanisms, and a coin-switch operably related with said motive slide, driven slide and vending apparatus, and normally inoperable but when normal operation of said vending apparatus is interrupted, operable to divert coin from between said motive slide and driven slide, to said delivery.

2. A change-giving apparatus adapted to be operably related with coin-actuated mechanical vending apparatus and comprising a case, an entry for coins, a container and a delivery for change-coins, a change-giving mechanism adapted to separate from the change-coins in said container the number due as change and cause them to be advanced to said delivery, a manually-operable motive slide, a driven slide adapted to be operated, by means of an interposed coin, from said motive slide and to cause the operation of said vending apparatus and change-giving mechanism, and a gage operably related with change-coins in said container and with said entry and adapted to be positioned in consonance with the number of such coins therein, to leave said entry free or to narrow it to fit price coins and exclude larger ones.

3. In combination with a case having a coin-entry and coin-delivery, and with therein-contained mechanical vending apparatus, a change-giving apparatus comprising a change-coin container, a change-giving mechanism adapted to separate from the change-coins in said container the number due as change and cause them to be advanced to said delivery, a manually-operable motive slide, a driven slide adapted to be operated, by means of an interposed coin, from said motive slide and to cause the operation of such vending and of said change-giving mechanism, and a coin-sorter comprising two pairs of guides, one adapted to guide price coin into said container and the other to divert larger coin therefrom.

4. In combination with a case having a coin-entry and coin-delivery, and with therein-contained mechanical vending apparatus, a change-giving apparatus comprising a change-coin container, a coin-sorter adapted to guide price-coins into and divert larger coins away from said container, a change-giving mechanism adapted to separate from the price-coins in said container the number due as change and cause them to be advanced to said delivery, a manually operable motive slide, a driven slide adapted to be operated from said motive slide by means of an interposed coin, and on one of said last named two members a work-graduating terminal conformation adapted, when said members coact with a coin, to graduate, proportionally to the dimensions thereof, the stroke of said driven slide transmission to operate said vending apparatus only for a price coin and both said vending apparatus and change-giving mechanism for a larger coin.

5. A change-giving apparatus adapted to be operably connected with a mechanical vending mechanism and comprising a case containing a coin-slot, a coin chute adapted to permit coins to advance to functioning location, a substantially vertical hopper and a delivery for change-coins, a change-giver comprising a lever and a change-gage adapted to separate from the change-coins in said hopper the number due as change and cause them to be advanced to said delivery, a motive slide and a handle suitably located for manual operation, a driven slide operably related with said motive slide and change-giver, and a vender-operating member operably connecting said driven slide and vender, and on one of said slides a work-graduating conformation adapted, when said members coact with a coin, to graduate, proportionally to the dimensions thereof,

the stroke of said driven slide to operate said vending apparatus only for a price coin and both said vending apparatus and change giving mechanism for a larger coin.

6. A change-giving appliance for mechanical venders, a case having a coin-slot for the entry of coins, a container for change coins, a lever operably located relatively thereto and adapted to coact with change-coins therein, adjacent to said slot a slot-gage operably connected with said lever, said lever having an arm that normally extends into the lower end of said container when said container does not contain the requisite change-coins, thereby to narrow said slot to fit price-coins and exclude larger ones, said lever being pressed down out of said container by the weight of the coins when the requisite number of change-coins are contained in said container thereby to raise said slot-gage to leave said slot free to admit larger coins.

7. In a change-giving appliance for mechanical venders, a case having a coin-slot for the entry of coins and a sign-slot for displaying a sign, a container for change-coins, a lever operably located relatively thereto and adapted to coact with change-coins therein, adjacent to said slots a slot-gage operably connected with said lever and adapted to be thereby positioned in consonance with the presence in or absence from said container of the number of change-coins due in once giving change, to leave said slot free and to narrow it to fit price-coins and exclude larger ones, and a sign on said gage readable through said sign-slot when said coin-slot is narrowed as aforesaid, but at other times invisible.

8. In combination with a case having a coin entry and with therein-contained mechanical vender mechanism, a slideway, a vender-operating member adapted to be operably connected with such vender mechanism, a motive slide, a driven slide, a lever mounted on said driven slide and adapted to operate said vender-operating member, an initially-strained spring adapted to unyieldingly support the reaction of said lever due to operating said member under normal conditions and when the resistance of said member is abnormal, to yield and permit said lever to swing on its fulcrum, and a coin switch plate operably related to said slides and lever, and adapted, when said lever operates said vender-operating member, to support a coin between said slides and when said lever swings, to be moved thereby and to dump said coin.

9. In combination with a case having a coin entry and with therein-contained mechanical vender mechanism, a slideway, a vender-operating member adapted to be operably connected with such vender mechanism, a motive slide, a driven slide, a lever mounted on said driven slide and adapted to operate said vender-operating member, an initially-strained spring adapted to unyieldingly support the reaction of said lever due to operating said member under normal conditions and when the resistance of said member is abnormal, to yield and permit said lever to swing on its fulcrum, and a coin switch comprising a pivotally-mounted plate and a crank thereon engaging said lever, normally positioning said plate in a plane located parallel with and immediately beneath said slides, and when said lever is swung, movable with it to tip said plate.

10. In combination with a case having coin entry and with therein-contained mechanical vender mechanism, a slideway, a vender-operating member adapted to be operably connected with such vender mechanism, a motive slide, a driven slide, and fulcrumed thereon a compound lever comprising a primary and a secondary lever on a common axis, a spring strained between said levers, an initially strained spring between said driven slide and primary lever adapted to unyieldingly support the normal reaction of the latter and to yield to abnormal ones and permit the said lever to swing, said secondary lever coacting by one arm with said vender-operating member and abutting by the other arm upon said primary lever.

11. In combination with a case having a coin entry and with therein-contained mechanical vender mechanism, a slideway, a change-delivery, a rejected-coin chute operably related thereto, a vender-operating member adapted to be operably connected with such vender mechanism, a motive slide, a driven slide, a lever mounted on said driven slide and adapted to operate said vender-operating member, an initially-strained spring adapted to unyieldingly support the reaction of said lever due to operating said member under normal conditions and when the resistance of said member is abnormal to yield and permit said lever to swing on its fulcrum, and a coin switch operably related to said slides and lever and adapted, when said lever operates said member, to support a coin between said slides and when said lever swings to be moved thereby and to dump said coin into said rejected-coin chute and change-delivery.

12. In combination with a vending machine, means for operating said vending machine to deliver an article of merchandise therefrom, of a change-giver comprising, a change-gage adapted to coact with change coins in a change-coin container and comprising a rectangular tubular structure slidably mounted at the outlet of and adapted to retain coins in said container, a coin-passage in the upper wall of said gage, offset therefrom a coin passage in its lower wall, a knife-edge formed at one side of said upper pas-

sage, and spaced from such lower wall a distance equal to the aggregate thickness of the number of change-coins due for and given in change, and means to reciprocate said change-gage.

13. In combination with a vending machine, means for operating said vending machine to deliver an article of merchandise therefrom, of a change-giver comprising a case, a container for change-coins, a coin entry, a change giver, operating means adapted to co-act with price-coins to operate a vender mechanism and with large coins to do the same and also to operate said change-giver, and fixed to said container a coin-sorter comprising widely and less widely spaced parallel guides adapted respectively to move wide coins over and guide price coins into the inlet of said container.

14. A change-giving apparatus comprising a case, an entry for coins, a container and a delivery for change-coins, a change-giving mechanism adapted to separate from the change-coins in said container the number due as change and cause them to be advanced to said delivery, a manually-operable motive slide, a driven slide adapted to be operated, by means of an interposed coin, from said motive slide and to cause the operation of said change-giving mechanism, and a gage operably related with change-coins in said container and with said entry and adapted to be positioned in consonance with the number of such coins therein, to leave said entry free or to narrow it to fit price coins and exclude larger ones.

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