Sept. 4, 1934. W. S. JOHNSON 1,972,449

AUTOMATIC ELECTRIC TICKET INDICATOR

Original Filed Nov. 15, 1930 3 Sheets-Sheet 1

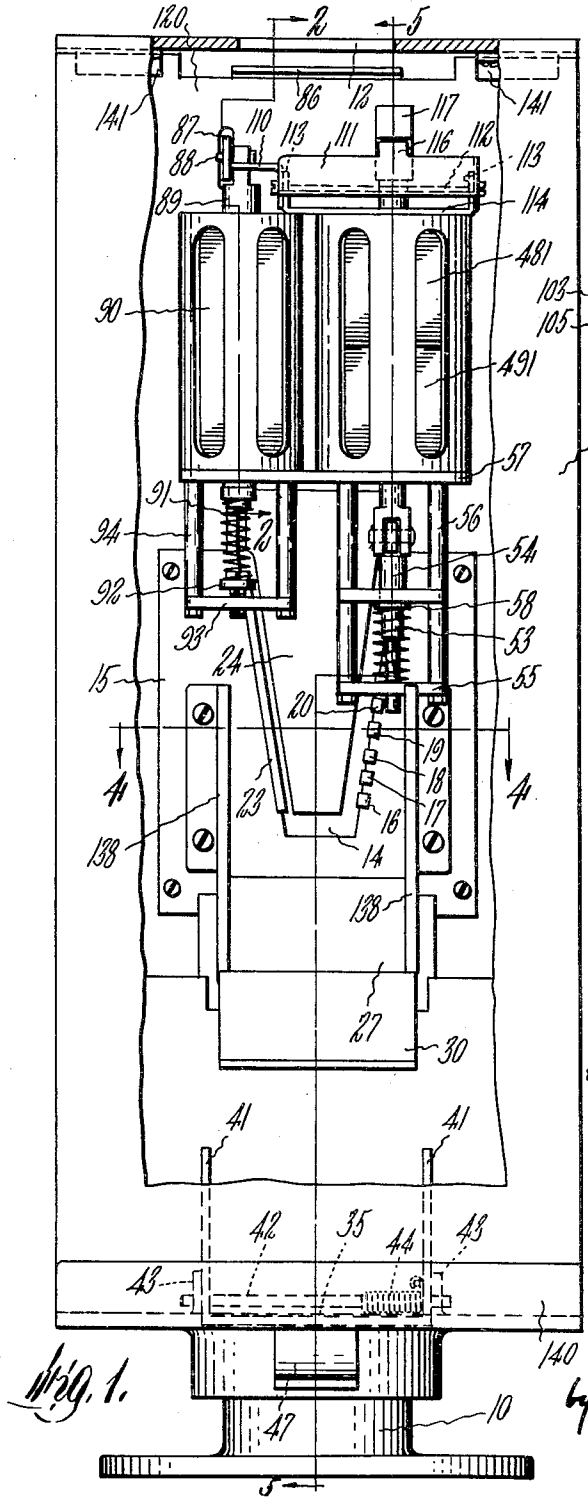


Fig. 1.

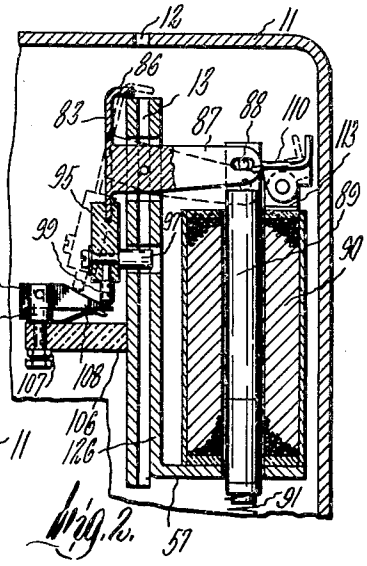


Fig. 2.

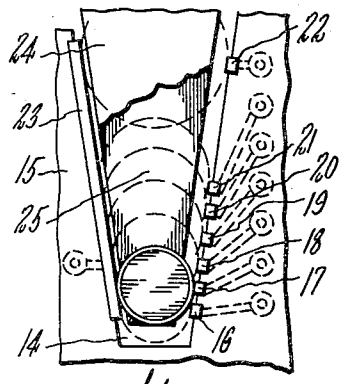


Fig. 3.

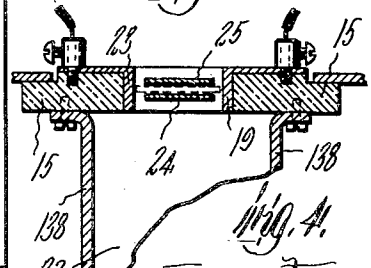


Fig. 4.

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AUTOMATIC ELECTRIC TICKET INDICATOR

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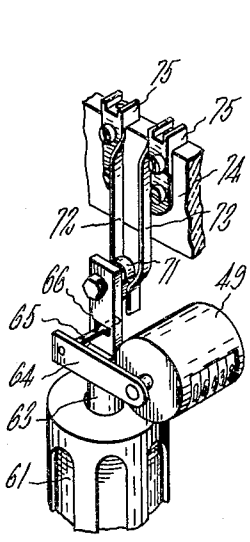


Fig. 6.

Fig. 5.

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AUTOMATIC ELECTRIC TICKET INDICATOR

Original Filed Nov. 15, 1930 3 Sheets-Sheet 3

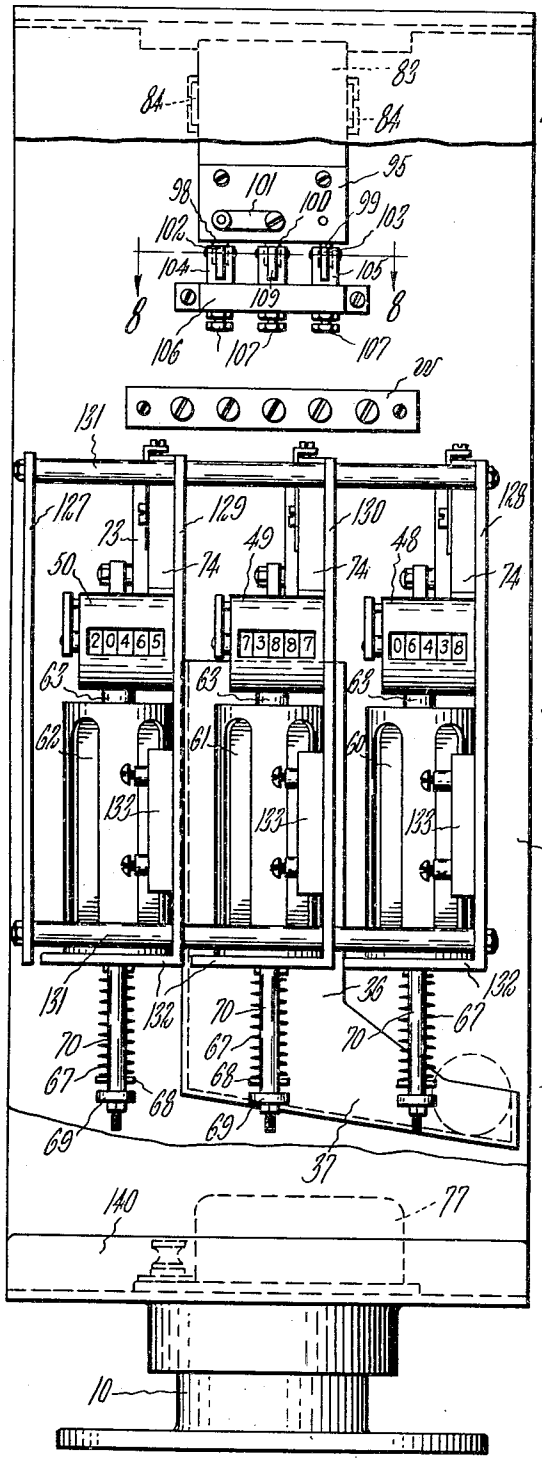


Fig. 7.

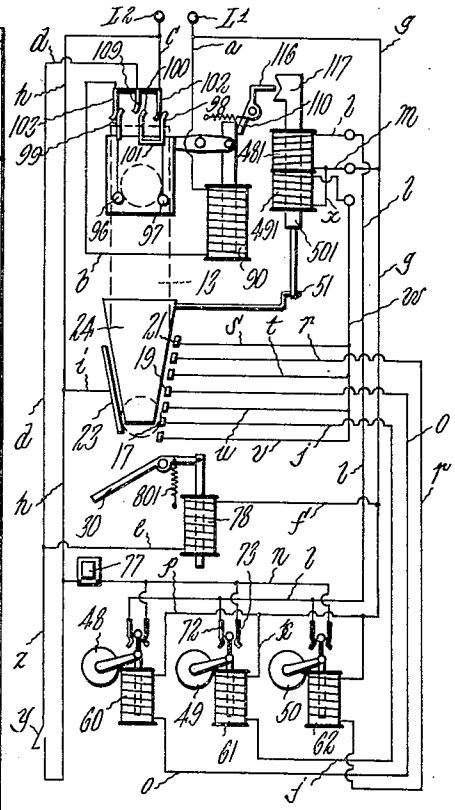


Fig. 9.

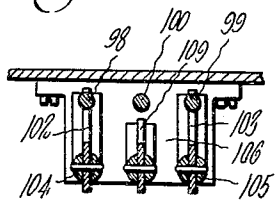


Fig. 8.

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Patented Sept. 4, 1934 1,972,449

UNITED STATES PATENT OFFICE

1,972,449

AUTOMATIC ELECTRIC TICKET INDICATOR

Walter S. Johnson, Providence, R. I., assignor to Money-Meters, Inc., Detroit, Mich., a corporation of Michigan

Application November 15, 1930, Serial No. 496,019
Renewed February 3, 1934

12 Claims. (Cl. 194—6)

The present invention relates to machines for receiving, indicating the receipt of, and registering, coins, tokens, tickets and other objects differing from one another in some physical characteristic and in conventional or arbitrary value, all comprehensively designated for the purpose of this description as tickets. In thus using the term "ticket", I have intended to employ a brief generic term to designate any one of a number of different articles which may be used as a medium of payment, such as for transportation in public conveyances, admission to places of amusement, and the like; and which have physical characteristics adapting them to serve automatically to indicate and register distinctively tickets of different categories. Within this definition of ticket, I include coins of recognized monetary systems having accepted legal and conventional values, as well as special disks or plaques provided for special purposes and having arbitrary values.

It is the object of the invention to provide an apparatus capable of receiving a more or less wide range of differently valued tickets and of automatically registering and/or indicating distinctively, by electrical means, the numbers of differently valued tickets received. A further object is to enable objects of different classes to be directed to different depositories, as to direct to one destination the tickets acceptable in payment of the service or commodity sold, and to discard those articles which may pass the entrance of the machine but are not acceptable. Another object is to retain in the view of the attendant the ticket of acceptable character last deposited until deposit subsequently of another ticket. All these results are accomplished by electrical means.

In putting these objects into effect I utilize the deposited objects to close electric circuits, and take advantage of the fact that coins and analogous tokens are of electrically conductive material and those of different values are made with different diameters. Consequently the embodiment of the invention herein disclosed provides a space for reception of the deposited tickets having arresting means adapted to stop the tickets of different sizes in different positions, and in contact with the terminals of different electric circuits, the ticket itself being used as a bridging conductor to complete the circuit between the terminals in contact with which it lodges. It is within my contemplation, however, to utilize the deposited articles to complete the electric circuits otherwise than by conduction through their own substance, and to depend on other differences than of diameter or width (such as thickness or weight, for instance,) to effect the desired discrimination between different articles.

In the drawings,—

Fig. 1 is a front elevation of a machine embodying the invention representing the casing as being partly broken away and showing the interior working parts;

Fig. 2 is a detail vertical section on line 2—2 of Fig. 1;

Fig. 3 is an elevation of the selective arrester detached from other parts of the machine, showing its mode of cooperation with deposited tickets and electric circuits;

Fig. 4 is a detail horizontal section on line 4—4 of Fig. 1;

Fig. 5 is a vertical longitudinal section of the entire machine taken on line 5—5 of Fig. 1;

Fig. 6 is a perspective view showing in detail one of the registers, its actuating solenoid, and a circuit closer operated thereby;

Fig. 7 is a rear elevation of the machine with the casing broken away;

Fig. 8 is a detail horizontal section on line 8—8 of Fig. 7;

Fig. 9 is a diagram of electrical apparatus and circuits illustrating the principles of the electrical equipment employed in this machine.

Like reference characters designate the same parts wherever they occur in all the figures.

The part 10 represents a standard, base or pedestal of any suitable character on which the machine is supported. Supported on this standard and enclosing the working parts of the machine is a casing 11 in an upper part of which, preferably the top wall, is a slot 12 into which the articles to be indicated or registered are dropped.

In registering alinement with the slot 12 is a passage or chute 13 which extends downward and discharges into an open space 14 bounded by side walls of such varied spacing between them at different points in their height as to arrest tickets of different dimensions in respectively different positions.

In the present illustration the space or cavity 14 is a V-shaped notch formed in a plate 15 of insulating material, which notch is open at top, front and back. Its converging opposite sides are therefore adapted to arrest coins and other tickets of different diameters or widths at different heights. Where, as in this case, the tickets received are of electrically conductive material adapted to complete electric circuits by bridging

gaps between terminal contacts, the arresting locations are faced by blocks 16, 17, 18, 19, 20, 21 and 22 of suitable conducting metal set into the inclined wall at one side of the notch and cooperating with a continuous strip 23 of conductive metal set into and lining the opposite side of the notch. According to the specific arrangement shown in Fig. 3, the contact 22 is set to arrest a fifty cent piece while allowing smaller disks and the like to pass; the contact 21 to arrest a twenty-five cent piece; contact 20 a piece smaller than a quarter dollar and larger than a nickel five cent piece; the contact 19 to arrest a nickel; contact 18 a one cent piece; contact 17 a dime; and contact 16 a disk smaller than a dime. These specific values are not limiting of course, but illustrate the principle according to which different tickets may be caused to operate different indicators and to effect other results.

There is located in the space 14 a combined guide and displacer composed of parallel plates 24 and 25 pivoted on an axis 26 at the bottom of the chute 13 and suitably secured together but with a space between them ample to receive any coin or ticket which may pass through slot 12 and chute 13. These plates at their side edges are clear of the bounding walls of the space 14 and are entirely separate from one another at their sides within the range of the notch so as to permit protrusion of the coin from between them into engagement with the sides of the notch. The displacer is movable, as shown by broken lines in Fig. 5, either to front or rear of its neutral position, which is shown by solid lines in that figure, so as to displace the arrested articles from the notch and cause them to pass onward into one or the other of two destinations. The displacer has a two fold purpose; one to remove the arrested coins and leave room for others in the measuring space, and the other to discriminate between coins or tickets which are acceptable and those which are not. Acceptable tickets are thrown forward by the displacer and allowed to fall on an inclined deflector 27 which guides them to an inspection chamber 28 in which each accepted ticket is retained in view of the attendant until the next ticket is deposited.

The inspection chamber is formed between the inclined top wall 29 of a forward extension at the lower part of the case, a movable bottom wall or trap 30 spaced apart below wall 29, and side walls 31 which extend from wall 29 substantially across the space toward the bottom wall 30 and frame all sides of the chamber 28 except the entrance at the upper and rear end of the chamber. Such chamber and its entrance are of course wide enough to receive the widest tickets admitted by the entrance slot 12. The portion of the wall which overlies the inspection chamber is cut out to form a window, which is covered by a transparent pane 32 secured between an overlying flange of the casing wall and the underlying attached side walls 31. The bottom wall of the chamber is pivoted to the frame on an axle rod 33 by means of lugs 34 so that it may be moved from the full line position shown in Fig. 5, where it lies so near to the side walls 31 as to prevent escape of even the thinnest tickets received in the chamber, to a separated position as indicated in broken lines, where it permits the tickets to escape and fall into a receptacle or box 35.

Rejected articles are moved to the rear by the displacer and allowed to pass into a receptacle 36, the front and rear walls of which converge to form a narrow runway 37 extending toward one side of the machine, as shown in Fig. 7, and open at the top so that the rejected articles may be reached by the attendant through an opening in the side of the casing, and so removed.

It may be noted in passing that the box 35 is formed in part by the stationary lower front wall 38 of the casing and a separated stationary upright plate 39 of the interior framework, and in part by a movable section 40 of the casing bottom and separated side walls 41 connected structurally with the section 40. The movable part of this box is pivoted by a pin 42, held in lugs 43 of the stationary bottom, and is normally held in receiving position by a spring 44, coiled around the pin and pressing at one end against a shoulder 45 of the pivoted bottom and reacting on an anchorage 46 on the stationary wall 39. A hook 47 projecting from below the pivoted bottom allows the box to be opened, as shown by broken lines in Fig. 5, for collection of tickets by the attendant.

Registers or counters 48, 49, 50, and more if desired, are provided for separately registering tickets of different dimensions. In this illustration the three counters shown are appropriated to register five cent pieces, dimes and quarter dollars respectively. All are alike and are operated by like means, and it involves only a duplication of the counters and operating means here shown to provide for registering separately the entire range of coins and tickets described above. But for illustration of the principle of selection between acceptacle and nonacceptable tickets, it is here assumed that the nickels, dimes and quarters only are accepted and registered, and that all other received articles are rejected. The electrical lay-out which will be later described is arranged on that assumption, but in the understanding that other arrangements, connections and combinations may be made within the scope of this invention.

The displacer, registers, and the movable bottom wall 30 or trap door of the inspection chamber, are all operated by electric solenoids. Two axially alined solenoids 481 and 491 operate the displacer by means of a single core rod 501 which is connected with the arm 51, projecting forwardly from the upper end of the deflector, by means of a pin and slot connection at 52 which permits straight line movement of the core rod and angular movement of the arm 51. This core rod is supported in its neutral position by a spring 53 acting through a plunger 54 and reacting against the bottom cross bar 55 of a frame 56 which depends from the shelf 57 on which the associated solenoids 481, 491 are supported. The core rests on the upper end of plunger 54, which is guided by the cross bars of frame 56 and is stopped as to its upward movement by its shoulder 58 underlying the upper cross bar of the framework. The upper solenoid 481 raises core 501 to move the displacer into its forward position, and the lower solenoid depresses the core to shift the displacer into its rear position.

Solenoids 60, 61 and 62 operate the registers 48, 49 and 50 respectively. Each of such solenoids has a core 63 coupled to the operating arm 64 of the register by a pin and slot conection consisting of pin 65 on the arm entering a transverse slot 66 in an extension of the core, as shown best in Fig. 6. The core is normally held in an elevated position by a spring 67 reacting on an adjustable abutment 68 which is screw threaded through a cross bar 69 suspended by rods 70 from

the structure on which the solenoid is mounted. The effect of electromagnetic force generated in the solenoid is to depress the core from its elevated position and swing arm 64 through a distance sufficient to move the lowest order indicator of the register through a unit angle.

The core extension carries one member of a circuit closer, in the form of a block or roll 71 cooperating with spring strips 72 and 73 of conducting material which are separately connected with parts of an electric circuit. The block or roll 71 is mounted on a stud passing through the extension of solenoid core 63 and insulated therefrom in a well known manner by washers and bushings of nonconducting material. The spring strips 72 and 73 are mounted independently on a block 74 of insulating material and are engaged with clips 75, in the upper ends of which are recesses to receive conductor wires and binding screws 76. Said contact strips are spaced clear of the block 71 at the position occupied by the block when solenoid core 63 is raised, but below that position the strips are bent inward, as shown partially in Fig. 6 and by dotted lines in Fig. 5, in such fashion that both are engaged by the block when the core is pulled down. The circuit thus closed includes a signal device 77 (Figs. 7 and 9) which in this illustration is a buzzer, whereby an audible signal is made whenever the register is operated.

The registers here shown are counters of a well known character comprising a series of number bearing disks arranged side by side coaxially, connected with one another by carrying mechanisms, and of which the disk of lowest order is driven by the oscillative arm 64 by any suitable ratchet device. This register, however, is typical of a wide variety of registering or recording or indicating means which might be used to obtain similar, or other desired, effects.

A solenoid 78 operates the bottom wall or trap door 30 of the observation chamber. Its core 79, which normally protrudes from the bottom of the solenoid under the influence of gravity, carries a knuckle 80 of nonmagnetic material on its upper end above the solenoid. This knuckle is coupled by a wrist pin 81 with a rearward extension 82 of the plate 30. The bottom of the knuckle 80 bears on the top of the solenoid casing forming a stop which limits descent of the core and rise of the plate 30. It is pulled down by a spring 801.

A plate 83 is pivoted at the rear of the chute 13 near the upper end of the latter and is provided with ears 84 connected by alined pivots 85 with the chute at opposite sides of the passage therein. The upper edge of this plate is bent over toward the chute and above it, forming a shield or stop 86 which normally lies clear of the passage in the chute, as shown by full lines in Figs. 2 and 5, but may be moved across the entrance of the passage as shown by broken lines in Fig. 2. It is coupled by an extension 87 of one of its supporting lugs, by means of a pin and slot connection 88, with the upwardly protruding end of the core 89 of a solenoid 90. The lower end of this core is of nonmagnetic material and is supported by a spring 91, (Fig. 1) reacting on an adjustable abutment 92 threaded into a cross bar 93 which is suspended by bars 94 from the solenoid support. This spring normally holds the core elevated and the shield retracted, as shown by full lines in the drawings, and the core is pulled downward by magnetic force when the solenoid is energized, shifting the shield and plate 83 into the dotted line position shown in Fig. 2.

A block 95 of insulating material is secured to the lower edge of plate 83 and carries two separated studs 96 (Fig. 5) and 97 (Fig. 2) which cross the coin passage out of contact with the walls thereof. These studs are nearer together than the width of any ticket contemplated to be registered by the machine, whereby they arrest any such ticket and compel the ticket to engage both of them, completing the circuits of which these studs are separated parts, as will be later described. But when the plate 83 is displaced and tilted the studs are withdrawn from the passage, allowing the arrested ticket to pass onward; and at the same time the shield covers the entrance of the passage and prevents admission of another article until the one just released has been displaced from the arresting cavity 14.

Stud 96 is connected electrically with a finger 98 which protrudes from the bottom of the block 95, and stud 97 is similarly connected with a parallel protruding finger 99. A third, and intermediate, finger 100 (Figs. 7 and 8) similarly protrudes and is electrically connected with the stud 96 by a conducting strap 101, but not with the stud 97.

The outermost fingers 98 and 99 are in continuous sliding contact with the curved upper edges of contact blades 102 and 103 respectively. These blades are pivoted and electrically connected to posts 104 and 105 which are mounted in a shelf 106 of insulating material and have binding nuts 107 on their protruding shanks for connection with conductor wires. The contact edges of these blades are curved to conform with the paths traversed by the outer ends of the fingers 98 and 99. They are pivoted to their supporting posts and pressed upward by springs 108 in order to insure good electrical contact after extended use and wear.

A third contact blade 109 is provided to cooperate with the contact finger 100. It is like the blade 102, 103 except that it is shorter and is not brought into contact with finger 100 until the fingers have been displaced with the carrier block 95 and connected studs to approximately the dotted line position in Fig. 2.

When these parts, including the entrance shield or obstructor 86, have been thus displaced, they are held there by a latch 110 (Figs. 1 and 2) overlapping a shoulder on the end of solenoid core 89. Said latch is formed as a lug projecting from one end of a metal plate 111 which has parallel end lugs connected by a pivot rod 112 with lugs 113 rising from a base plate 114 secured to the casing of solenoid 481. A spring 115 surrounds the pivot rod 112 and one end presses upward on the bottom edge of plate 111, while its other end reacts on the bed plate 114, thus pressing the latch lug constantly against the side of the projecting core 89 and causing it to snap over the end of the core whenever the latter is depressed.

A cam follower lug 116 projects rearwardly from the center of latch plate 111 into the angle of a V notched cam 117 which projects above solenoid 481 from core 501. Either rise or descent of the cam is effective to engage the follower lug and release the latch lug 110 from core 89.

I will now describe the operation of the machine and at the same time complete the description of electrical equipment with reference to Fig. 9. When a ticket or other article of elec-

trically conductive substance is passed into the slot 12 it drops through the chute 13 until arrested by the studs 96, 97. The article electrically bridges the gap between these studs and completes the circuit between the power line terminals L' and L^2 through the conductor *a*, solenoid 90, conductor *b*, which leads from the solenoid to contact blade 103, and conductor *c* which leads to blade 102 from the power terminal L^2. Solenoid 90 is then made active and withdraws the arresting studs, allowing the article to pass onward, and at the same time temporarily blocks the entrance to the coin passage by means of shield 86. Latch 110 then comes into action, and holds the parts thus displaced after the circuit has been broken by withdrawal of the studs from the ticket.

Displacement of these parts brings the finger 100 into contact with blade 109, completing a circuit between the power line terminals through contacts 102, 98, conductor 101, contacts 100, 109, conductor *d*, conductor *e*, the winding of solenoid 78 and conductors *f* and *g*. This causes solenoid 78 to lower the bottom plate 30 of the observation chamber, permitting a ticket which may have been already in said chamber to pass to the receptacle 35.

The article released by withdrawal of studs 96 and 97 drops into the measuring cavity 14 and is arrested by the side walls thereof. Let us assume for example that the article is a dime. When arrested it lodges against the contact block 17 on one side of the cavity and the contact strip 23 on the other, completing a circuit through conductors *h*, *i*, *j*, solenoid winding 61, and conductors *k* and *g* between the power line terminals. By the motivation of solenoid 61, so produced, counter 49 is caused to register another unit, and at the same time the circuit between one of the pairs of contact springs 72, 73, is closed to actuate solenoid 481 and also the buzzer, or other signal device, 77. The contact strip 72 of each pair is connected to a conductor *l* which leads to one terminal of solenoid winding 481, the other terminal of which is connected through conductors *m* and *g* with power line L'. The other contact 73 of each pair is connected to the conductor *n*, which leads to one terminal of the signal 77, whose terminal is connected with the conductor *h*. Motivation of solenoid 481 raises its core 501 and moves displacer 24 forwardly, removing the coin from the measuring cavity and allowing it to pass to the observation chamber, where it remains until the next article is inserted into the slot, unless released by closing of the manual switch presently to be described. The same rise of solenoid core 501 has meanwhile released latch 110 through the action of the lower face of the V cam 117, with restoration of the slot shield 86 and arresting studs 96, 97, to normal position ready for reception of the coin which has just been forwarded by the displacer.

If the deposited article is a five cent piece it lodges against contact 19 and operates solenoid 60 through conductor *o* leading to the solenoid, and conductor *p* which connects the other terminal of the solenoid winding with the conductor *g*. If the deposited article is a quarter dollar it lodges against the contact 21 and actuates solenoid 62 through conductor *r* to which one terminal of the winding of this solenoid is connected, the other terminal being connected directly to conductor *g*. With the operation of either solenoid 60 or 62 the solenoid 481 and signal 77 are operated in exactly the same way as previously described.

Articles of other widths than the coins above mentioned lodge against others of the contact blocks. For the purpose of this explanation it is assumed that all such other articles are not acceptable for registration, wherefore their complemental contact blocks are shown as being coupled by conductors *s*, *t*, *u* and *v* with a single conductor *w* which leads to the solenoid winding 491, the latter being further connected by a conductor *x* with the conductor *m*. Thus any of such other articles complete circuits which cause actuation of the solenoid 491 with descent of core 501 and movement of the displacer to the rear which releases the article to the discharge conduit 36, 37.

A manual switch *y* is provided to operate solenoid 78 in order to release the ticket in the observation chamber at will, in order, for instance, to collect the last ticket deposited up to the end of a business period. This switch is interposed between an extension of the conductor *h* and a conductor *z* which is joined to the conductor *e* leading from the solenoid winding.

It is to be understood that the circuit closing contacts of the measuring cavity may be connected electrically in any desired sequence and numbers with independent registers or other signals, and that any one or more of such contacts may be connected with the rejection solenoid 491 and spaced away from the opposite wall of the cavity at appropriate distances to arrest all articles except those which the machine is equipped to accept. It is also within my contemplation to utilize other properties of the inserted articles than electrical conductivity and dimensions in order to close appropriate circuits. I may apply the weight of such articles, whether of conductive or nonconductive material, to operate circuit closers in the appropriate circuits, and discriminate between different objects by a difference of dimension or a difference of weight.

It will also be understood that the register operating solenoids may be used to actuate separate signals, of visual as well as audible character, and located anywhere, inside or outside of the casing instead of the specific buzzer 77 herein described; or that in place of the registers and their solenoids, other electrical devices may be substituted in the corresponding circuits.

I will describe in further detail the mechanical structure of the specific machine here illustrated, for the convenience of the artisan but without intending to limit my protection specifically thereto.

A central frame plate 120 rises from the base plate 121, being secured at its bottom to the upturned edge flange 122 of the plate 123 secured to the bottom plate, and being braced by horizontal spacer bars 124 crossing to the previously named wall 39, which is a plate secured at its bottom to an upturned flange 125 at the opposite edge of plate 123. The central plate 120 is cut out at its middle part to receive the piece of insulation 15 by which the measuring cavity is defined. The upper part of plate 120 forms the rear wall of the chute or passage 13. The front wall of this passage is formed by a plate 126 spaced apart by narrow strips which define the side boundaries of the passage. Plate 126 is bent forward at its lower part to provide the shelf or bracket 57 on which the solenoids 481—491 and 90 are supported. On the rear side of the central plate 120 is secured a frame consisting of side plates 127, 128, intermediate plates 129, 130, and transverse spacer rods or bars 131 for supporting the registers, their operating solenoids and associated parts. Shelves 132 are formed on

the bottoms of these plates to support the solenoids, and the insulating blocks 74 are secured to their upper parts. Other insulating blocks 133 are also mounted on these plates to hold the binding posts by which circuit conductors are connected to the solenoid windings. The insulating shelf 106 is also secured to the rear side of plate 120, and below the shelf is attached to, but insulated from the plate, a strip of conducting material in the nature of a bus-bar which constitutes the conductor *w* shown in the diagram and holds binding screws for the conductors, *s*, *t*, *v*, etc. associated therewith.

The conduit for rejected articles is secured to the back of plate 120 and between it and the register operating solenoids. A guide for the accepted coins formed by the inclined plane 27 and guiding side walls 138 is secured at the front of the plate 120 to the insulating piece 15. Solenoid 78 is mounted on a shelf 139 fastened to the lower part of plate 120.

The casing first described as 11 is a shell which is open at the bottom and fits flanges 140 rising from the edges of the base plate 121, to which its lower edges are detachably secured. It envelops the interior parts and may be lifted off to give access to them. On the inside of its top wall it carries two pairs of separated lugs 141 which embrace the upper edge of the plate 120 at opposite sides of the entrance slot 12.

The solenoids are all encased in metallic shells which protect them and are slotted in the sides to give a view of their windings. The magnetic cores of the solenoids are properly disposed in accordance with well known principles to be moved in the directions required for their several services when magnetic force is generated. Extensions of the cores which, if made of the same material would prevent or retard such movements, are made of nonmagnetic material mechanically secured to the iron or steel cores proper. For the rest, the electrical conductors are not shown except in the diagram Fig. 9, as they may be variously placed according to the judgment of the designer.

In describing the relationship of the various parts with respect to the horizontal plane, I have not intended to imply any further limitations of scope than those imposed by necessity of gravity impulsion of the inserted articles in the paths provided for them through the machine. Otherwise the operating parts may be placed in any other locations than those shown, wherein they may perform their intended functions.

What I claim and desire to secure by Letters Patent is:

1. A ticket receiver having a selective arrester including circuit closing means adapted to close different electric circuits when articles of different characteristics are received in said arrester, a displacer shiftable to displace articles from the arrester in one direction or another direction, and controlling means for said displacer controlled respectively by said different circuits for actuating the displacer in one or another of the before mentioned movements.

2. A ticket receiver having a space formed with arresting walls adapted to receive inserted articles and to arrest and hold articles of different characteristics in relatively different positions, a displacer cooperating with articles received in said arrester and movable into a plurality of different positions for removing the articles and directing them to one or another of different destinations, a plurality of electrical devices connected with said displacer and operable independently of one another to put the displacer into one or another of said positions, and separate circuit closing means in circuit with the several electrical devices arranged to be independently and exclusively engaged in circuit closing action by articles of different characteristics in the arresting space.

3. In a ticket receiver a guiding chute, an arrester having a space in continuation of said chute provided with convergent bounding walls at opposite sides and being open at the intermediate sides, a displacer having walls bounding a continuation of the chute in said arresting space and extending transversely to said bounding walls but free to move from a normal position between said walls through either open intermediate side of the arresting space, circuit terminal contacts spaced apart and insulated from one another along one of said bounding walls adapted to be engaged independently by tickets of different diameters, complemental conductive material on the opposite wall of the space, an electromagnetic device in circuit with one of said terminal contacts adapted when energized to shift the displacer to one side, and a second electromagnetic device connected with another of said contacts and adapted when energized to move the displacer toward the opposite side.

4. A ticket receiver comprising an entrance passage, a selective arresting space into which said passage opens, a displacer movable to displace from said space tickets lodging therein, an observation chamber to which displaced tickets are conducted, and electrical means operated automatically by tickets introduced into the chute for so actuating the displacer, and for removing a previously deposited ticket from the observation chamber.

5. A ticket receiver comprising an entrance passage, a selective ticket arrester, a displacer for removing tickets from said arrester movable to shift tickets to either of two different destinations, one of said destinations being an observation chamber, means normally retaining in said chamber tickets delivered thereto by the displacer, electrical means operated by a ticket deposited in the chute for closing the chute against deposit of a following ticket and opening the observation chamber to permit release therefrom of the ticket therein, and other electrical means operated by a ticket received by said arrester for moving said displacer and causing withdrawal of the said chute closing means.

6. In a ticket receiver having a chute for guidance of the admitted articles, a holder pivoted externally of the chute, studs of conductive material projecting from the holder into the chute in position to arrest an inserted ticket and to be bridged across thereby, an electromagnetic device coupled to said holder normally holding the latter in the last named postion but adapted to move the holder so as to withdraw said studs from arresting engagement with the ticket, conductors in circuit with said studs and electromagnetic device arranged to cause flow of current through the electromagnetic device when the studs are so bridged by the ticket, an observation chamber adapted to receive tickets from the chute and having a ticket releaser normally located to retain tickets in the chamber, a second electric circuit closable by the before named holder when displaced into stud withdrawing position, and electrical means operated by closing of the last named circuit for operating said

ticket releaser to release tickets from the observation chamber.

7. In a ticket receiver, a chute for guiding inserted tickets, a shield for obstructing said chute, means operated by a ticket entering the chute for setting said shield to prevent entrance of another ticket, electrically operated indicating means controlled by the ticket in its further progress, and electrical means governed by the ticket at the same time for restoring the shield to open chute position.

8. In a ticket receiver, a conducting chute, a selective arrester in position to receive tickets from said chute, indicating means operated by tickets received by the arrester, a displacer for removing tickets from the arrester, a shield adapted to obstruct the chute against entrance of tickets, means operated by a ticket in the chute for placing said shield in obstructing position, means controlled by a ticket in the arrester for restoring the shield to open chute position, a displacer for removing tickets from the arrester, and means controlled by the arrested tickets for operating said displacer.

9. In a ticket receiver, a chute for conducting inserted tickets, a shield adapted to obstruct the chute normally located in open chute position, electrically controlled means in the chute operable by an inserted ticket for placing the shield in obstructing position and being displaceable out of engagement with the ticket when the shield is so placed, a latch for holding the shield in obstructing position, and means operable by the ticket in its further progress for releasing said latch and causing return of the shield to normal position.

10. In a ticket receiver having a chute, a holder member adjacent to the chute having a shield normally clear of the chute passage but adapted to be placed across the same, separated electrically conductive stops projecting from said holder normally into the chute at a location further along therein than said shield to arrest and be bridged electrically by a ticket therein, and being withdrawn by that movement of the holder which places the shield across the chute, an observation chamber to which tickets pass from the chute, a ticket releaser for releasing tickets from said chamber, an electromagnetic device in circuit with said stops and connected with the holder for moving it, when such circuit is closed by contact of a ticket with the stops from normal position to a second position, wherein the stops are withdrawn from the chute and the shield is placed across it, an electrical device for operating said releaser, and means operated by said holder in passing to its said second position for closing the circuit of said electrical device.

11. A selective ticket register comprising an arrester having means for selectively arresting tickets of different dimensions in respectively different locations, a plurality of different electric circuits each having a terminal closing element in position to be closed respectively by tickets of a specific dimension only, electro-magnetically operated counters, each in a different one of said circuits for registering separately the quantities of different tickets delivered to said arrester, a displacer for removing the arrested tickets from the arrester, and means controlled by said counters for actuating the displacer when any of the counters is operated.

12. A selective ticket register comprising an arrester having means for selectively arresting tickets of different dimensions in respectively different locations, a plurality of different electric circuits each having a terminal closing element in position to be closed respectively by tickets of a specific dimension only, electro-magnetically operated counters, each in a different one of said circuits for registering separately the quantities of different tickets delivered to said arrester, a displacer for removing the arrested tickets from the arrester, an electro-magnetic operator for said displacer, and parallel circuit closers for said operator each closable by one of the magnetically operated counters.

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