

J. S. DOYLE, R. E. KERINS & G. KEEGAN.

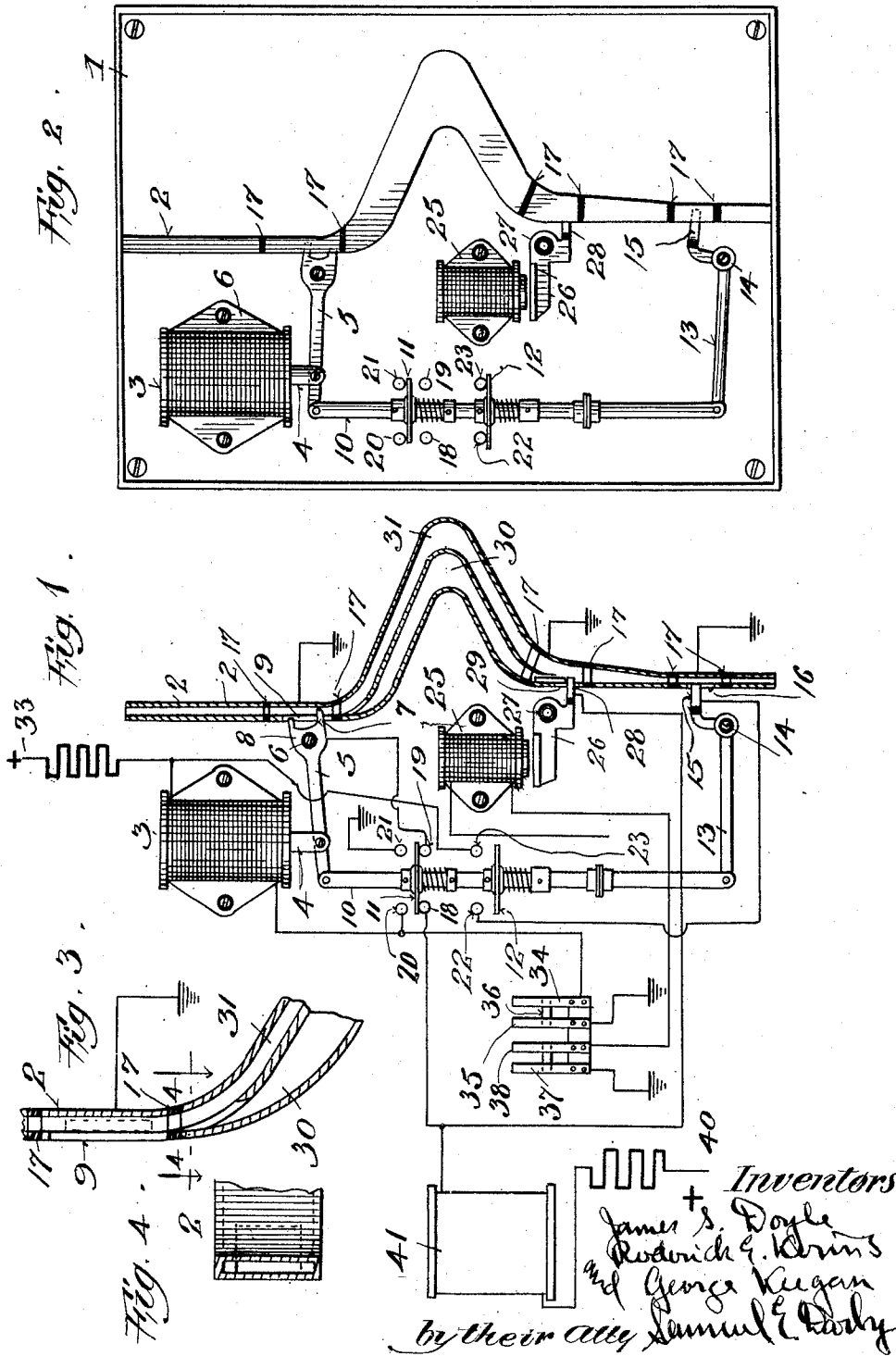
COIN REGISTERING MECHANISM.

APPLICATION FILED JAN. 10, 1918.

1,294,637.

Patented Feb. 18, 1919.

2 SHEETS—SHEET 1.



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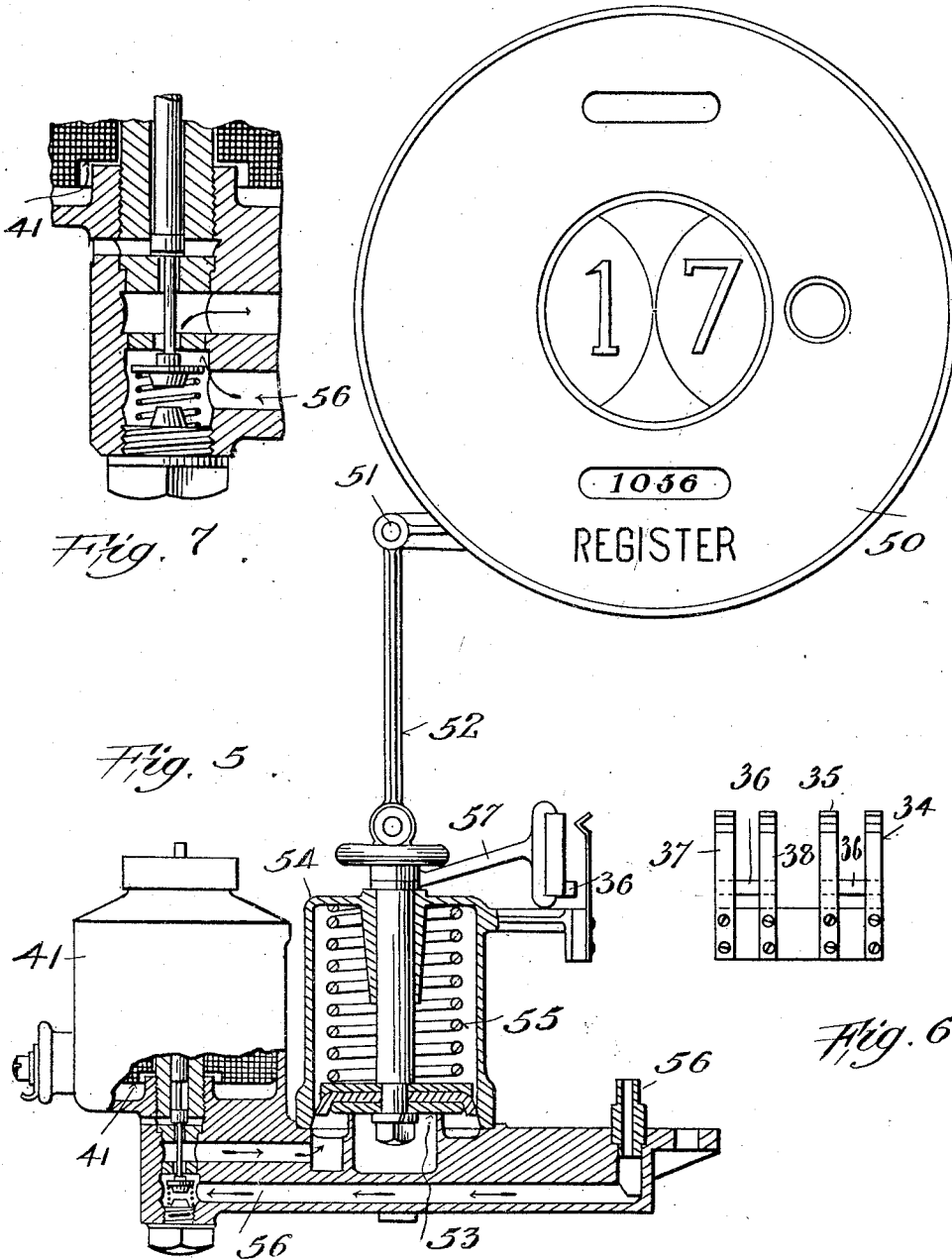
COIN REGISTERING MECHANISM.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES S. DOYLE, OF MOUNT VERNON, RODERICK E. KERINS, OF NEW YORK, AND
GEORGE KEEGAN, OF KEW GARDENS, NEW YORK.

COIN-REGISTERING MECHANISM.

1,294,637.

Specification of Letters Patent.

Patented Feb. 18, 1919.

Application filed January 10, 1918. Serial No. 211,136.

To all whom it may concern:

Be it known that we, JAMES S. DOYLE, RODERICK E. KERINS, and GEORGE KEEGAN, all citizens of the United States, and residing at Mount Vernon, in the county of Westchester, New York, in the county of Bronx, and Kew Gardens, in the county of Queens, respectively, in the State of New York, have made a certain new and useful Invention in Coin-Registering Mechanism, of which the following is a specification.

The invention relates to coin registering mechanism of the electrically controlled type.

The object of the invention is to provide a coin registering mechanism which is simple in structure, efficient in operation, and economical of manufacture.

A further object of the invention is to provide a device of the class described which is electrically controlled, and which is automatic throughout in its operation.

A further object of the invention is to provide a mechanism which with but the insertion of a coin automatically registers the denomination of the coin without further manual operation or additional attention and allows the coin to be deposited in any suitable receptacle therefor.

A further object of the invention is to provide a device of the class described which is electrically controlled, the electric circuits thereof being in turn controlled by the coin passing therethrough.

A further object of the invention is to provide a mechanism of the class described which at all times insures the proper registering irrespective of the number of coins employed or the speed at which the coins are passed through the mechanism.

A further object of the invention is to provide a mechanism of the class described particularly adapted for use as a fare registering device for street cars, or in any instance where coin toll is exacted for admission.

Further objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown on the accompanying drawings, and finally pointed out in the appended claims.

Referring to the drawing:—

Figure 1 is a diagrammatic view of the wiring connections and of the mechanism associated therewith employed in accordance with our invention.

Fig. 2 is an interior view of the coin box employed in accordance with our invention.

Fig. 3 is an enlarged detailed view in section showing a portion of the coin chute employed in accordance with our invention.

Fig. 4 is a sectional view taken on the line 4, 4, Fig. 3, and looking in the direction of the arrows.

Fig. 5 is a view in elevation, partly in section, showing a registering device and one means for effecting the control thereof employed in accordance with our invention.

Fig. 6 is a face view of the interlocks shown in Fig. 5.

Fig. 7 is an enlarged detailed view in section of a portion of the magnet valve contemplated as one method of control of the register in accordance with our invention.

The same part is designated by the same reference numeral wherever it occurs throughout the several views.

It is among the special purposes of our present invention to provide a coin registering mechanism so arranged and so constructed that a coin of any desired denomination may be placed in a chute, slot, or other suitable coin receiving device, and the coin thereby automatically passes through the mechanism and registers in any suitable or desired manner the denomination of the coin automatically. We further provide means for insuring the automatic operation of the mechanism for each coin irrespective of the number of coins placed in the slot and the quantity of coins placed in the slot in a given length of time so that each coin is properly registered in its turn according to its denomination.

Referring to the drawing, as showing one specific embodiment of our invention 1 designates what I will refer to as the coin box which may be of any desired shape, material or construction, and in which the mechanism and wiring controlled by the coins to be registered is located. Passing through the box 1 is a coin chute 2 of any desired or suitable construction, but preferably, and as shown, disposed to allow the coins to pass therethrough by gravity. The top of the

coin chute 2 may, if desired, be in communication with a coin hopper of any desired or well known structure, and the bottom of the coin chute 2 may, if desired, be in communication with any desired or suitable receptacle for the coins after they have passed therethrough. In accordance with our invention we propose to secure the proper registering of the coin and its denomination due to and during its passage through the coin chute 2 as will be more fully hereinafter explained. Suitably located in the coin box 1 and adjacent to the coin chute 2 is a magnet or solenoid 3, the core 4 of which is secured to a lever 5, pivotally connected at a point 6 adjacent the coin chute. The lever 5 is in the form of a yoke having teeth 7 and 8 adapted to project through a slot 9 in the coin chute 2. The lower tooth 7 of the lever 5 projects into the coin chute 2 through the hole 9 thereof when the magnet or solenoid 3 is deenergized and the upper tooth 8 of the lever 5 in this position of the lever 5 does not project into the coin chute as clearly shown in Fig. 1. When the magnet or solenoid 3 is energized however the upper tooth 8 of the lever 5 projects into the coin chute 2 through the opening 9 and the lower tooth 7 does not project therein as shown by the position of these elements in Fig. 2. The end of the lever 5 is pivotally connected to a rod 10 carrying bridging switches 11 and 12 respectively, and to the lower end of said rod 10 is pivotally connected a lever 13, which lever is mounted to rotate about a pivot 14 and has an arm 15 adapted to project into a slot 16 of the chute 2. The portion of the chute 2 through which the arm 15 projects is insulated as at 17 from the remainder of the chute 2 as is likewise the portion of the chute 2 into which the lever 5 projects. Thus it will be seen that when the solenoid 3 is deenergized as shown in Fig. 1 the arm 15 of the lever 13 does not project into the coin chute 2, but when the magnet is energized as shown in Fig. 2 the arm 15 of the lever 13 does project into the coin chute to stop the passage thereof. Likewise when the magnet is deenergized the bridging switch 11 carried by rod 10 establishes circuit connection between contacts 18 and 19 and when the magnet or solenoid 3 is energized the circuit connection between terminals 18 and 19 is opened and the bridging switch 11 closes the circuit between terminals 20 and 21 while at the same time the bridging switch 12 establishes circuit connection between terminals 22 and 23. Also mounted in the coin box 1 adjacent to the coin chute 2 is a second magnet 25, the core of which is adapted to cooperate with a lever 26 which is pivotally mounted at 27 and provided with a projecting arm 28 normally extending a short distance into the coin chute 2 through

an opening 29 thereof. The portion of the coin chute into which this arm 28 normally projects is insulated as at 17 from the rest of the coin chute.

In the particular form shown we have shown a coin chute adapted to handle coins of two denominations, for example, nickels and dimes, and for that reason we have shown the coin chute below the lever 5 as divided into two passages 30 and 31, the passage 30 being for dimes and the passage 31 being for nickels. The coin in this instance, either a nickel or dime, in passing through the chute when it reaches the first curved portion thereof will either follow the passage 31 or, if it is the size of the dime, or in other words, smaller than the nickel, will drop through to passage 30. This type of coin differentiator is well known in the art, and its particular construction forms no part of the present invention. We will now describe the circuit connections employed in accordance with our invention.

Electric power is supplied through the connection 33 and passes to the contact terminal 23. A branch circuit from the source 33 passes through solenoid 3 to contact terminal 20 and to the conducting terminal 34, which is normally out of circuit with respect to a similar terminal 35, which terminal 35 is connected to ground as shown. The interlocked members 34, 35, are adapted to have circuit connection established therebetween by means of movable conducting member 36 as will be more fully hereinafter described. In the form shown I employ two of the interlocks, the member 37 of the second interlock being connected to ground and the member 38 of the second interlock being connected to one terminal of the magnet 25, the other terminal of which magnet is connected to current source. The contact terminal 22 is connected to arm 15 of the lever 13 as shown. Contact terminal 21 is connected to ground as shown. The source of power is also connected through line 40 through magnet valve 41 to the contact terminal 18 and likewise to the arm 28 of the armature 26 controlled by magnet 25. Each of the insulated portions of the coin chute 2 is grounded. Any type, form or description of registering mechanism may be employed, and for that reason we have shown diagrammatically at 50 a registering mechanism of a standard construction which is operated once for each upward movement of the lever 51. The movement of the lever 51 may be accomplished in any desired manner, and while we will now show and describe an electropneumatic mechanism it is to be understood that our invention is not to be limited thereto as it will be apparent that in place of the electropneumatic device shown a straight electromagnetic mechanism

may be employed, or in fact any other types of mechanism for effecting in accordance with our invention the operation of the registering device 50, mechanical or otherwise.

5 In the form shown, however, we show the lever 51 of the registering device 50 pivotally connected to a rod 52 which is connected to and forms part of the piston rod secured to piston 53 operating in fluid pressure cylinder 54 against the action of a spring 55 in the usual well known manner. Fluid pressure is admitted through passage 56, which passage is controlled by the magnetic valve 41 in the usual well known manner, and thence to the piston 53. The particular form of construction of the magnet valve employed forms no part of our present invention, and for this reason we have merely shown conventionally in section the valve portion thereof. When the magnet valve is operated fluid pressure passes to the piston 53 to force same upwardly thereby effecting the operation of the register as will be clearly understood. When the magnet valve becomes deenergized the action of the spring 55 forces the piston to its normal position as shown in Fig. 5, and the magnet valve is open to exhaust so that the fluid pressure in the cylinder 54 may freely escape therefrom in the usual and well known manner. We employ the movement of the piston 53 to effect the completion of the circuit between interlocked members 37, 38, and 34, 35, by means of the bridging conductors 36, carried by the arm 57 secured to the piston rod 52 as shown. The operation of the device as described will now be set forth.

Assuming the parts to be in their normal position as shown in Fig. 1, and that a coin, say for example, a nickel, has been inserted in the slot, and has dropped onto the tooth 7 of the lever 5 thereby establishing circuit connection between tooth 7 and the ground, current then flows from the source through line 40 through magnet valve 41 to contact terminal 18 across bridging switch 11 to contact terminal 19 to tooth 7 of the lever 5 to ground. This energizes magnet valve 41 and allows fluid pressure to flow to the cylinder 54 to operate the piston therein thus effecting the operation of the registering device and causing the contacts 36 to establish circuit connection between the members 37, 38, and 34, 35, thereby completing the following circuit,—from source to terminal 33, solenoid 3, member 34, bridging contact 36, member 35, to ground. This energizes the solenoid 3 thereby drawing up its core 4 therein opening the circuit between contact terminals 18 and 19 and closing circuit between contacts 22, 23 and 20, 21, and at the same time rocking the lever 5 to withdraw the arm 7 out of the coin chute 2 and projecting the arm 8 there-

of into the coin chute 2 to prevent any more coins from dropping thereby. Current source then passes through line 33, solenoid 3, to terminal 20, across bridging switch 11, to terminal 21 and to ground, thereby locking the solenoid 3 in its energized position. At the same time circuit connection is established by bridging switch 12 between contact terminals 22 and 23. The coin, a nickel in this instance, passes through the passage 31 of the chute 2 until it strikes the arm 15, which, due to the energization of solenoid 3, projects into the chute 2 as shown in Fig. 2. This completes the circuit from line 33, contact terminal 23, bridging switch 12, contact terminal 22, to arm 15 to ground, thereby shortcircuiting solenoid 3 and allowing the same to drop its plunger core 4 to open the circuit between contacts 20 and 21 and to withdraw arm 15 from out of the coin chute 2, thus allowing the coin to drop into the desired receptacle. Thus briefly it will be seen that the coin striking lever 5 completes the circuit which effects the actuation of the register and automatically allows the coin to drop and at the same time energizing solenoid 3. When the coin reaches member 15 it completes another circuit which deenergizes solenoid 3, withdraws member 15 from out of its path, and replaces the various elements of the mechanism in the normal condition awaiting actuation or operation from the action of the next coin. It will be seen that when the rod 10 is drawn upward by solenoid 3 drawing its plunger core 4 the magnet valve 41 becomes open-circuited thus allowing the interlocked members to likewise become open-circuited, and thus restoring the registering mechanism to its normal position or condition immediately after the same has been actuated.

Where coins of different denominations are employed, for example, a nickel and a dime, the dime drops on the arm 7 of the lever 5 and thus closes the circuit of the magnet valve 41 effecting one operation of the register 50, as hereinbefore explained. In this instance, however, the dime drops into passage 30 of chute 2 and falls against the arm 28 of member 27 thus completing the circuit from source through line 40 through magnet valve 41 to arm 28 through the coin to ground, thus effecting the operation of the register a second time and raising the bridging contact 36 to establish circuit connection between members 37 and 38 whereby current flows from source through magnet 25 to member 38, member 37, to ground, thus energizing magnet 25 and rocking the member 27 about its pivot and withdrawing arm 28 thereof from out of the path of the coin and thus allowing the coin to come in contact with member 15 to again place the various parts of the apparatus in their normal position ready for the

operation caused by the insertion of the next coin. Thus it will be seen that where a coin of larger denomination is used we effect an actuation of the register the desired number of times during the course of travel of the coin through the chute corresponding to the value of the coin. For example, where a nickel is employed in the illustration selected for the purpose of more clearly describing our invention one actuation of the register is secured. When the dime is employed two actuations of the register are secured. If the apparatus is to be used for quarters as well, by inserting in the system additional magnet members 25, and additional chute passages, five actuations of the registering device would be secured. We have set forth a register of the nickel type, that is, where the register denotes units of five, or in other words, where each actuation of the register denotes five cents. It is obvious that the denomination of the coins forms no part of our invention as it may be in single units of one cent, or of any multiplicity of units or any arbitrary unit, or slugs of any particular value may be employed as these details form no part of our present invention.

Likewise while we have shown and described the apparatus as a fare registering apparatus we wish it to be understood that we are not to be limited in this respect as the same may be readily employed at gates where admission is charged, for example, in motion picture theaters, or other theaters, or the like.

With our invention it is obvious that it would be possible to have a master register controlled from a plurality of individual stations at which stations an individual coin chute is located, and thus it would be possible at a single glance to know the sum total of admissions collected from the plurality of stations.

Various other uses and arrangements of the coin register embodying our invention will readily occur to those skilled in the art, and various modifications and changes in detail will also readily occur to those skilled in the art without departing from the spirit and scope of our invention as defined in the claims, therefore what we claim as new and useful and of our own invention, and desire to secure by Letters Patent, is,—

1. In a coin registering mechanism, a registering device, electrically controlled devices for operating the same and circuits therefor, a coin circuit for controlling said circuits, said coin circuit controlled by the coin to be registered.

2. In a coin registering mechanism, a registering device, electrically controlled devices for operating the same and circuits therefor, a coin circuit for controlling said

circuits, said coin circuit controlled according to the denomination of the coin to be registered.

3. In a coin registering mechanism, a registering device, means to operate the same, an electric device to control said means, circuits for said device, a coin circuit for controlling said circuits, and means controlled by the coin to be registered for controlling said coin circuit.

4. In a coin registering mechanism, a registering device, means to operate the same, an electric device to control said means, circuits for said device, a coin circuit for controlling said circuits, and means controlled by the coin to be registered for controlling said coin circuit successively according to the denomination of the coin.

5. In a coin registering mechanism, a registering device, means to actuate the same, an electrically operated device to control said actuating means, a normally open circuit therefor, and means disposed in the path of the coin to be registered to complete said circuit through the coin, an auxiliary circuit, means operated by the completion of said first mentioned circuit for closing said auxiliary circuit and maintaining said auxiliary circuit closed, and means disposed in the path of the coin at a subsequent point and actuated by said coin for opening said auxiliary circuit.

6. In a coin registering mechanism, a registering device, means to actuate the same, an electrically operated device to control said actuating means, a normally open circuit therefor, and means successively disposed in the path of the coin to be registered to complete said circuit successively according to the denomination of the coin, an auxiliary circuit, means operated by the completion of said first mentioned circuit for closing said auxiliary circuit and maintaining said auxiliary circuit closed, and means disposed in the path of the coin at a subsequent point and actuated by said coin for opening said auxiliary circuit.

7. In a coin registering mechanism, a registering device, means to actuate the same, an electrically operated device to control said actuating means, a circuit therefor, a coin stop disposed in the path of the coin and arranged in said circuit whereby said circuit is completed through the coin, means actuated thereby for withdrawing said stop out of the path of the coin and inserting a subsequent stop in the path of said coin and means controlled by the coin touching said subsequent stop for withdrawing said subsequent stop and again inserting said first mentioned stop in the path of travel of the coin.

8. In a coin registering mechanism, a registering device, means to actuate the same,

an electrically operated device to control said actuating means, a circuit therefor, coin stops successively disposed in the path of the coin and each arranged in the circuit of said electrically operated device, whereby said circuit is closed successively through the coin according to the denomination of the coin, a normally open auxiliary circuit, means actuated by the initial closing of said first mentioned circuit for closing said auxiliary circuit, and maintaining the same closed, and means actuated by the coin at the completion of its travel through said mechanism, for opening said auxiliary circuit.

9. In a coin registering mechanism, a registering device, means to actuate the same, an electrically operated device to control said actuating means, a control circuit therefor, means disposed in the path of the coin to be registered to complete said circuit to actuate said device, a normally open auxiliary circuit, and means controlled by said electrically operated device when actuated for closing said auxiliary circuit, and means operated by the completion of said auxiliary circuit for opening said control circuit.

10. In a coin registering mechanism, a registering device, means to actuate the same, an electrically operated device to control said actuating means, a control circuit therefor, means disposed in the path of the coin to be registered to successively complete said control circuit through said coin according to the denomination of the coin to thereby actuate said device, a normally open auxiliary circuit, and means to close said auxiliary circuit when said electrically operated device is actuated, and means operated by the completion of said auxiliary circuit for opening said control circuit.

11. In a coin registering mechanism, a registering device, means to actuate the same, an electrically controlled device to control said actuating means, a control circuit therefor, a coin stop also arranged in said control circuit, said control circuit being closed through said coin when the coin to be registered is arrested by said stop, a normally open auxiliary circuit, and means rendered operative by the actuation of said electrical device for closing said auxiliary circuit, and means actuated by the completion of said auxiliary circuit for withdrawing said stop and opening said control circuit.

12. In a coin registering mechanism, and in combination with a registering device, a coin chute, a stop normally extending into the same, means for actuating the registering device, a normally open control circuit for controlling said means, and means for completing said circuit through the coin to be registered when engaged by said stop, a

normally open auxiliary circuit, means for closing said auxiliary circuit upon the actuation of said device, and means actuated by the completion of said auxiliary circuit for withdrawing the stop from said chute.

13. In a coin registering mechanism, and in combination with a registering device, a coin chute, a stop normally extending into the same, means for actuating the registering device, a normally open control circuit for controlling said means, and means for completing said circuit through the coin to be registered when engaged by said stop, a normally open auxiliary circuit, means for closing said auxiliary circuit upon the actuation of said device, and means actuated by the completion of said auxiliary circuit for withdrawing the stop from said chute, and means for coincidently opening said control circuit.

14. In a coin registering mechanism, and in combination with a registering device, a single coin chute, a plurality of stops normally extending into the same and corresponding in number to the denomination of the coins to be registered, means controlled by the coin to be registered when engaged by either of said stops for actuating the registering device, and means to withdraw the stops from the chute.

15. In a coin registering mechanism, and in combination with a registering device and means to actuate the same, a single coin chute having passages corresponding to various denominations of coins, stops cooperating with said chute passages and corresponding in number to the denomination of the coins, said stops being normally disposed in position to arrest the coins, means controlled by a coin when arrested by a stop to actuate the registering device, and means to withdraw the stop from the chute.

16. The combination with a single coin chute, a stop normally cooperating therewith to arrest the coin, and a magnet to withdraw said stop, of an electrically operated registering device, means including a normally open circuit completed by the coin when arrested by the stop for actuating said registering device, and means rendered operative by the actuation of the registering device for completing the circuit of said magnet.

17. The combination with a coin chute, a stop normally cooperating therewith to arrest the coin, and a magnet to withdraw said stop, of a registering device, means controlled by the coin when arrested by the stop for actuating said registering device, means rendered operative by the actuation of the registering device for completing the circuit of said magnet, a second coin stop in normally retracted position, said second stop being moved into position to arrest the

coin when said magnet circuit is completed, and means controlled by the coin when arrested by said second stop for short circuiting the magnet to restore all parts to normal positions.

18. The combination of a coin chute, a movable contact device cooperating therewith to form a rest for a coin, a circuit closed by the coin through said contact, a registering device, means in said circuit for controlling the actuation of said registering device, a magnet operating when energized to withdraw said contact as a rest for the coin, means operative by the actuation of the registering device to complete the circuit of said magnet, a second movable contact to form a rest for the coin, said second contact being shifted into position to form a rest for the coin when said magnet is energized and means controlled by the coin when arrested by said second contact for short circuiting said magnet.

19. In a device of the class described, the combination with a registering device, a normally projected coin stop arranged in the path of travel of the coin, a second coin stop normally retracted, but adapted to project in the path of travel of the coin subsequent to its passage by said first coin stop, means operated by the coin touching said first coin stop for actuating said registering device, for projecting said second stop into the path of travel of the coin, and for retracting said first stop out of the path of the coin, and means operated by the coin touching said second stop for restoring both of said stops in their normal positions.

20. In a coin registering mechanism, and in combination with a registering device and means to actuate the same, a single coin chute having a plurality of passages corresponding to various denominations of coins, stops cooperating with said chute passages and corresponding in number to the denomination of the coins, said stops being normally disposed in position to arrest the coins, means controlled by a coin when arrested by a stop to actuate the registering device, and means actuated by the actuation of the registering device for withdrawing the stop from the chute.

21. A coin mechanism comprising a coin chute, a device to be actuated by the coin passing through said chute, an electric circuit controlling said device, a stop normally located in said chute, a blocking stop normally located out of said chute at a point above said registering stop, means operated by a coin reaching said stop for completing said circuit, and means actuated by the completion of said circuit through said coin for retracting said registering stop out of said chute.

22. A coin mechanism comprising a coin

chute, a device to be actuated by the coin passing through said chute, an electric circuit controlling said device, a stop located in said chute, electrically operated means actuated by a coin reaching said stop for completing said circuit, and means actuated by the completion of said circuit for retracting said registering stop out of said chute and inserting said locking stop in said chute and for coincidentally blocking said chute at a point above said stop to prevent the passage of any coin thereby while said stop is in its retracted position.

23. A coin mechanism comprising a coin chute, a device to be actuated by the coin passing through said chute, an electric circuit controlling said device, a stop located in said chute, electrically operated means actuated by a coin reaching said stop for completing said circuit, and means actuated by the completion of said circuit for retracting said stop out of said chute, and means actuated by said coin after passing said stop, for opening said circuit.

24. A coin mechanism comprising a coin chute, a device to be actuated by the coin passing through said chute, an electric circuit controlling said device, a stop located in said chute, electrically operated means actuated by a coin reaching said stop for completing said circuit, means actuated by the completion of said circuit for retracting said stop out of said chute and for coincidentally blocking said chute at a point above said stop to prevent the passage of any coin thereby while said stop is in its retracted position, and means actuated by said coin after passing said stop for opening said circuit.

25. A coin mechanism comprising a coin chute, a device to be actuated by the coin passing through said chute, an electric circuit controlling said device, a stop located in said chute, electrically operated means actuated by a coin reaching said stop for completing said circuit, means actuated by the completion of said circuit for retracting said stop out of said chute and for coincidentally blocking said chute at a point above said stop to prevent the passage of any coin thereby while said stop is in its retracted position, means actuated by said coin after passing said stop for opening said circuit, and means actuated by the opening of said circuit for restoring said stop to its initial position.

26. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed through the coin and said contact, means operated by the closing of said circuit for actuating said registering device, means also operated by the closing of said

circuit for moving said contact device, means actuated by the movement of said contact device for opening said circuit, and means in turn actuated thereby for retaining said contact device in its moved position.

27. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position.

28. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, means also operated by the closing of said circuit for moving said contact device, and means actuated by the movement of said contact device for opening said circuit, a second contact device cooperating with said chute at a point subsequent in the travel of a coin therethrough to said first contact device, and normally out of position to form a coin rest, and means actuated by the opening of said circuit for rocking said second contact device to cause the same to form a coin rest in said chute.

29. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position, a third circuit, and means actuated by the closing of said third circuit for opening said second circuit.

30. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position, a second contact device, a normally open third circuit including said second contact device therein, and means actuated by the completion of said third circuit for opening said second circuit.

mal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position, a second contact device, a normally open third circuit including said second contact device therein, and means actuated by the completion of said third circuit for opening said second circuit.

31. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position, a third circuit, and means actuated by the closing of said third circuit for opening said second circuit and said third circuit.

32. The combination with a coin chute, a movable contact device cooperating therewith to form a rest for a coin when in normal position, a registering device, a circuit closed by the coin through said contact, means operated by the closing of said circuit for actuating said registering device, and means also operated by the closing of said circuit for moving said contact device, a normally open second circuit, means actuated by the movement of said contact device for opening said first circuit and for closing said second circuit, and means operated by the closing of said second circuit for retaining said contact device in its moved position, a second contact device, a normally open third circuit including said second contact device therein, and means actuated by the completion of said third circuit for opening said second circuit and said third circuit.

In testimony whereof we have hereunto set our hands on this 8th day of January A. D., 1918.

JAMES S. DOYLE.
RODERICK E. KERINS
GEORGE KEEGAN.