Sept. 17, 1935. W. S. JOHNSON 2,014,846

INDICATING FARE REGISTER

Original Filed Oct. 1, 1929

Fig. 1.

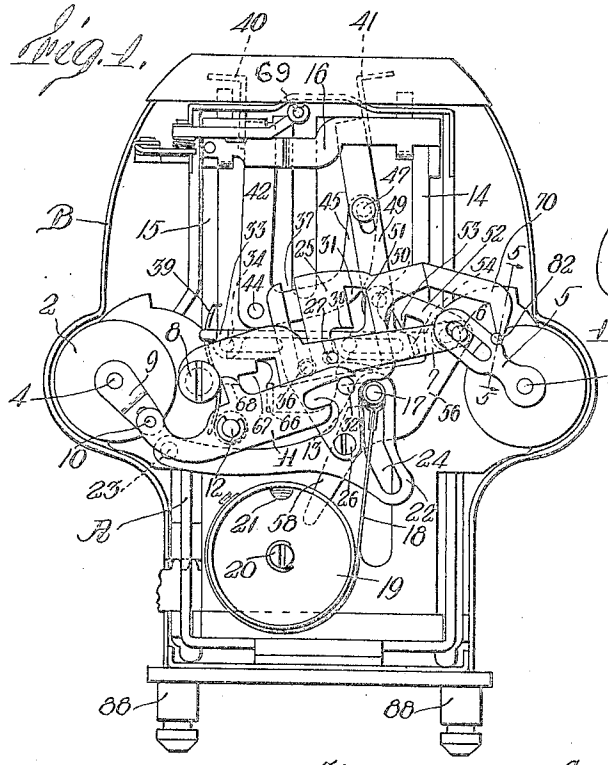


Fig. 4.

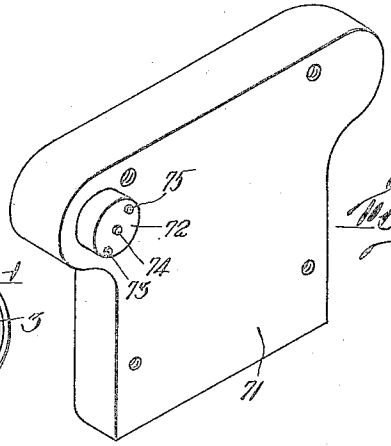


Fig. 5.

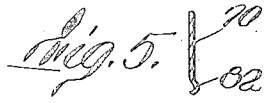


Fig. 2.

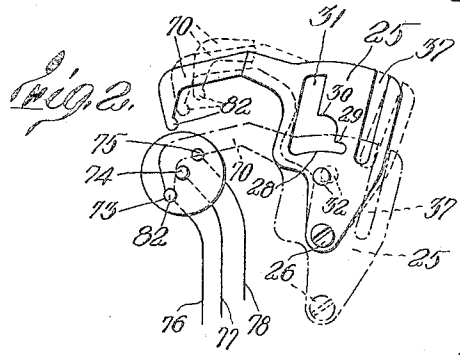
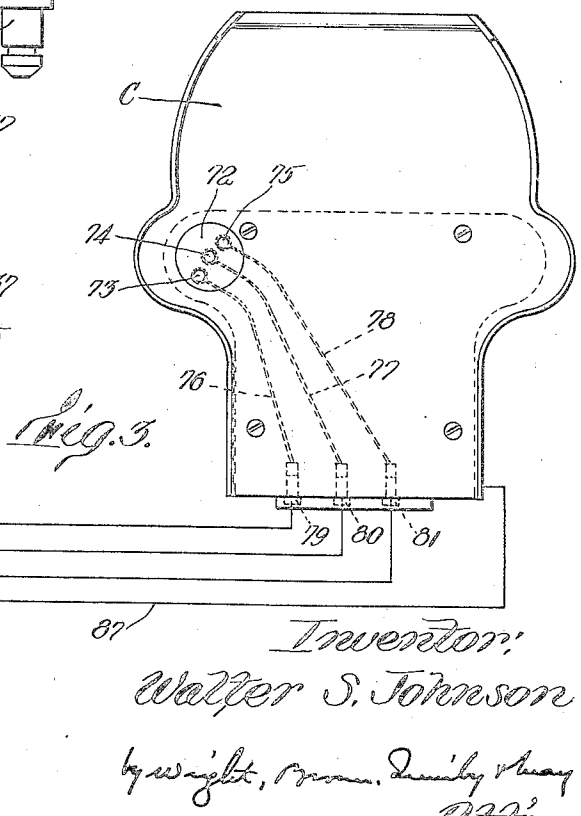


Fig. 3.



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UNITED STATES PATENT OFFICE

2,014,846

INDICATING FARE REGISTER

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Application October 1, 1929, Serial No. 396,555
Renewed January 23, 1935

6 Claims. (Cl. 235—32)

This invention relates to receivers and registers of coins and other articles or indicators of value, of the same nature and for the same purposes as the machine illustrated in my prior Patent No. 1,655,650, granted January 10, 1928. Its particular object is to provide means, additional to the receiving and registering means of said patent, for indicating visibly, to other persons as well as the fare collector himself, the denomination of the coin or other article placed in the register. Machines of the character described in said prior patent are designed to receive articles of different characteristics; that is, for instance, the same machine will receive and selectively register coins of different denominations, as five cent pieces, dimes and quarter dollars. Although the prior machine was provided with safeguards to prevent registering a lower value when a coin of higher value was deposited, it did not prevent acceptance in the machine by the collector, through collusion with a depositor, or by oversight, of a lower value coin than that required as compensation for the service rendered. For instance, in the case of street car conductors, instances have been known of a conductor permitting deposit of a five cent piece instead of a dime, or a dime in place of a quarter dollar, in payment of a fare from passengers in collusion with him, and dividing with the passenger the difference between the prescribed fare and the actual payment; and sometimes also in the rush of heavy traffic dishonest passengers may succeed in depositing a lower value coin in the registering machine than the prescribed value of the fare.

Having regard to these facts I have devised a means, which constitutes essentially the new step of the present invention for causing different signals, of a more readily apparent nature than the counter indications of the fare register, to be given upon deposit of coins, etc., of different values in the register. Preferably such signals are of a visual character and are given by electric lamps of different colors or degrees of brilliancy in circuit with the register, and in respectively different circuits arranged to be selectively closed following deposit respectively of coins of the several denominations which the register is designed to receive. Such lamps or other signals may be placed in any desired locations where they may be seen by an inspector, other passengers and the collector himself, or possibly by an inspector only.

In the drawing furnished herewith,—

Fig. 1 is an elevation of a fare register, essentially like that disclosed in my prior patent previously mentioned, to which the improvement of the present invention has been attached, but with omission of the front wall of the casing to show the operating mechanism;

Fig. 2 is a detail elevation of part of the mechanism, showing particularly the circuit closing members thereof;

Fig. 3 is in part an elevation of the removable cover of the register casing, and in part a diagram of the electrical equipment of the apparatus in connection with said cover;

Fig. 4 is a perspective view of a block of insulating material which is applied to the cover and contains certain wires and contacts of the electrical equipment;

Fig. 5 is a detail sectional view taken on line 5—5 of Fig. 1.

The register or machine part of the equipment is essentially like that disclosed in my said prior patent, and its corresponding and equivalent parts are designated by the same reference characters. I will briefly describe the particulars in which the present machine corresponds with the prior patent, before explaining the new features of this invention.

Two counters 1 and 2 having shafts 3 and 4 are secured to a frame A, which is enclosed in a casing B. A slotted arm 5 on shaft 3 of counter 1 is connected by a pin 6 with a lever 7, and slotted arm 9 on shaft 4 of counter 2 is connected by a pin 10 with a lever 11. A carriage having side bars 14, 15 and a cross bar 16 slides in the frame and carries an actuating pin 17 connected by a flexible strap 18 with a spring-actuated drum 19. A driving lever 22, pivoted at 23 and having a cam slot 24 through which the actuating pin projects, is connected with a transmission member or tumbler plate 25 by a pivot 26. The transmission member has a central opening receiving a pin 27 carried by lever 7, and bounded on one side by an abutment edge 28 and on the other side by shoulders 29 and 30 at different distances from 28, whereby different degrees of movement are given to lever 5 for registering the appropriate values of nickels and dimes on counter 1. An upward extension 31 of such opening is adapted to admit pin 27, without giving any movement to lever 7, when the transmission member is shifted to bring its pin 32 into the open notch 13 in the end of lever 11.

Selector 33, sliding on studs 34 and 35, is coupled to the transmission member by a pin 36 on the selector in a slot 37 of the transmission member. This last detail embodies a departure from the showing of said patent, wherein equivalent

connection is made by a pin on the transmission member entering a slot in the selector. The selector is shifted proportionally to the width of the deposited coin, by fingers **40**, **41**, and linkage **42**, **45**, **47**, **49** and **50**, and is locked by one or the other of the teeth **53** on a lock lever **52** engaging a lug **54** on the selector by cooperation of the actuating pin **17** with the face **58** of a long arm **56** connected to lock **52**; all as described in said patent.

A further modification from the showing of said patent is found in the means to prevent over movement of lever **7**, and consists in shoulders **67** and **68** on the lever to cooperate with lug **66** on the selector. This lug is positioned beneath shoulder **68** when the fingers **40** and **41** are spread to the widest distance apart, so that lever **7** will not move at all while lever **11** adds a tally on counter **2**, and shoulder **67** limits movement of lever **7** to tally a single unit on counter **1** when the fingers are spread by entrance of a nickel, while the notch at the right of shoulder **67** permits movement of the lever sufficient to tally two units on the counter **1** when a dime is deposited and the fingers are not spread apart at all.

The register itself may have all the means, functions and capacities of that shown in my said prior patent, and in other machines of the same general type, including a latch or trip operable by the inserted coin for releasing the carriage, and grippers, one of which is shown at **69**, on the carriage, for grasping the coin and forwarding it into the register; and may be used for the same purposes there indicated and for all analogous purposes. Hence references in the present description to dimes, nickels and quarters as the coins intended to be deposited, are to be understood as illustrative and not in any wise as of limiting significance. Likewise illustrative, and not limiting, is the following description of a particular embodiment of sigal means and circuit closing means therefor associated with the register. The new step of the invention consists in the principles of such means, and the combination thereof with a register of the selective type, and is not limited to the details thereof. The important feature of the register machine, so far as this new step is concerned, is the fact that it has a selective device which occupies different positions and travels in relatively different paths when coins or the like of different denominations are deposited. This factor is availed of to close selectively dierent electric circuits and cause different signals to be operated when one or another of these different coins is deposited.

The selective circuit closer here shown, which is one of a number of equivalent devices which may be used, is an extension arm **70** extending from the connector member or tumbler plate **25** and partaking of the selecting and operating movements thereof. It may be observed that the parts of the machine, including such extension arm, are of metal and in good electrical conducting contact with one another, wherefore they are adapted to serve as part of an electric circuit.

On the removable cover C of the casing is mounted a block or plate **71** of insulating material having a boss **72** which projects through a hole in the plate. Contact studs **73**, **74** and **75** are embedded in the boss **72** and are connected respectively, by wires **76**, **77** and **78** with contacts **79**, **80** and **81** which protrude from the bottom of the insulating plate **71**. The contacts **73**, **74** and **75** are located, when the cover is in place on the casing, beside the several paths traversed by a terminal boss or offset **82** on circuit closer arm **70**. Thus, for example, when the machine is set to erceive a dime, the setting here illustrated, and the carriage is moved to draw in the dime and tally its value, the terminal **82** sweeps over contact **73**; when receiving a nickel, the terminal sweeps over contact **74**, and when a quarter is deposited, the terminal sweeps over contact **75**; completing the circuits selectively in which these contacts are included.

The several circuits are shown diagrammatically in Fig. 3. They include separately electric lamps **83**, **84** and **85**, and are all coupled to a suitable source of current **86**, which is connected by a conductor **87** with some electrically conductive part of the register, so that the circuit is completed through the structure of the register to the circuit closer **70**.

The register here shown is designed to be mounted stationary so that it may be used for prepayment of fares by passengers entering a street car, for instance. Its case is equipped with studs **88** adapted to be secured on the top of a cash box or other support. The contacts **79**, **80** and **81** are positioned to engage complemental contacts on the support, which are insulated from the latter and are in connection with the several circuits above described. The source of current and signal lamps may of course be located in any convenient places. The lamps may have distinctive colors, as red, white and blue, for instance, but it is within my contemplation to have them otherwise designated, or to use other visual signals than lamps, and other signals than visual ones.

When a coin, or equivalent ticket or token, is placed in the admission slot far enough to trip the latch by which spring-propelled movement of the carriage (**14**, **15**, **16**) is prevented, it first causes the transmission member to occupy the selective position appropriate to the diameter of the coin, and is then seized and drawn inward by the grippers **69**. Thus the terminal boss **82** is brought into circuit-closing engagement with the corresponding one of the contacts **73**, **74**, or **75**. These latter may be located at the ends of the respective paths in which the boss **82** may travel so as to be engaged by the boss at the end of travel of the carriage. Thus either circuit may be kept closed, and its signal continued in active condition until the register is normally reset or conditioned to receive the next coin.

Having thus described and explained one of the various possible embodiments of the invention, but without intending to limit my protection to such embodiment, I declare that what I claim and desire to secure by Letters Patent is:

1. The combination with a register adapted to receive objects having respectively different characteristics, of electric signal devices, separate contacts in circuit respectively with the several signal devices, and a circuit closer adapted to travel in different paths following deposit of articles having such different characteristics, said contacts being placed adjacent to said paths in position for selective engagement by said circuit closer during its traverse of one or another of said paths.

2. The combination with a register adapted to receive articles having different characteristics and including a transmission member movable in different paths consequent upon deposit of differently characterized articles, of a circuit closer connected to said transmission member, complemental electrical contacts in position to be

engaged selectively by said circuit closer during the movement thereof in different paths, electric signal devices in circuit severally with said contacts and a source of electric current in circuit with said signal devices and said circuit closer.

3. The combination with a register adapted to receive a number of articles differing from one another in a given dimension and including a selective transmission member adapted to travel in one or another of different paths consequent upon deposit of such differently dimensioned articles, of a circuit closing element connected to and movable with said transmission member, a source of electric energy in circuit with said circuit closer, separate electric signal devices in parallel circuit connection with said source and separate contacts in circuit severally with said signal devices and located beside the several paths of the circuit closer in position to be engaged severally and exclusively thereby when the circuit closer traverses one or another of said paths.

4. The combination of a receptacle having an entrance opening, separable members normally situated at a minimum distance apart in such relation to said entrance as to admit an inserted object between them and adapted to be separated by the object a distance proportional to a dimension of the object, a plurality of electrically operated signals, and circuit closing means in separate connection with the several signals placeable by said separable members in condition to close exclusively the circuit of one or another of said signals according to the dimension of the inserted object.

5. The combination with a receptacle for a series of objects differing from one another in a specific characteristic and having means for automatically forwarding such objects instantaneously upon their insertion into the receptacle, of selective signal actuating means controlled by the inserted object, upon the instant of insertion thereof into the receptacle, so that it occupies different positions, each corresponding to the distinguishing characteristic of one of such objects exclusively, and a plurality of signals external to the receptacle, connected for operation, each singly and exclusively of the others, by said signal actuating means according to the position of the latter.

6. A fare or ticket receiver adapted to receive different coins or similar valuable objects having respectively different physical characteristics, said receiver comprising means for automatically propelling the inserted objects away from the entrance point and manual means for resetting the propelling means in condition to propel a subsequently inserted object, combined with a plurality of distant indicators, each appropriated exclusively to a specific one of such different objects, and means variously placeable by inserted objects of different characteristics and operated by the propelling means for operating the appropriate signal at the end of travel of the propelling means.

WALTER S. JOHNSON.