

No. 753,418.

PATENTED MAR. 1, 1904.

J. O. MORRIS.
REGISTER.

APPLICATION FILED MAY 23, 1903.

NO MODEL.

Fig. 1.

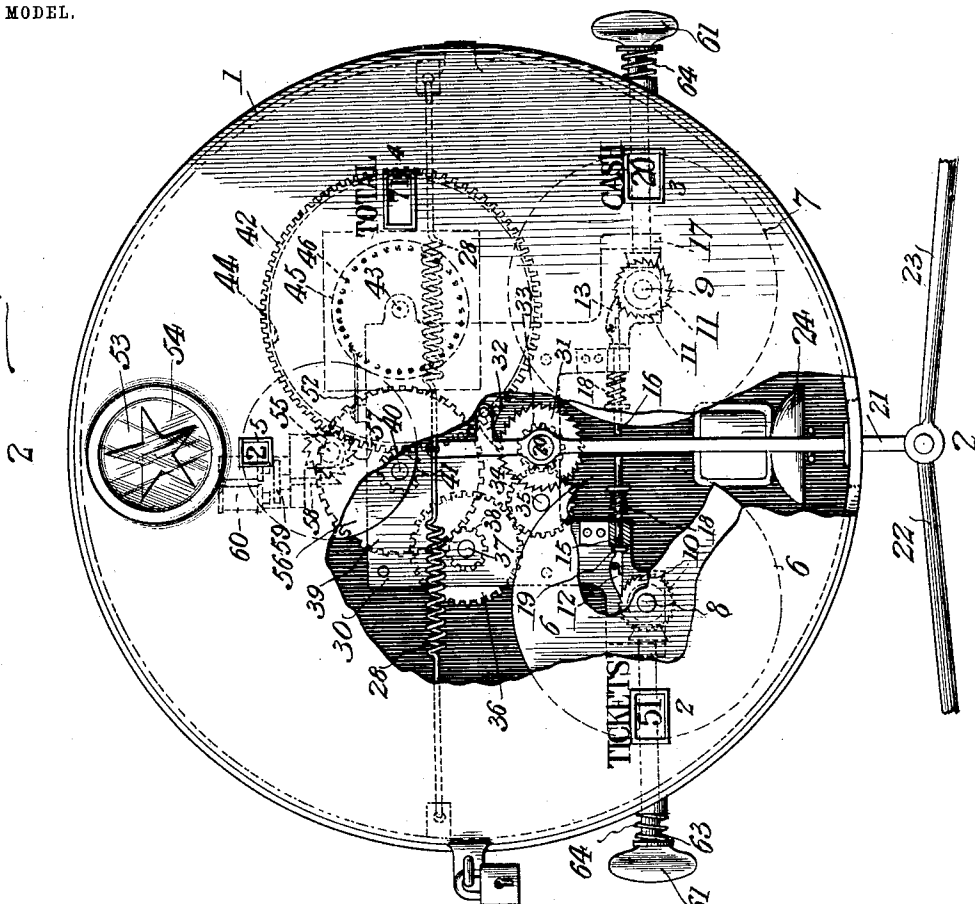
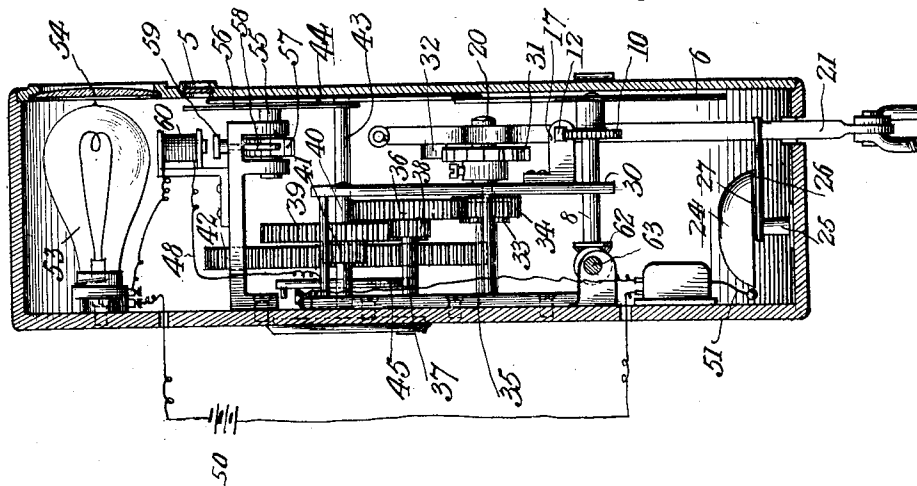


Fig. 2.



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JOHN O. MORRIS, OF RICHMOND, VIRGINIA, ASSIGNOR OF TWENTY-NINE FORTIETHS TO CREED M. FULTON, OF WASHINGTON, DISTRICT OF COLUMBIA, JOHN T. AHERN, OF MANCHESTER, VIRGINIA, AND JOHN A. TRAYLOR, OF RICHMOND, VIRGINIA.

REGISTER.

SPECIFICATION forming part of Letters Patent No. 753,418, dated March 1, 1904.

Application filed May 23, 1903. Serial No. 158,501. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. MORRIS, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Register, of which the following is a specification.

This invention relates to signaling mechanism.

The principal object of the invention is to provide a device which will attract the attention to an indicator, such as a fare or cash register, and thus render more certain the registration of amounts, tickets, checks, or other tokens received and supposed to be registered or indicated by a conductor or salesman.

A further object of the invention is to provide a device of this character in which the attention of each passenger, purchaser, or other person will be attracted to the fare or cash register, the mechanism being so arranged that at the end of fixed or variable periods of time or after the operation of the fare-register for a fixed or indeterminate number of times a signal will be displayed notifying the passenger or purchaser that he is entitled to some rebate or reward, such as a predetermined sum of money or number of tickets on the car, or cash, discount, or merchandise in a store.

A still further object of the invention is to provide in a device of this character for an audible alarm, which is operated manually by the movement of the indicating or registering mechanism and is set into operation by the closing of an electric circuit for the purpose of sounding a signal of pronounced character which will at once attract the attention of the passenger or purchaser.

With these and other objects in view, as will hereinafter more fully appear, the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size, and

minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a front elevation of a combined registering and signaling mechanism constructed in accordance with the invention. Fig. 2 is a transverse sectional elevation on the line 2 2 of Fig. 1.

Similar numerals of reference are employed to indicate corresponding parts throughout both figures of the drawings.

The preferred form of the device combines a fare-register with a signaling mechanism, and the various operative parts are inclosed within a circular casing 1, having display-openings 2, 3, 4, and 5, through which may be observed the number of tickets collected, the number of cash fares received, and the total of fares.

The ticket and cash-fare registering mechanism is of an extremely simple construction, a disk 6 being used to indicate the number of tickets collected and the disk 7 to indicate the number of cash fares. These two disks are mounted on separate shafts 8 and 9, respectively, and secured to said shafts are small ratchet-wheels 10 and 11, with which engage pawls 12 and 13, carried on guiding-bars 15 and 16, respectively. Each of the bars extends through a guiding-opening in a small bracket or lug 17, and said pins are pressed toward each other by helical compression-springs 18, which encircle the pins, the movement being limited by enlarged heads 19, formed at one end of each of the pins.

On a central shaft or arbor 20 is pivoted a pendent rod 21, which extends down through a suitable slotted casing and at its lower end is connected to two rods or flexible cords 22 and 23, running, respectively, to opposite sides of the car, the rod or cord 22 being pulled when a ticket is collected and the rod or cord 23 being pulled to register a cash fare received. In either case the rod 21 is moved against one of the pawl-carrying pins and ro-

tates the ratchet-wheel with which the pawl is associated, turning said pawl to the extent of a single tooth and moving successively-higher numerals on the disk to position in alinement with the display-openings.

In the lower portion of the casing is arranged a bell 24, the bell being mounted on a standard 25, to which is pivoted an arm 26, the outer end of said arm being forked and embracing the rod 21 and said arm being further provided with a small clapper or hammer 27, which is moved into contact with the gong each time the rod is operated. To the upper end of the rod 21, which extends somewhat above the shaft 20, is connected a pair of springs 28, the opposite ends of which are connected to stationary lugs at opposite sides of the casing, said springs serving to maintain the rod in a normally central position and after each operative movement to return the same to mid-position in order that it may be again operated in the same or in the opposite direction.

On the shaft 20, which has suitable bearings in the carrying-frame 30, is secured a ratchet-wheel 31, with which engages a pawl 32, carried by the movable rod 21, and at each operation of the rod the pawl moves the ratchet-wheel to the extent of a single tooth. If the movement of the rod is against the pin 16 for the registration of a cash fare, the pawl engages directly with one of the teeth of ratchet-wheel 21 and partly revolves the same. If the movement of the rod 21 is in the opposite direction, the pawl moves back to the extent of a single tooth and the centering-springs accomplish the turning movement as they return the rod to its normal position.

The shaft 20 carries a pinion 33, intermeshing with a somewhat larger pinion 34 on a shaft 35, and said larger pinion intermeshes with a gear 36 and a shaft 37, the shaft 37 also carrying a pinion 38, intermeshing with a gear 39 on a shaft 40. On the shaft 40 is a pinion 41, intermeshing with a large gear-wheel 42 on a shaft 43, this gear constituting the last of a system of reducing-gearing.

On the shaft 43 is secured a disk 44, on which are arranged numerals for registering the total amount of fares received, whether cash or tickets, or when used in connection with an ordinary form of cash-register for indicating the number of operative movements of the mechanism. The numerals on this disk are displayed through the visual opening 4. The shaft 43 also carries a metallic disk 45, having an annular row of openings 46, in any one of which the metallic pin 47 may be placed, or more than one pin may be used, if desired, and the adjustment may be quickly accomplished at the end of a run or at the end of a day at the car-barn, so that the conductor is unable to determine when the device is about to operate. This pin 47 constitutes one terminal of an electric circuit including wires 48, which

may lead through the casing and be connected to any suitable source of electrical energy, a conventional battery 50 being shown as a matter of illustration. The wires are connected to an electromagnetically-actuated bell-clapper 51, arranged adjacent to the gong 27 and adapted on the closing of the circuit to sound an alarm which will attract the attention of the passenger or purchaser, the closing of the circuit being accomplished when the pin in its rotative movement comes into engagement with a fixed contact-spring 52, carried by and insulated from the supporting-frame. In the upper portion of the casing is arranged an incandescent lamp 53, also included in the circuit, the lamp glowing when the circuit is closed and being visible through a lens 54, disposed in front of the opening. This lens or translucent panel is preferably of a distinctive form, so that it may be readily distinguished from other lights, and while shown in the drawings in the form of a star it is to be understood that any other figure may be adopted, or in the case of the use of the device in connection with a cash-register the lens may contain a likeness of the proprietor or any other person, as desired.

On the frame of the clockwork or a suitable bracket provided for the purpose are formed bearings for a short shaft 55, on which is secured a dial 56, bearing numerals, and the dial is turned to display the numerals in alinement with the opening 5 in the front of the casing.

On the shaft 55 is secured a ratchet-wheel 57, with which engages a pawl 58, carried by an armature 59, disposed within the field of force of an electromagnet 60, which also is included in the circuit controlled by the pin 47, so that at each closing movement of the circuit the magnet will be energized, the armature attracted, and the ratchet-wheel moved to the extent of a single tooth.

In the device shown in Figs. 1 and 2 I have illustrated turning-knobs 61, which may be connected in the usual manner to the shafts 8 and 9 in order to manually adjust the two disks 6 and 7 to a zero-point at the end of each trip or at such time as may be desired. The mechanism in the present case includes a bevel-gear 62, secured to each of the shafts, and the turning-knobs 61 are mounted on short shafts 63, also carrying bevel-gears, which may be intermeshed with the gear 62 when the knobs are pushed in against the resistance offered by small helical compression-springs 64.

The registering-disks are shown in the simplest form, and it will be understood that registering mechanism of any desired character may be employed in place of the disks.

The structure is of especial value in calling the attention of passengers and customers, and thus rendering it compulsory on the part of the conductor or salesman to ring up or register all receipts, and at the same time it may

keep a duplicate tally of fares collected or the number of transactions made by recording the number of times the cash-drawer of a register is opened. It is also of considerable value for
 5 advertising purposes when special brands of goods are to be introduced.

Having thus described the invention, what is claimed is—

1. In registering mechanism, a casing having
 10 visual openings, a pair of initial registering-disks bearing indicating-marks, ratchet-wheels operatively connected to the disks, a pair of oppositely-disposed pawl-carrying bars for operating the ratchets, a pivoted oper-
 15 ating-rod, a pair of centering-springs normally maintaining the rod in a central position, a train of gearing, a pawl-and-ratchet mechanism operable by the rod and connected to the train of gearing, and an indicating-disk
 20 driven by the train of gearing and serving to indicate the total number of movements of the rod in either direction.

2. In registering mechanism, a pair of registering-disks, shafts carrying said disks,
 25 ratchet-wheels carried by the shafts, a pair of oppositely-directed spring-pressed bars, pawls carried by said bars and adapted to engage the ratchet-wheels, a pivoted rod movable in
 30 either direction for operative engagement with one or other of the pawl-carrying bars, a pair of springs normally maintaining the rod in a central position, a shaft on which the rod is pivoted, a ratchet-wheel carried by the shaft, a pawl carried by the rod and en-
 35 gaging said ratchet-wheel, a train of gearing of which the initial member is formed by the rod-carrying shaft, a movable circuit-closer connected to and revolved by the train of gearing, a totals-registering disk also driven
 40 by the train of gearing, an electric circuit of

which said movable circuit-closer forms one terminal, and a signal included in said circuit.

3. In a device of the class specified, a casing, a pair of primary registering-disks, ratchet-
 45 wheels carried by the disks, a pair of oppositely-directed bars guided within the casing, pawls carried by the bars and engaging the ratchet-disks, a train of gearing, an initial shaft forming a part of the train of gearing, a rod pivoted on the shaft and hung between
 50 the two pawl-carrying bars, pawl-and-ratchet mechanism connecting the bar and the shaft on which it is hung, a totals-registering disk driven by the train of gearing, a metallic disk also driven by the train of gearing and pro-
 55 vided with an annular row of openings, a pin adjustable through any one of said openings and forming the terminal of an electric circuit, a circuit including a source of electrical energy, a stationary contact forming the op-
 60 posite terminal to said circuit, and a signal and alarm included in said circuit.

4. In a device of the class specified, the combination with registering mechanism, of an
 65 alarm-gong, means connecting the registering mechanism to the clapper of the gong for sounding the alarm each time the registering mechanism is operated, a movable circuit-closer receiving motion from the registering
 70 mechanism, an electric circuit of which said circuit-closer forms one terminal, and an electromagnetically-actuated clapper included in the circuit and disposed adjacent to the gong.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
 75 the presence of two witnesses.

JOHN O. MORRIS.

Witnesses:

J. ROSS COLHOUN,
 JNO. E PARKER,