

April 24, 1928.

C. W. KETTEMAN

1,667,121

REGISTERING MECHANISM

Filed Feb. 26, 1925

2 Sheets-Sheet 1

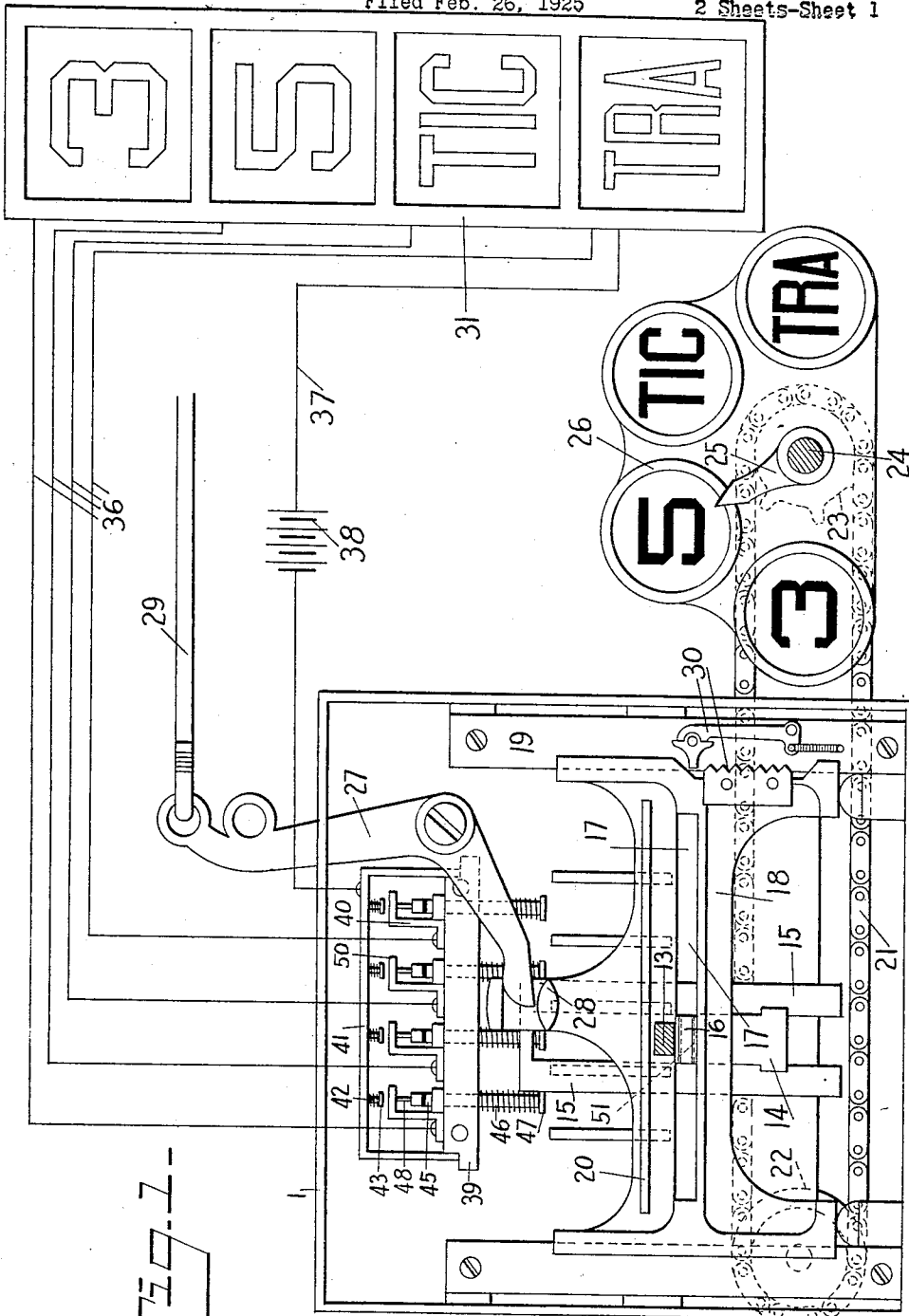


Fig. 1--

INVENTOR.
CHARLES W. KETTEMAN
Edward Red
ATTORNEY.

April 24, 1928.

C. W. KETTEMAN

1,667,121

REGISTERING MECHANISM

Filed Feb. 26, 1925

2 Sheets-Sheet 2

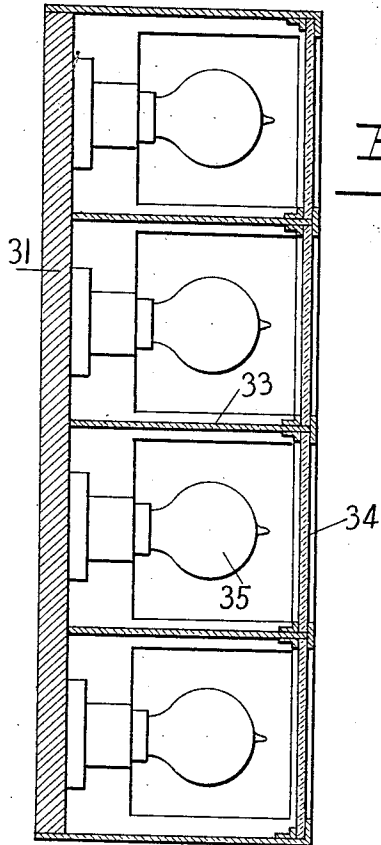


Fig. 3.

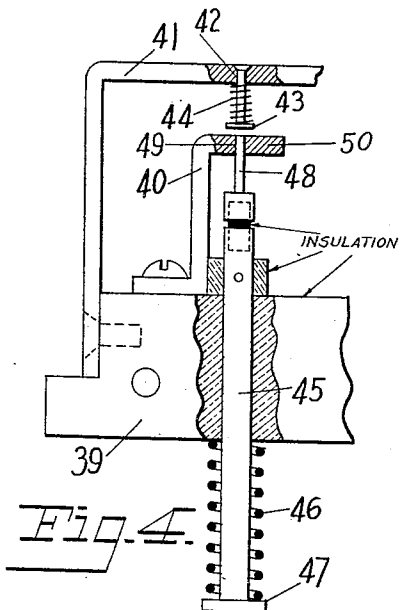


Fig. 4.

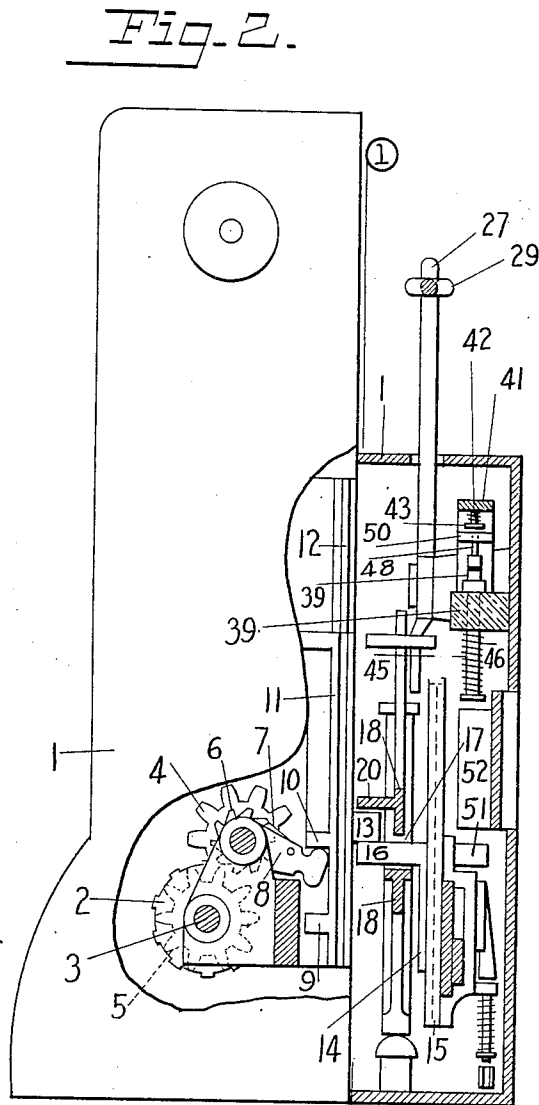


Fig. 2.

INVENTOR.
CHARLES W. KETTEMAN.
Carr & Red.
ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES W. KETTEMAN, OF DAYTON, OHIO, ASSIGNOR TO OHMER FARE REGISTER COMPANY, OF DAYTON, OHIO, A CORPORATION OF NEW YORK.

REGISTERING MECHANISM.

Application filed February 26, 1925. Serial No. 11,728.

This invention relates to registering mechanisms and more particularly to an indicator for use in connection with such mechanisms.

5 One object of the invention is to provide, in connection with a registering mechanism having means for registering a plurality of different items, an electrically operated indicator which may be mounted at a point
10 more or less remote from said registering mechanism and which will be automatically controlled by the operating device for said registering mechanism to cause the same to indicate the particular item which is registered upon each operation of said registering
15 mechanism.

A further object of the invention is to provide such a mechanism which will be simple in its construction and operation and
20 which may be applied to registering mechanisms of a known construction without material modification thereof and with the addition of but a few parts.

Other objects of the invention will appear as the mechanism is described in detail.

In the accompanying drawings Fig. 1 is an elevation of a mechanism embodying my invention showing the registering mechanism in section; Fig. 2 is a side elevation
30 of the registering mechanism, partly broken away; Fig. 3 is a vertical sectional view of the indicator; and Fig. 4 is a side elevation, partly broken away, of a portion of the controlling device for said indicator.

35 In these drawings I have illustrated one embodiment of my invention and have shown the same as applied to a fare register of the type commonly known as the Ohmer fare register and which is illustrated and described in Patent No. 872,537, granted
40 December 3, 1907, to J. F. Ohmer and E. H. Breidenbach. It will be understood, however, that this particular embodiment of the device has been chosen for the purposes of illustration only and that the invention may take various forms and that it may be applied to registering mechanisms of various
45 kinds and utilized for indicating the items which such registering mechanisms may register.
50

The fare register to which the indicating mechanism is applied forms no part of the present invention except in so far as it enters into combination with the indicating mechanism and I will describe only so much of its
55 construction and operation as will be necessary to an understanding of the indicating mechanism. The registering mechanism comprises a casing 1 within which are mounted a plurality of counters each adapted
60 to register an item of a different class. I have here shown but one counter but it will be understood that each counter may comprise one or more counter wheels and that the several counters are arranged in axial
65 alinement on a shaft 3. Each counter is provided with an actuating device which comprises a gear 4 meshing with a corresponding gear 5 secured to the counter, and having rigidly connected therewith a ratchet
70 wheel 6 which is actuated by a pawl 7 carried by an arm or pawl carrier 8 pivotally mounted for movement about the axis of the ratchet wheel 6. The outer end of this arm
75 or pawl carrier 8 projects between lugs 9 and 10 forming part of a vertically movable member 11 which is slidably mounted in guides 12 and which is provided with a rearwardly extending lug 13. It will be understood that the actuating device for each
80 counter is separate from the actuating devices for the other counters and that each such actuating device includes a vertically movable member 11 and lug 13. Suitable operating mechanism is provided for selecting
85 the particular counter which is to be actuated and then imparting operative movement to the actuating device for that counter. This mechanism consists of an operating member 14 which is slidably mounted for
90 vertical movement in a carriage 15 which in turn is mounted for transverse movement, that is, movement substantially parallel with the axis of the counters, so as to bring the operating member into operative relation
95 with the actuating device for the selected counter before vertical movement is imparted to the operating member. Rigidly secured to the operating member 14 is a forwardly extending finger or lug 16 which projects
100

through and travels in a slot 17 extending lengthwise of a plate or frame 18 which is slidably mounted at its ends on vertical guides 19. The finger or lug 16 of the operating member projects forwardly through the slot 17 and is so arranged that it may move into an overlapping position just beneath the lug 13 of any one of the counter actuating devices so that the vertical movement of the operating member will cause the vertically movable member of the actuating device to be actuated. The frame or plate 18 has a forwardly extending flange 20 which overlies the several lugs 13 so as to cause the actuating devices to be restored to their normal positions when the frame or plate 18 returns to its normal or lowermost position. Transverse movement is imparted to the carriage 15, along the slot 17, by means of a chain 21 which extends about a pulley or sprocket wheel 22 at one end of the frame 18 and also extends about a sprocket wheel 23 arranged outside of the casing 1 and secured to a setting shaft 24 to which is also secured a pointer 25 arranged to travel over a dial 26 which is provided with a series of indications corresponding to the several classes of items adapted to be registered by the respective counters of the registering mechanism. This shaft 24 extends to a point where it may be conveniently manipulated by the operator. Vertical movement is imparted to the frame or plate 18, to impart vertical movement to the operating member 14, in whatever position it may be, by means of a bell crank lever 27, one arm of which engages between lugs 28, carried by an upwardly extending part of the frame or plate 18, and the other arm of which is connected with a cord 29 which extends to a point at which it may be conveniently grasped by the operator. A full stroke mechanism 30 makes it necessary to complete the upward movement of the frame or plate 18 and the actuation of the counter before the parts can return to their normal positions.

A registering mechanism of this character is usually provided with visual indicators, which are not here shown but which are usually so arranged that they are visible only from the front of the machine. It frequently happens that a register of this character must be, for the sake of convenience, mounted in a position in which the indications on the face thereof are not as readily visible as is desired. In order that the amount of the item registered may be indicated not only to the passenger or other person making payment but to an inspector who is interested in checking up the operation of the register, I have provided in connection with the registering mechanism an illuminated indicator having means controlled by the selection and operation of the counters for illuminating an indication corresponding to

the item which is registered by the counter. This indicating device is of such a character that it may be located at any desired point with relation to the registering mechanism as its connections therewith consists merely of the necessary conductors or wires. As here shown, the indicator consists of a cabinet 31 which is divided by partitions 33 into a plurality of compartments, these compartments corresponding in number to the number of classes of items the registering mechanism is to handle, in the present instance 4. One wall of each compartment of the cabinet is closed by a plate of glass or other translucent material 34 which is provided with figures or letters indicating an item of a class registered by the registering mechanism. Mounted in each compartment is an electric lamp 35 which is so separated from the other compartments by the partitions 33 that it will illuminate the indication of its own compartment only. Each lamp is provided with a separate circuit, these circuits consisting in the present instance, of wires or conductors 36 extending from the respective lamps to a controlling device within the register casing, and a single return conductor or wire 37 leading from said controlling device to the several lamps. Connected with the conductor 37 is a suitable source of electrical energy, such as a battery 38.

The controlling device, which is arranged in the casing of the register, is of such a character that the circuit will be closed through the lamp for that indication which corresponds to the item which has been selected and registered by the registering mechanism. As here shown, this controlling device consists of a plurality of circuit breakers and closers, one for each lamp. The controlling mechanism as a whole is mounted on a base 39 carried by the back wall of the register cabinet and which is preferably of insulating material. Rigidly secured to the base 39 are a plurality of brackets 40 of conducting material, which brackets are connected by means of the respective conductors 36 with the several lamps. Mounted upon the insulated base 39 is a frame 41 of conducting material, the upper portion of which extends lengthwise of the base and is spaced a short distance above the brackets 40. Yieldably mounted upon the frame 41, adjacent to each bracket 40, is a contact member electrically connected with the frame. As here shown, this contact member comprises a pin 42 slidably mounted in the longitudinal portion of the frame and having at its inner end a head 43 which is spaced a short distance from the upper end of the adjacent bracket 40 and is yieldably held in its lowermost position by a spring 44. Slidably mounted in the base 39 are a series of plungers 45, one for each bracket 40 and

these plungers are held normally in their lowermost positions by means of springs 46 confined between the lower surface of the base and heads 47 secured to the lower ends of the plungers. Rigidly secured to but insulated from each plunger is a contact member or pin 48, which in effect forms a part of the plunger and which is slidably mounted in an opening 49 formed in an overhanging part 50 of the adjacent bracket 40. The pin 48 is in electrical contact with the bracket, which is connected in the lamp circuit. Consequently when the plunger is moved upwardly and the contact pin 48 brought into contact with the head 43 of the yieldable contact member which lies above the same the circuit will be closed through the lamp of that indicator corresponding to that particular circuit breaker and closer. The several plungers 45 are arranged in the rear of the respective vertically movable members 11 of the actuating devices. The operating member 14 for the actuating devices is provided with a rearwardly extending projection or lug 51, which normally cooperates with guides 52 to accurately position the operating member with relation to the actuating devices but which is of such a character that as the operating member approaches the upper limit of its movement it will engage the plunger 45 of one of the circuit breakers and closers and thus close the circuit through the corresponding lamp, which lamp will illuminate the indication corresponding to the item registered by the operation of the corresponding actuating device. It will be apparent, therefore, that the member 14 of the operating mechanism for the register serves both to select and actuate that finger which corresponds to the item which is to be registered and also to select and operate the circuit breaker and closer which controls the illumination of the indication corresponding to that same item.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination with a registering mechanism having a plurality of counters adapted to register different items, an operating member having both horizontal and vertical movement to select and actuate that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering devices and having a plurality of indications corresponding to the items to be registered by said counters, a separate lamp for illuminating each

indication, a circuit for each lamp, a circuit breaker and closer for each circuit, and a part connected with said operating member and so arranged with relation to said circuit breakers and closers that the horizontal movement of said operating member will bring said part into operative relation with the circuit breaker and closer of that indication which corresponds with the item to be registered and the vertical movement of said operating member will actuate said circuit breaker and closer to close the circuit through the lamp of that indication.

2. The combination with a registering mechanism comprising a plurality of counters adapted to register different items, a separate actuating device for each counter, an operating member and means for moving said operating member into operative relation with the actuating device of a selected counter and for causing said operating member to impart operative movement to the selected actuating device, of an indicating device comprising a plurality of indications corresponding to the items to be registered by said counters, means comprising a circuit for separately exhibiting each indication, a circuit breaker and closer for each circuit, each circuit breaker and closer comprising a movable member, a part carried by said operating member and movable therewith to select and actuate the movable member of the circuit breaker and closer for that indication corresponding with the counter which is selected and actuated by said operating member.

3. The combination with a registering mechanism comprising a plurality of counters adapted to register different items, and an operating member for said counters having movement in one direction to select the counter which is to be operated and having movement in another direction to cause the operation of that counter, of an indicating device comprising a plurality of indications corresponding to the items to be registered by said counters, an illuminating device for each indication comprising a circuit and a circuit breaker and closer, said operating member having a part to actuate said circuit breaker and closer and said circuit breakers and closers being so arranged that the selecting movement of said operating member will bring said part into operative relation with the circuit breaker and closer for the illuminating device of that indication corresponding to the item of the counter which is to be actuated and the operative movement of said operating member will cause said circuit breaker and closer to be actuated to close the circuit through said illuminating device.

4. The combination with a registering mechanism having a plurality of counters adapted to register different items, and oper-

- ating mechanism comprising means for selecting and actuating that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering device and having a plurality of indications corresponding to the items to be registered by said counters, means for separately exhibiting said indications comprising a circuit for each indication, a circuit breaker and closer for each circuit, said circuit breakers and closers being arranged in line one with the other, and a part connected with said operating mechanism and arranged to be moved selectively into operative relation with the several circuit breakers and closers as said operating mechanism is manipulated to select the counter to be actuated, and to actuate circuit breaker and closer when said operating mechanism is manipulated to actuate said counter.
5. The combination with a registering mechanism having a plurality of counters adapted to register different items, and an operating mechanism comprising means for selecting and actuating that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering device and having a plurality of indications corresponding to the items to be registered by said counters, means for separately exhibiting said indications comprising a circuit for each indication, a circuit breaker and closer for each circuit, each circuit breaker and closer comprising a plunger, a contact member actuated by said plunger, and a second contact member arranged to be engaged by the first mentioned contact member, and a part connected with said operating mechanism and arranged to be moved into line with a selected one of said plungers by the operation of said operating mechanism to select the counter to be actuated and to be moved into operative engagement with said plunger by the operation of said operating mechanism to actuate the selected counter.
6. The combination with a registering mechanism having a plurality of counters adapted to register different items, and an operating mechanism comprising means for selecting and actuating that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering device and having a plurality of indications corresponding to the items to be registered by said counters, means for separately exhibiting said indications comprising a circuit for each indication, a circuit breaker and closer for each circuit, each circuit breaker and closer comprising a plunger, a contact member connected with but insulated from said plunger, a guide for said contact member having electrical connection therewith and connected in the corresponding circuit, a second contact member arranged to be engaged by the first mentioned contact member and also connected in said circuit, and a part connected with said operating mechanism and arranged to be moved into line with a selected one of said plungers by the operation of said operating mechanism to select the counter to be actuated and to be moved into operative engagement with said plunger by the operation of said operating mechanism to actuate the selected counter.
7. The combination with a registering mechanism having a plurality of counters adapted to register different items, and an operating mechanism comprising means for selecting and actuating that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering device and having a plurality of indications corresponding to the items to be registered by said counters, means for separately exhibiting said indications comprising a circuit for each indication, a controlling device for the several circuits comprising a base, a plurality of plungers slidably mounted on said base, a contact member carried by each plunger, other contact members arranged to be engaged by the respective first mentioned contact members, the corresponding contact members being connected in the respective circuits, and a part connected with said operating mechanism for movement thereby into operative relation with one of said plungers when setting movement is imparted to said operating mechanism and to actuate said plunger when operating movement is imparted to said operating mechanism.
8. The combination with a registering mechanism having a plurality of counters adapted to register different items, and an operating mechanism comprising means for selecting and actuating that one of said counters corresponding to the item to be registered, of an indicating device adapted to be mounted at a point remote from said registering device and having a plurality of indications corresponding to the items to be registered by said counters, means for separately exhibiting said indications comprising a circuit for each indication, a controlling device for said circuits comprising a base of insulating material, a series of brackets of conducting material mounted on said base, contact members slidably mounted in the respective brackets, plungers slidably mounted in said base and connected with and insulated from said contact members, a frame of conducting material mounted on said base, yieldable contact members carried by said frame and arranged to be engaged by the re-

spective first mentioned contact members, said brackets being connected with one side of the circuits for the respective lamps and said frame being connected with the other side of said circuits, and a part so connected with said operating mechanism that it will be caused to actuate that plunger which controls the circuit for the exhibiting means of the indication corresponding to the item registered. 10

In testimony whereof I affix my signature hereto.

CHARLES W. KETTEMAN.