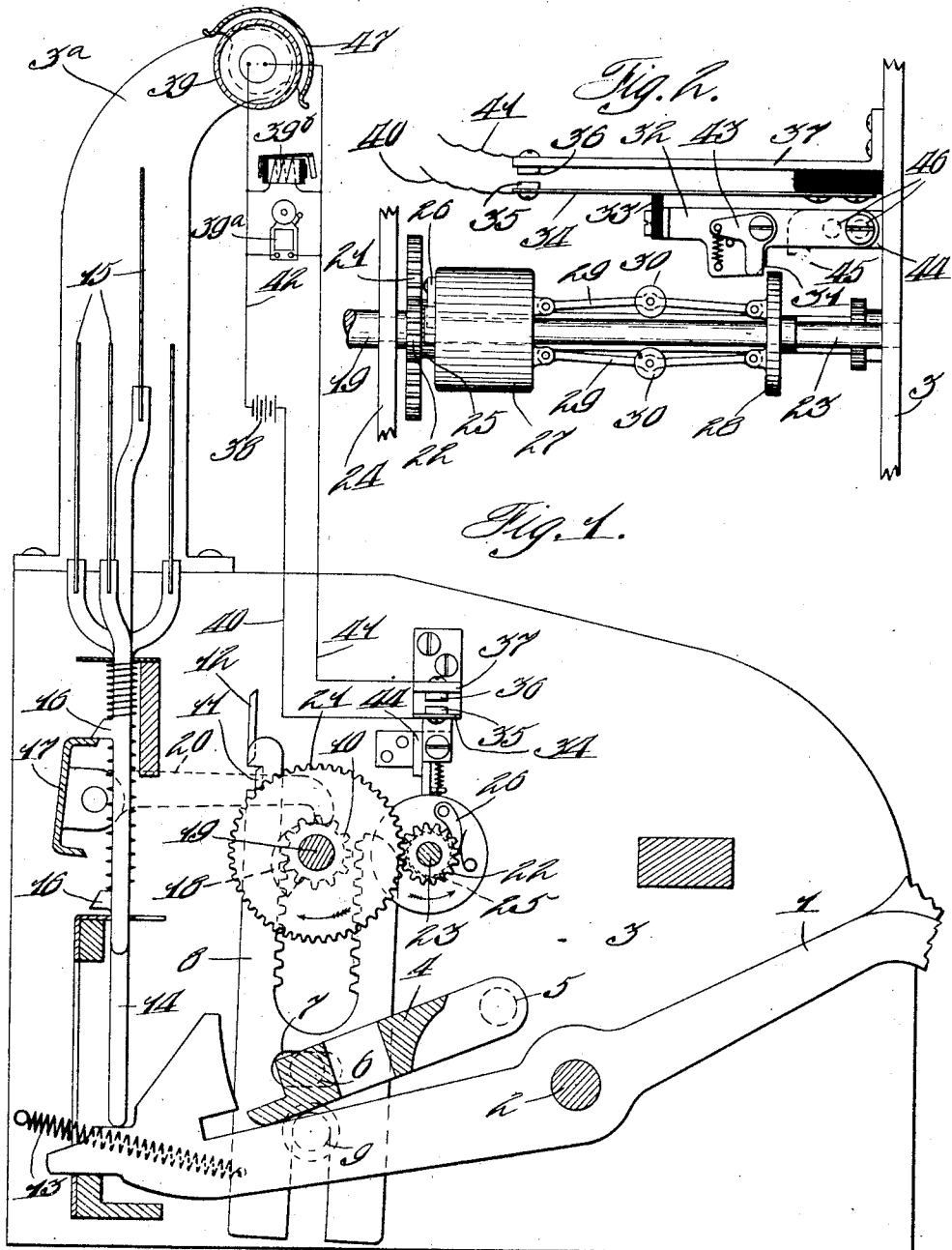


M. JACOB.
 SIGNALING DEVICE FOR CASH REGISTERS.
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1,037,917.

Patented Sept. 10, 1912.



Witnesses
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SIGNALING DEVICE FOR CASH-REGISTERS.

1,037,917.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed October 17, 1908. Serial No. 458,304.

To all whom it may concern:

Be it known that I, MAX JACOB, a subject of the Emperor of Germany, residing at Berlin, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Signaling Devices for Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash registers and has more particular relation to the indicating mechanism for same.

The principal object of this invention is to provide a signal in the form of an illuminating device which is lighted by the operation of the machine and extinguished independently of same.

Another object of this invention is to regulate the duration of operation of the illuminating device.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts, the essential elements of which are set forth in appended claims and a preferred form of embodiment of which is hereinafter described with reference to drawings which accompany and form part of this specification.

Of said drawings: Figure 1 represents a transverse section through the type of machine shown in the patent to Thomas Carney No. 497,860, May 23, 1893, with the present invention applied thereto; and Fig. 2 represents a partial front elevation of the centrifugal device for closing the contact of the illuminating device.

Described in general terms the invention comprises an incandescent lamp or lamps located in juxtaposition to the indicators of the machine, the contacts of which are temporarily closed by a centrifugal device under the control of the operating mechanism of the machine, or some movable part thereof. This centrifugal device is constructed to continue in operation after all of the moving parts of the machine have come to rest and after it has spent its force to automatically break the contact to extinguish the lamp or lamps. The flashing of the lamp attracts the attention of the customers to the machine and the position of the lamp relative to the indicators insures the inspection of the latter, which are prominently displayed by the rays of light from the lamp.

The operating mechanism of the machine comprises a series of manipulative devices or keys 1 which are pivotally mounted upon a transverse shaft 2 secured to the side frames 3 of the machine. Extending over all of the keys 1 and operated by any one of them is a universal bar or coupler 4, which is pivoted at 5 to the side frames 3. Projecting laterally from the bar or coupler 4 is a pin 6 which plays in an elongated slot 7 formed in a double rack bar 8. This bar at its lower end is bifurcated and straddles a pin 9 extending from one of the side frames 3, which acts as a guide when the rack bar 8 is reciprocated by the oscillatory movement of the coupler 4 imparted thereto by the keys 1. As the rack bar 8 is elevated by the downward movement of any of the keys 1, the teeth on the left hand portion of said bar will engage a pinion 10 and rotate the latter in the direction of the arrow, shown in Fig. 1. This portion of the bar 8 is held in engagement with the pinion 9 during the upward movement of the bar by a lug 11, bent backward from it and engaging the forward side of a projection 12 extending inwardly from one of the side frames 3. As the key 1 reaches the limit of its downward movement, the lug 11 passes above the projection 12 and is drawn to the rear thereof by a spring 13 which has passed above the pin 9, the latter acting as a pivot as well as a guide pin. By this movement of the rack bar 8 the teeth on the forward portion of said bar engage the pinion 10 and as the bar is moved downwardly and the key upwardly, the lug 11 will ride on the rear side of the projection 12, thereby holding the forward portion of the bar in engagement with the pinion 10, until the end of the upstroke of the key, when the spring 13 will return the bar 8 to the position shown in Fig. 1.

Mounted to rest upon the rear ends of the keys 1 are standards 14, which carry at their upper ends indicators 15 corresponding to the various denominations of the keys 1. Projecting rearwardly from each standard is a lug 16 arranged to be engaged on its under side by an oscillating supporting frame 17 to hold any of the elevated tablets in exposed position. This frame 17 is rocked upon each operation of the machine by a cam 18, secured to a shaft 19 to which is also secured the pinion 10, engaging an

arm 20 projecting forwardly from the frame. The cam 18 and arm 20 are shown in broken lines as they are located upon the opposite side of the machine from that shown in Fig. 1.

It is to be understood that the amount keys are provided with arms for actuating the accounting mechanism as fully shown and described in the previously mentioned Carney patent.

Secured to the shaft 19 is a large gear wheel 21 which meshes with a small pinion 22 loosely mounted upon a stub shaft 23, the latter being supported at its ends by one of the side frames 3 and a partition 24. A ratchet wheel 25 is suitably fastened to the pinion 22 and is engaged by a spring pressed pawl 26 pivoted to a weight 27 which is also loosely mounted upon the stub shaft 23. This weight forms one part of an ordinary centrifugal device and is connected to a disk 28 on said stub shaft by spring rods 29, which carry weights 30 at their central portions.

It will be seen from the above description that as the gear 21 is rotated by the operation of any one of the keys 1, it will rotate the weight 27 in the direction of the arrow, Fig. 1, through means of the pinion 22, ratchet 25 and pawl 26. The ratio between the gear 21 and pinion 22, is such that upon the rotation of the gear 21, the weight 27 will gain sufficient momentum to expand the spring rods 29 by centrifugal force and thereby draw the disk 28 toward the weight 27, as is well known in this style of devices. The momentum of the weight 27 will cause it to continue to operate after other parts of the machine have come to rest. This is allowed by the ratchet and pawl connection. After the centrifugal device has spent its force the parts thereof will assume the position shown in Fig. 2 by means of the spring rods 29. As the disk 28 is drawn toward the weight 27, it will engage the beveled edge 31 of a pivoted lever 32, and force the outer free end thereof upwardly. The outer end of the lever 32 carries an insulated block 33 which contacts with the bottom of a leaf spring 34 forming one part of a circuit maker and forces a contact point 35 carried by the outer end of said spring into engagement with a contact point 36 carried by an arm 37 secured to the side frame thereby forming a circuit from a source of electrical energy 38 through the lamp 39, see Fig. 1, by means of wires 40, 41 and 42. The spring 34 is secured to an insulated block which in turn is secured to an arm 37. The lamp 39 is suitably mounted in standards 3^a extending upwardly from the side frames 3. As the disk 28 moves toward the weight 27, it wipes by a spring drawn pawl 43, but as the disk 28 moves in the opposite direction by means

of the spring rods 29, the pawl 43 rides upon the edge of the disk until the latter passes beyond said pawl when the leaf spring 34 will suddenly force the lever 32 carrying the pawl into the position shown in Fig. 2. By this construction the circuit through the lamp 39 is made gradually while it is broken suddenly, which eliminates the sparking that would occur if the contact between the points 35 and 36 was gradually broken. The lever 32 is pivoted to an arm 44 projecting inwardly from the right hand side frame, the said arm being provided with a lip 45 which passes under the lever 32 and supports the latter. The arm 44 is also provided with a plurality of screw holes 46 so that the lever 32 may be adjusted longitudinally thereby varying the length of time the points 35 and 36 are in contact and consequently the duration of operation of the lamp 39.

A reflector 47 partially surrounds the lamp 39 so as to throw the rays of light from the lamp to the indicator or indicators in elevated position in order to more prominently display them. It is to be understood that the reflector 47 may be left off in which case the flashing of the lamp 39 would be more conspicuous.

By the phrase "movable part of the machine," it is intended to cover broadly any part moved directly by the operating mechanism of the machine or incidental thereto, such as the release of a cash drawer or a movable cover therefor.

The invention has been shown as applied to a particular type of cash register well known on the market, but obviously it may be used with many other types of machine. Nearly all machines of the kind have some part or operating mechanism given an excursion at each actuation of the machine, and such movable part or mechanism may readily be used to drive the centrifugal device. The invention is considered to cover all such adaptations.

It is clear that a bell, annunciator or any other usual type of electrical signal may be used in place of the lamp to call attention to the indication, and two forms of such signals have been shown in Fig. 1 in parallel with the lamp, being indicated by reference numerals 39^a and 39^b. The closing of the circuit through the source of electrical energy 38 would cause an illumination of lamp 39 or an operation of either of the signals 39^a or 39^b and it will be understood that in practice probably one only of the signals would be used, they being shown in parallel merely for convenience.

While the form of mechanism herein shown and described, is admirably adapted to fulfil the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of em-

bodiment herein disclosed for it is susceptible of embodiment in various forms all coming within the scope of the claims which follow:

5 What is claimed is:

1. In a cash register, the combination with a movable part thereof, of a signal, and means for operating said signal, constructed to maintain said signal in operation for a predetermined period, and to permit said signal to return abruptly to a non-signaling condition, with connections from said movable part to actuate said operating means.

2. In a cash register, the combination with a movable part thereof, of a signal, an operating means for said signal, including a momentum operated device constructed to maintain said signal in operation for a predetermined period, and to permit said signal to be returned abruptly to a non-signaling condition, with connections from said movable part to actuate said operating means.

3. In a cash register, the combination with a movable part thereof, of an illuminating device and means controlled by the movable part for bringing the illuminating device into operation and maintaining such operation after the movable part has come to rest and subsequently and automatically discontinuing such operation.

4. In a cash register, the combination with a movable part thereof, of a series of indicators, an illuminating device for attracting attention to the indicators, and means controlled by said movable part for bringing the illuminating device into operation and maintaining such operation after the movable part has come to rest and subsequently and automatically discontinuing such operation.

5. In a cash register, the combination with a movable part thereof, of a series of indicators, an illuminating device for attracting the attention to the indicators, and a centrifugal device controlled by the movable part for operating the illuminating device.

6. In a cash register, the combination with a movable part thereof, of a signal, and a centrifugal device controlled by the movable part for operating the signal and continuing such operation after the movable part has come to rest and then subsequently and automatically discontinuing the operation of the signal.

7. In a cash register, the combination with an operating mechanism, of a series of indicators, an illuminating device for attracting attention to the indicators, and a centrifugal device controlled by the operating mechanism for bringing the illuminating device

into operation, the centrifugal device being so constructed as to continue the operation of the illuminating device after the operating mechanism has come to rest and then to automatically discontinue the operation of said device.

8. In a cash register, the combination with an operating mechanism, of a series of indicators, a signal controlled by the operating mechanism for attracting the attention to the indicators, and means for regulating the duration of operation of the signal.

9. In a cash register, the combination with an operating mechanism, of a series of indicators, an illuminating device controlled by the operating mechanism for attracting the attention to the indicators, and means for regulating the duration of operation of said illuminating device.

10. In a cash register, the combination with an operating mechanism, of a series of indicators, an illuminating device controlled by the operating mechanism, means for throwing the rays of the illuminating device upon the indicators, and means for regulating the duration of operation of said illuminating device.

11. In a cash register, the combination with an operating mechanism, of a series of indicators, an illuminating device controlled by the operating mechanism, a reflector for throwing the rays of the illuminating device upon the indicators, and means for regulating the duration of operation of said illuminating device.

12. In a cash register, the combination with a series of keys, a signal controlled thereby, and means for regulating the duration of operation of the signal.

13. In a cash register, the combination with a series of keys, an illuminated device controlled thereby, and means for regulating the duration of operation of said illuminated device.

14. In a cash register, the combination with a movable part thereof, of a series of indicators, an illuminating device for attracting the attention to the indicators, a centrifugal device controlled by said movable part, and means actuated by the centrifugal device for operating the illuminating device gradually and then suddenly extinguishing the said device.

In testimony whereof I affix my signature in the presence of two witnesses.

MAX JACOB.

Witnesses:

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HENRY HASPER.