

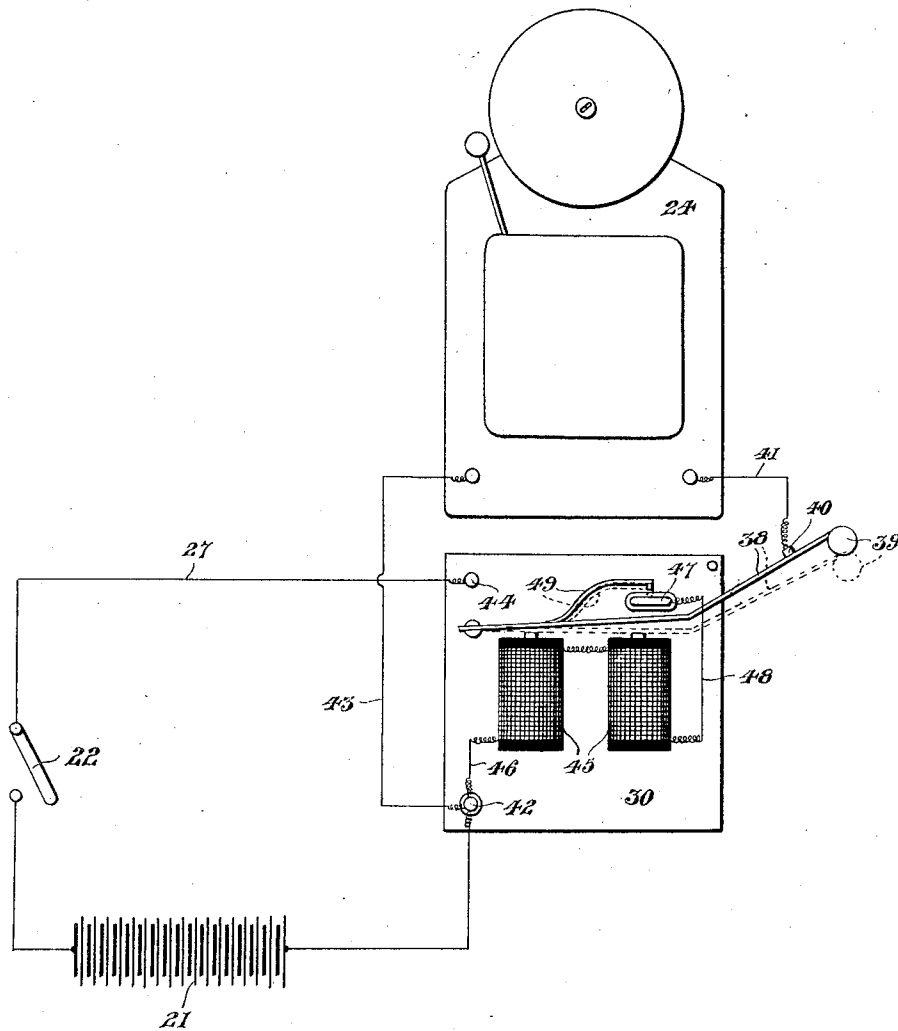
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J. F. HIELSCHER

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RELAY SWITCH FOR CLOCK CONTROLLED ELECTRIC SIGNAL DEVICES

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RELAY SWITCH FOR CLOCK-CONTROLLED ELECTRIC SIGNAL DEVICES.

Application filed February 15, 1921. Serial No. 445,222.

To all whom it may concern:

Be it known that I, JOHN F. HIELSCHER, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Relay Switches for Clock-Controlled Electric Signal Devices, of which the following is a specification.

My invention relates to improvements in a relay switch for electric signal systems such as are used in hotels and other rooming houses and is an improvement upon the relay switch disclosed in my copending application for Letters Patent, Serial No. 226,304, filed April 2, 1918.

An object of my invention is to provide a signal system by means of which the occupants of any number of rooms may be summoned by a call bell in direct circuit with an ordinary twelve hour clock that actuates the system by previously posting the connections necessary to make contact at the desired time.

Another object is to provide a novel means by which the bell may be cut out of the circuit by the occupant of a room after he has been called.

Further objects are to be provided in the signal system which will require a minimum amount of wiring, which is practical and simple in construction, efficient and reliable in operation, and which may be readily installed at comparatively small cost.

With the above and other objects in view which will appear as the description proceeds the invention consists of the novel construction, adaptation, arrangement and combination of parts hereinafter described and claimed.

I accomplish these objects by devices illustrated in the accompanying drawing, wherein—

The figure is a view in diagram of a bell actuating mechanism.

Referring to the drawing, there is shown a bell 24 of any ordinary type and having the usual two wire connections or terminals. A relay switch is provided to control the current from the battery 21 to the bell and to provide a means for normally establishing a circuit between the two. The switch is manually operable, however, to break this circuit and be retained in its abnormal position by the current from the battery.

The relay switch embodies a metallic base

30 having an insulated terminal 42 to which one side of the battery is connected, and a second terminal 44 which is grounded to the metallic base. Secured to the base 30 is a pair of magnets 45 that are inter-connected in series and having a wire 46 that leads to the terminal 42. The magnets 45 are further provided with a wire 48 that connects the same to a contact 47 that is carried by the base 30 and insulated therefrom. An armature 38 is pivotally secured to the base 30 and grounded thereto. This armature is further provided with a shunt arm 49 that is adapted to engage the contact 47 for establishing a circuit to the magnets 45 to retain the armature 38 against the poles of the same. The bell 24 is connected to the terminal 42 by means of the wire 43 and to a contact 40 by means of a wire 41. The armature 38 is adapted to normally engage the contact 40 to complete the circuit to the bell and to be removed from this contact for breaking the circuit by pressing upon the bottom 39.

A switch 22 is included in the wire 27 which leads from the battery 21 to the terminal 44 and is intended to be closed when the bell 24 is to be sounded. After the bell has been sounded and the armature has been manually moved away from the contact 40 to break the circuit to the bell, a circuit will be established through the magnets 45 for retaining the armature in its abnormal position away from the said contact. The switch 22 may then be opened for breaking the circuit to the magnets and the resiliency of the armature will cause it to assume its normal position in engagement with the contact 40. The circuit to the bell 24 is then restored with the exception of the break made in the wire 27 by the open switch 22.

To trace the operation of the system it will be seen that the current will flow from the terminal 44 through the contact armature 38, binding terminal 40 and wire 41 causing the bell 24 to ring and then pass over the wire 43 back to the battery 21.

After the bell 24 starts to ring a person may stop it by pressing downwardly on the button 39 thus breaking the contact between the armature 38 and the terminal 40 and cutting the bell 24 out of the circuit. By so doing the shunt arm 49 will be brought into engagement with the contact 47 and the armature 38 will engage the magnets 45. This will close the circuit within the relay switch

30 allowing the current to flow from the terminal 44 through the shunt arm 49, the terminal 47 and wire 48 then through the magnets 45 back to the battery 21 by way
 5 of the wire 46. The magnetism thus created in the magnets 45 will hold the armature 38 out of engagement with the contact 40 as long as the circuit is closed.

What I claim is:

- 10 1. The combination with an electric bell having two wire terminals of a battery, a relay switch comprising a metallic base plate having one wire terminal grounded thereto and a second wire terminal insulated there-
 15 from, wires from said battery to each of said switch terminals, a pair of magnets secured to said base plate, an insulated contact carried by said base, a circuit from the insulated terminal of said switch to the in-
 20 sulated contact, an armature pivotally mounted on said base and grounded thereto, a shunt arm carried by said armature, a connection between said insulated switch terminal to one of said battery terminals,
 25 and a contact connected with the second bell terminal and adapted to normally be in engagement with said armature to close the circuit through said bell, said armature being manually operable to break the circuit
 30 through said bell for establishing a circuit through said magnet and to be retained in

said abnormal position by the magnetism of the same.

2. The combination with an electric bell having two wire terminals of a battery, a
 35 relay switch comprising a metallic base plate having one wire terminal grounded thereto and a second wire terminal insulated therefrom, wires from said battery to each of said switch terminals, a pair of magnets
 40 secured to said base plate, an insulated contact carried by said base, a circuit from the insulated terminal of said switch through said magnets to the insulated contact, an armature pivotally mounted on said base and
 45 grounded thereto, a shunt arm carried by said armature, a connection between said insulated switch terminal to one of said bell terminals, and a contact connected with the second bell terminal and adapted to nor-
 50 mally be in engagement with said armature to close the circuit through said bell, said armature being manually operable to break the circuit through said bell to establish a circuit through said magnets by the means
 55 of said armature shunt and said base contact and to be retained in such abnormal position by the magnetism of the same.

In witness whereof, I hereunto subscribe my name this 5th day of February A. D. 1921.

JOHN F. HIELSCHER.