L. P. HYNES.

ELECTRIC SWITCH.

APPLICATION FILED OCT. 7, 1919.

1,392,332. Patented Oct. 4, 1921.

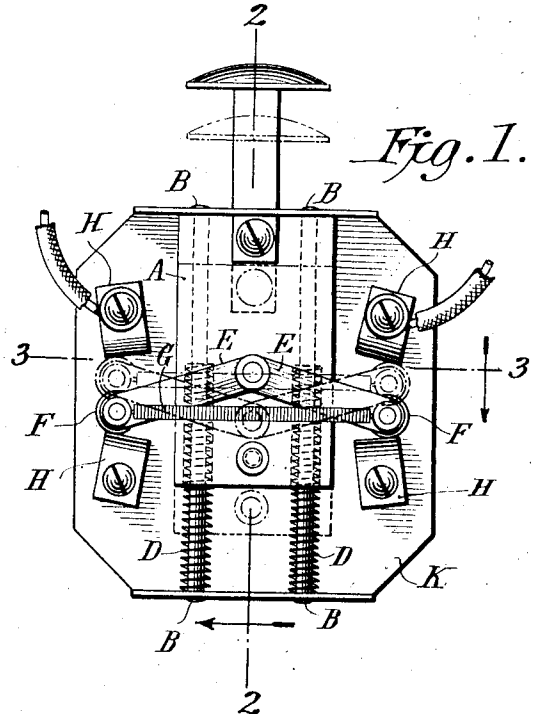


Fig. 1.

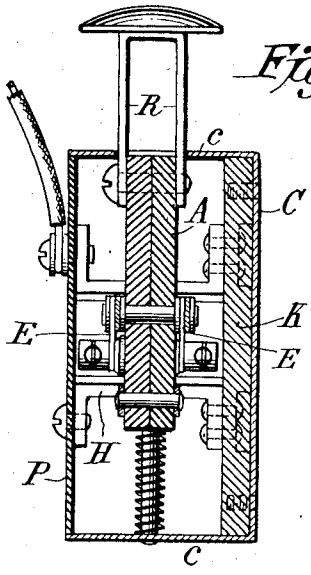


Fig. 2.

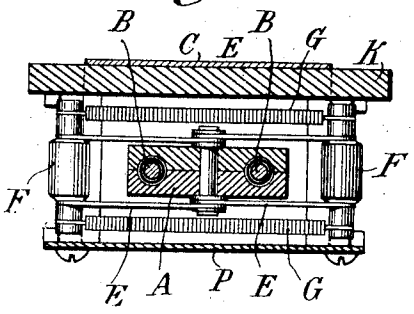


Fig. 3.

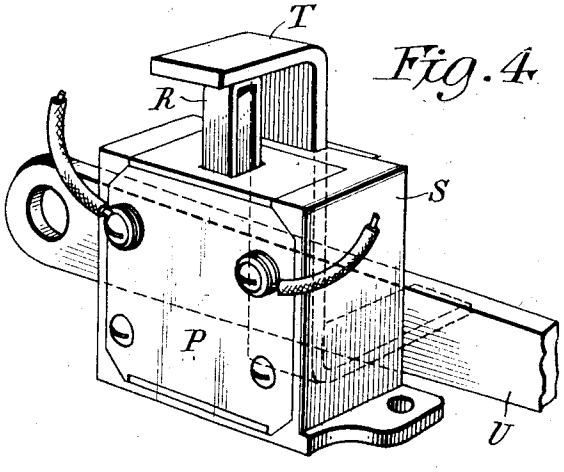


Fig. 4.

Lee P. Hynes Inventor

By his Attorney

E. M. Bentley

UNITED STATES PATENT OFFICE.

LEE P. HYNES, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR-HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

ELECTRIC SWITCH.

1,392,332. Specification of Letters Patent. Patented Oct. 4, 1921.

Application filed October 7, 1919. Serial No. 329,076.

To all whom it may concern:

Be it known that I, LEE P. HYNES, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Electric Switches, the following being a full, clear, and exact disclosure of the one form of my invention which I at present deem preferable.

For a detailed description of the present form of my invention, reference may be had to the following specification and to the accompanying drawings forming a part thereof, wherein—

Figure 1 is a front elevation of my device;

Fig. 2 is a section on the line 2—2 and Fig. 3 a section on line 3—3 of Fig. 1;

Fig. 4 is an illustration of one mode of using the switch.

Referring to the drawing, A represents a block of insulating material molded in two parts and with lengthwise perforations for the reception of rods B, B, on which the block A is free to slide. A base-plate C of sheet metal has upturned ends *c*, *c* between which extend the aforesaid rods B, B. Compression springs D, D, which are coiled around the rods B, B, tend to hold the block A in the position shown in Figs. 1 and 2. Four links E, two on either side of the block A, are pivoted to the center of the block and their outer ends are joined in pairs by the contact rollers F, F. The outer ends of the two pairs of links are connected by tension springs G, one on each face of the block A. Four posts H, are mounted on the insulating plate K on base C and provided with binding screws at their outer ends, a cover plate P of insulation being, in some cases, attached to the posts. Wires are connected to two or more of the binding posts according to the circuit connection to be established. Assuming the switch to be in its normal condition, with springs D D pressing block A upward, the contact rollers F F being pivotally mounted on the block and so free to vibrate with respect thereto will engage the lower pair of posts H. If then the block A be pressed downward against the force of springs D D, until the pivotal center of the contact-carrying links E E passes the axial line of the tension spring G, the force of that spring will suddenly be exerted to snap the rollers F, F away from the lower pair of posts H, and against the upper pair. The links will then be in the position shown by dotted lines in Fig. 1. That will break the electrical connection between the lower pair of posts and establish such connection between the upper pair. The reverse movement of the block will, in like manner, snap the contacts from the upper to the lower pair of posts. The block A is thus the important supporting and operating member of the switch. It will be apparent also that the movement of the block, preliminary to the snapping-over of the contacts, causes those contacts to rub or roll on the posts, thereby keeping the contact surfaces clean and bright.

A switch organized as above described is convenient for use in different situations. In Figs. 1 and 2 the block A is shown as operated by a push-rod R. In Fig. 4 the switch is inclosed in a box S and operated by the arm U of a car door motor, through the agency of a slide T which is bent over at its upper end to engage the end of a push-rod R and at its lower end to engage the under side of the arm U.

It may be employed in other situations with any suitable operating device and with any desired line connections for the binding posts H.

What I claim as new and desire to secure by Letters Patent is:

1. An electric switch comprising a base, a reciprocating member mounted thereon, a contact arm pivoted on said member, a stationary post on which said arm has a sliding bearing as its pivoted point is reciprocated, and an actuating spring for said arm movable therewith across the pivoted axis thereof.

2. An electric switch, comprising a base, a reciprocating member mounted thereon, two contact arms pivoted at the same point thereon and extending oppositely from said point, stationary posts engaged by said arms respectively, and an actuating spring extended between the remote portions of said arms and movable therewith across their common pivotal point.

3. An electric switch comprising a sliding member of insulating material, contacts pivotally mounted on said member, a spring extended between said contacts and a spring acting upon said sliding member.

4. An electric switch comprising a slid-

ing member of insulating material, interior guides on which said member travels, spring-actuated contacts pivotally mounted on said member, and posts engaged by said contacts.

5. An electric switch comprising a sliding member of insulating material, links centrally pivoted on said member, contacts at the outer ends of said links, a spring connecting said links and contacts and extending transversely to the line of movement of said member, and posts engaged by said contacts.

6. An electric switch comprising a sliding member of insulating material, a base plate having upturned ends, guides for said member extending between said upturned ends, contacts pivotally mounted on said member, a spring connecting said contacts, and posts engaged thereby.

7. An electric switch comprising a sliding member of insulating material, contacts centrally pivoted on said member, a spring joining said contacts and extending across the line of travel of the sliding member, and four posts, two on each side of said contacts and engaged thereby.

8. An electric switch comprising a sliding member of insulating material, two contacts pivotally mounted on said member by means of links jointed to the member, a spring for operating said contacts, posts engaged by the contacts, and a push-rod for operating said member.

Signed at Albany, county of Albany and State of New York, this 30th day of September, 1919.

LEE P. HYNES.