

(No Model.)

G. K. HUTCHINS.
ELECTRIC SNAP SWITCH.

No. 474,473.

Patented May 10, 1892.

Fig. 1

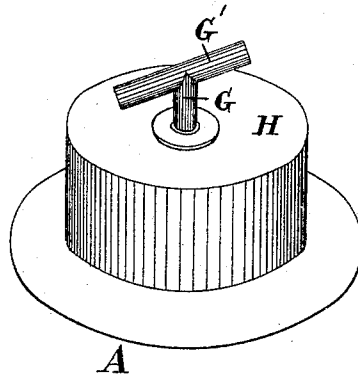


Fig. 2

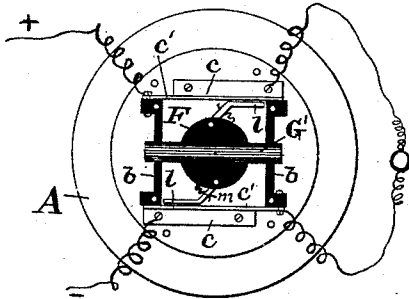


Fig. 3

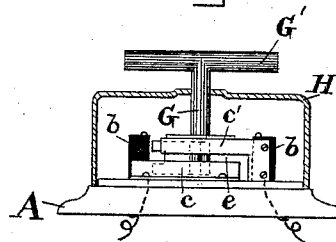


Fig. 7

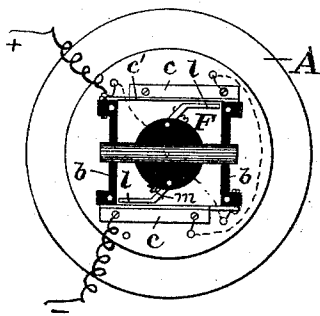


Fig. 4

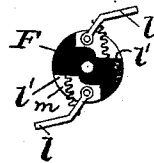


Fig. 6

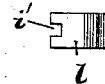


Fig. 5

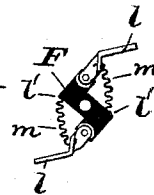
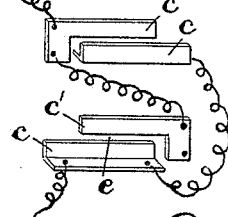


Fig. 8



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GEORGE K. HUTCHINS, OF BALTIMORE, MARYLAND.

ELECTRIC SNAP-SWITCH.

SPECIFICATION forming part of Letters Patent No. 474,473, dated May 10, 1892.

Application filed December 26, 1889. Serial No. 334,976. (No model.)

To all whom it may concern:

Be it known that I, GEORGE K. HUTCHINS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Electric Switches, of which the following is a specification.

This invention relates to an electric switch for instantly closing and opening the circuit of which it may be a part.

The invention will first be described, and then set forth in the claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of the exterior of the switch. Fig. 2 is a plan view of the switch as seen when the inclosing case is removed, and showing the wires attached to their respective terminal plates by suitable binding-screws, but drawn out of their holes in the base-plate. (As here shown it is a "double-pole" switch.) Fig. 3 is a view in which the inclosing case is in vertical section giving a side view of the switch parts. Figs. 4 and 5 are views showing slight differences in the form of the revoluble brush-carrier. Fig. 6 is a view of one of the brushes, showing slotted contact end, the purpose of which is hereinafter described. Fig. 7 is a similar view to that shown in Fig. 2, but in this case the opposite lower and upper terminal plates are in electrical connection, and it thus serves as a "single-pole" switch when the contact-brushes are resting thereon. Fig. 8 shows the manner of connecting the lower and upper opposite terminals of the device in Fig. 7.

The base A, of non-conducting material, has projecting from its upper surface two parallel walls *b*, forming the non-conducting opposite sides of a substantially square compartment, of which the pairs of terminal metallic conducting-plates *c c'* form the other two opposite sides. These pairs of terminal plates are insulated from themselves, and each member of a pair is insulated from the other. The two walls of non-conducting material *b* may be separate pieces from the base and suitably attached thereto or they may be integral therewith. I prefer the latter. The walls or sides *b* and the base A may be made of porcelain or other suitable material.

As shown in Figs. 2 and 3, the terminal

conducting-plates *c c'* are placed at right angles to the non-conducting walls and present flat contact-faces toward the interior of the said compartment and are insulated from each other, as just stated, preferably by an unconnected space *e*, and are attached to the ends of the walls *b*. A movable revoluble brush-carrier F, made of non-conducting or insulating material, has a central position within the compartment and is fixed on a shaft G, whose lower end has pivot-bearing in the base-plate A, and its upper part turns in a bearing in the crown of the cover H. On the outer end of the shaft G is a suitable handle G', by which the switch is operated.

At diametrically-opposite points of the insulating-carrier F are pivoted two contact-brushes *l*, capable of motion independent of the revoluble shaft G and uncontrollable by the operator when they reach a certain point in the revolution. The free end of the contact-face of the pivoted brush has a slot *z'*, (see Fig. 6,) which coincides with the space *e*, separating the two terminal plates *c c'* of a side, and serves, when breaking the circuit, to prevent establishing an arc across the terminal plates.

The insulating brush-carrier F has two shoulders *l'*, one opposite the other, against which are seated spiral springs *m*, which serve to operate their respective pivoted contact-brushes on which they bear and tend to press them against the said terminal plates *c c'* or the insulating-walls *b*.

Each contact-brush *l* and its operating-spring *m* is insulated from the other brush and spring by the non-conducting carrier F, and each contact-brush acts as a circuit-closer for the respective pole or pair of terminals upon which it may be resting, as shown in Fig. 2.

When the insulating-carrier F is turned part of a revolution from the last-mentioned position, the contact-brushes *l* will gradually slide and the slotted ends only will be in contact with the terminals *c c'* until a point is reached where the brushes are uncontrollable by the operator and will break the contact instantly by virtue of the action of their respective springs.

The insulating-brush or contact-carrier F

may be circular, as shown in Figs. 2 and 4, or may have other suitable shape, as shown in Fig. 5. Such changes merely of form are immaterial and do not affect the scope of my invention. In Figs. 7 and 8 the lower and upper opposite terminals *c c'* are in electrical connection and serve for a single-pole switch.

Having described my invention, I claim—

1. The combination of a non-conducting brush-carrier capable of being rotated having pivoted contact-brushes, each brush actuated by a separate spring seated against said carrier and bearing against said brush, and a base with terminal plates capable of being opened or closed electrically by each brush independently.

2. The combination of two pairs of terminal conducting-plates, a revoluble brush-carrier composed of non-conducting material, two conducting contact-brushes pivoted to the said carrier, each to act at the same time on a different pair of the said terminal plates and each forming an electrical connection between the two members of each pair, and springs to actuate the brushes so as to open

and close the circuit between said terminal plates.

3. The combination of a base having two opposite non-conducting walls, two pairs of terminal conducting-plates opposite each other and with said walls forming substantially a square compartment, a shaft centrally pivoted in said compartment, two pivoted circuit-closing brushes, and a separate spring acting on each brush.

4. The combination of a revoluble brush-carrier composed of non-conducting material, two pairs of terminal conducting-plates *c c'*, each plate insulated from the other and each pair of plates having position on an opposite side of the said carrier, two conducting-brushes *i*, pivoted to the carrier, and two springs, each seated against a carrier and bearing against a different one of the brushes.

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

GEORGE K. HUTCHINS.

Witnesses:

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