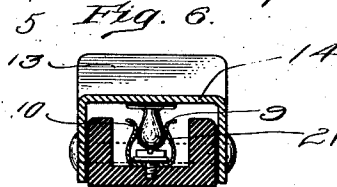
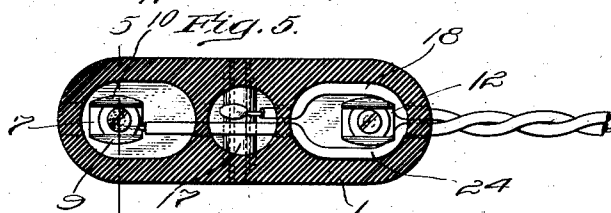
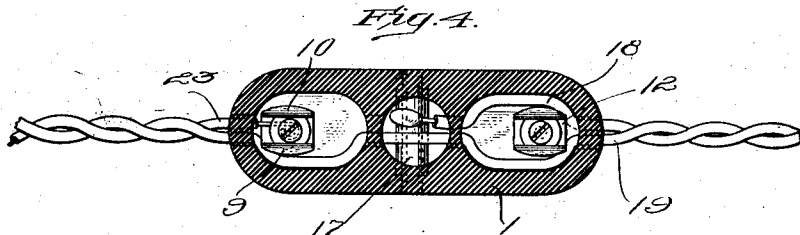
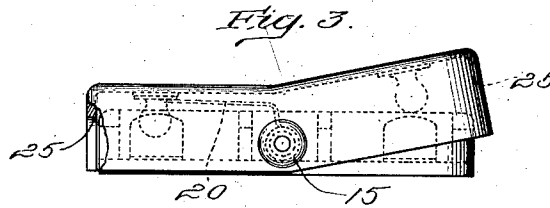
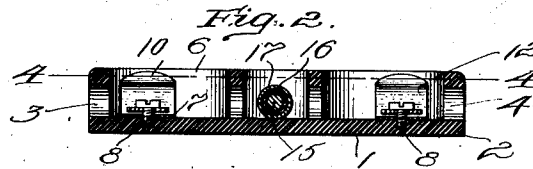
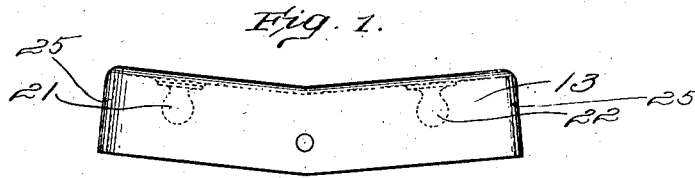


R. J. BARBER & V. DURBIN.
ELECTRIC SNAP SWITCH.
APPLICATION FILED NOV. 18, 1909.

1,003,391.

Patented Sept 12 1911



Witnesses:
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by Geo. H. Maxwell.
Att.

UNITED STATES PATENT OFFICE.

RAYMOND J. BARBER, OF BELMONT, AND VERNON DURBIN, OF BROOKLINE, MASSACHUSETTS, ASSIGNORS TO GLOBE EAR-PHONE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ELECTRIC SNAP-SWITCH.

1,003,391.

Specification of Letters Patent.

Patented Sept. 12, 1911.

Application filed November 18, 1909. Serial No. 528,733.

To all whom it may concern:

Be it known that we, RAYMOND J. BARBER and VERNON DURBIN, citizens of the United States, and residents, respectively, of Belmont, in the county of Middlesex, State of Massachusetts, and of Brookline, in the county of Norfolk, State of Massachusetts, have invented an Improvement in Electric Snap-Switches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Our invention, while adapted for general use, is primarily intended for use in situations requiring an exceedingly small device, as on an ear-phone cord, a surgical lamp, and the like.

To this end our invention comprises two relatively movable parts, one of which is arranged to rock with relation to the other, and provided respectively with the complementary parts of any convenient snap switch device or member which, while operating to break the circuit, also coöperates with the opening pressure of the operator to compel a sudden opening movement.

The structural details of the device and various further advantages thereof will be pointed out more at length in the course of the following description, considered with reference to the accompanying drawings.

In the drawings we have shown a preferred embodiment of the invention, which is there shown in a considerably larger size than the small size which our invention renders perfectly practicable.

Figure 1 showing the rocking bar in side elevation; Fig. 2 being a sectional view of the complementary member; Fig. 3 being a side elevation of the parts together; Fig. 4 being a central horizontal sectional view of the complementary or base member; Fig. 5 a similar view showing a different winding, and Fig. 6 a cross sectional view, line 5-5 of Fig. 5.

As above stated, one principal advantage of our invention is its practicability for exceedingly small sizes, our invention rendering it entirely practicable to construct the device much smaller than shown in the drawings. The base block or relatively stationary member 1, in the preferred construction of the drawings, comprises a shell or body 2 of insulating material or any con-

venient substance, having one or more openings 3, 4 in its ends for the passage of the circuit wires, and pivot holes 5 in its opposite sides 6 for the rocking member, and containing one part 7 of the make-and-break device, which preferably operates substantially the same as an ordinary glove fastener or ball and socket joint, and may accordingly consist of any of such well known devices, being herein shown as secured rigidly in position by a screw 8 and provided with spring circuit-closing jaws 9, 10. At the opposite end of the member 1 is a similar device 12, only one of these, however, being ordinarily actually used in the electric circuit, the other being provided merely as a holding device, for the better operation of the switch. A rocking bar 13 coöperates with the relatively stationary member 1 and is herein shown as comprising a shell 14 formed as a protecting hood adapted to fit down over the shell 2, the two shells being otherwise similar excepting that the shell 14 has its opposite ends raised sufficiently to permit of its having the required rocking movement. A pivot rod or rivet 15 joins the two shells permanently together, being surrounded by an insulation bushing 16 on which is mounted a relatively stationary conductor bushing or covering 17, to which may be soldered or otherwise secured one of the circuit wires 18, the other circuit wire 19 being shown as simply passing through the switch, in at one opening 4 and out at the other 3 (when used, for instance, on the wires of an ear-phone). A conductor wire 20 connects from the conductor sleeve 17 to the adjacent complementary member 21 of the active make-and-break device, said member 21 being rigidly secured to depend from the under side of the rocking bar 13. A similar dummy device 22 is similarly provided at the opposite end of said rocking member to coöperate with the member 12. A circuit wire 23 is connected to the lower member 7 of the active make-and-break device to continue the circuit onward in connection with the wire 19. This is the arrangement when the switch is to be interposed between the ends of the main circuit wires. When it is to be used at the ends of said wires, the arrangement is as shown in Fig. 5, where, instead of having the wire 19 pass directly through the switch as shown in

Fig. 4, a corresponding wire 24 is secured directly to the member 7 of the make-and-break device, the rocking member 13 of the switch being arranged the same as shown in Fig. 1.

From the above description, it will be obvious to those skilled in the art that the switch may be made in practically any size desired, even down to a very small size, and yet be perfectly safe, operative and practical.

In use, if the switch is closed, so that the cooperating members 21 and 7 are interengaged as shown in Figs. 5 and 6, the right hand end of the member 13 will then be in upwardly tilted position as shown in Fig. 3, whereupon the operator, to open the switch, simply presses the right hand ends together, notches 25 in the lower edge of the shell or inclosing part 14 being provided to straddle the wires so as to permit of the desired rocking movement. The resistance offered by the interlocked switch parts 9, 10, 21 causes the releasing movement to be sudden, after the well known manner of snap switches, and the parts 12, 22 then snap together in similar manner to hold the switch open. When it is desired to close the switch, the operator grasps the then separated left hand ends of the switch, and presses them together, the members 12, 22 offering the same resistance to this closing movement that the members 9, 10, 21 offered to the opening movement, the result being that the closing is sudden to the same extent and for the same reason that the opening was sudden.

As already intimated, our invention is not restricted to the precise constructional details herein shown. Besides the advantage of affording a practical construction for extremely small sizes of switch as well as larger sizes, our construction has the further advantage of being exceedingly simple and inexpensive to manufacture and almost indestructible in use. The casing, composed of the stationary and rocking members 1, 13 may be cheaply stamped out or molded, while, as already stated, the make-and-break members 7, 21, 12 and 22 may be, if desired, simply usual glove fasteners.

Having described our invention, what we claim as new and desire to secure by Letters Patent is,

1. A switch, comprising two longitudinal members pivoted together intermediate their ends for relative rocking movement, pairs of spring snap fasteners having the elements thereof carried by said members at opposite sides and remote from the pivot, said fasteners being mutually coöperative and constructed to quicken the latter part of both the engaging and disengaging movement, and one of said fasteners having its elements constituting the terminals of a make-and-break mechanism.

2. A switch, comprising two longitudinally extending members pivoted together intermediate their length for relative rocking movement, a rounded knob carried by one of said members, remote from the pivot point and constituting one electric terminal, and a retaining spring member constructed to co-act with said knob to yieldingly hold the parts engaged and to quicken the disengaging movement, said spring constituting the other electric terminal.

3. A switch, comprising two longitudinal members pivoted together for relative rocking movement, said two members being provided with complementary portions of a combination snap fastener and make-and-break mechanism, one of said members being formed as a hood having a depending portion fitted over the other member to protect the same and the working parts.

4. A switch, comprising two longitudinal members pivoted together intermediate their ends for relative rocking movement, said two members being provided with complementary portions of a combination snap fastener and make-and-break mechanism, one of said members being formed as a hood adapted to fit over the other member to protect the parts, said hood having its edges upwardly deflected from said pivot in a flattened V-shape, either portion thereof being substantially in the plane of the base of the other member in the make and break positions respectively.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

RAYMOND J. BARBER.
VERNON DURBIN.

Witnesses:

WALTER F. TAYLOR,
CLARENCE H. MOULTON.