Nov. 6, 1923. 1,473,579

H. A. HART

ELECTRIC SWITCH

Filed Nov. 5, 1921

Fig. 1.

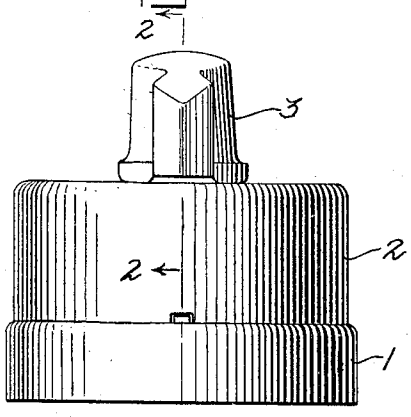


Fig. 3.

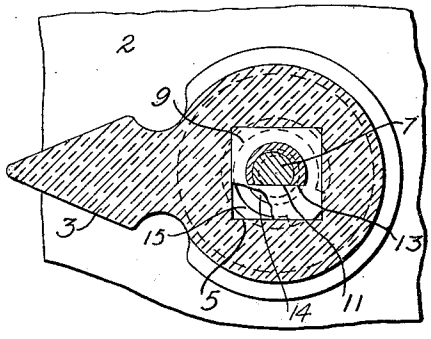


Fig. 4.

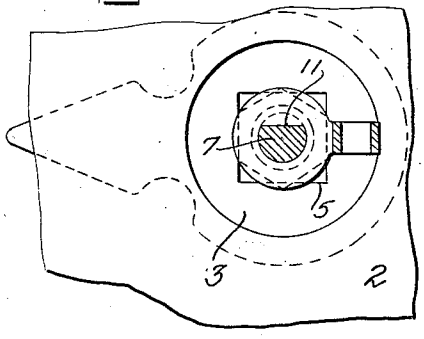


Fig. 5.

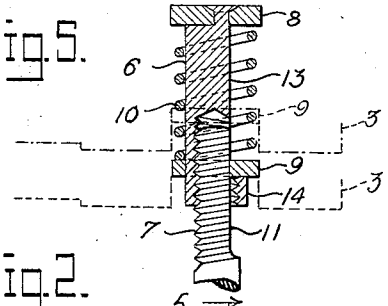


Fig. 2.

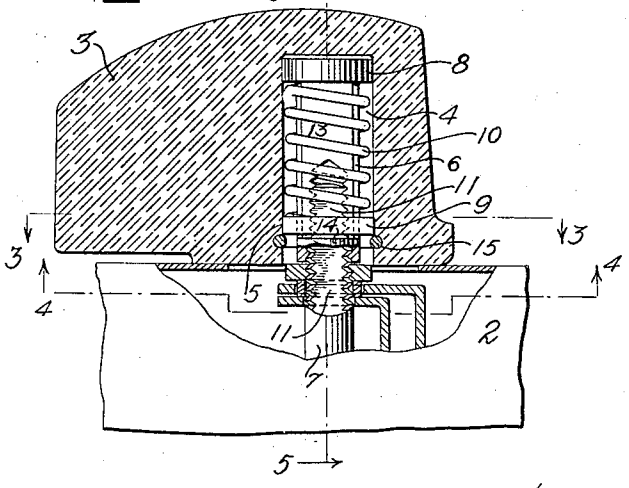
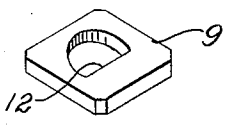


Fig. 6.



Inventor

H. A. HART.

By his Attorneys

Bartlett & Brownell

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UNITED STATES PATENT OFFICE.

HAROLD ARCHER HART, OF WEST HARTFORD, CONNECTICUT, ASSIGNOR TO THE HART MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF NEW JERSEY.

ELECTRIC SWITCH.

Application filed November 5, 1921. Serial No. 512,972.

To all whom it may concern:

Be it known that I, HAROLD A. HART, a citizen of the United States, residing at West Hartford, county of Hartford, State of Connecticut, have invented a certain new and useful Improvement in Electric Switches, of which the following is a full, clear, and exact description.

My invention relates to electric switches and has for its object to provide a switch having a handle, screwed upon the spindle thereof and removable therefrom, which is held from rotary movement in either direction relatively to the spindle. It is especially adapted for snap switches of the oscillating type. Its object is to provide a simple and effective construction for a switch having such a handle.

The following is a description of an embodiment of my invention, reference being had to the accompanying drawings, in which,

Fig. 1 shows a side elevation of a switch embodying my invention;

Fig. 2 is a vertical section through the handle on the line 2—2, Fig. 1;

Fig. 3 is a horizontal section on the line 3—3, Fig. 2;

Fig. 4 is a section on the line 4—4, Fig. 2;

Fig. 5 shows certain details in section on the line 5—5, Fig. 2; and

Fig. 6 shows in perspective a detail of a washer used in the present embodiment.

Referring more particularly to the drawing, 1 is the ordinary insulating base on which the switch mechanism is mounted. 2 is the cover therefor and 3 is the thumb-piece of the handle. This thumb-piece is provided with a bore 4, the lower part at least of which is of a noncircular form, preferably square, as shown at 5 (Fig. 3). Within this bore is a plunger 6 which is screw-threaded upon the upper end 7 of the spindle of the switch. This plunger 6 has secured thereto a separately formed head 8 and at its lower end carries a movable member 9, shown in detail in Fig. 6. In the embodiment shown, the member 9 is in the form of a washer. Between the head 8 and the movable member 9 is a spring 10 which tends to move the member 9 downward. The screwthreaded end of the spindle is cut away on one side 11 so as to form two shoulders with which a straight edge portion 12 on the washer 9 engages so that the washer 9 is held by such engagement from rotary movement relatively to the spindle. One side of the body of the plunger is cut away at 13, the cut away portion extending for some distance below the upper end of the spindle so as to expose the shoulders on the spindle and permit them to be engaged by the surface 12 of the washer. The washer 9 is square and fitting within the squared portion of the bore of the thumb-piece is held from turning therein, and in turn, by reason of the engagement of the surface 12 with the cut away surface 13 of the plunger, prevents the plunger from turning within the thumb-piece. The cut away portion of the plunger stops somewhat short of the bottom thereof so that a projection 14 remains, toward which the spring 10 tends to move the washer 9, constituting a stop for the washer and assisting in holding it in place during the assembling of the handle. The ring 15 engaging a recess in the thumb-piece 3 holds the washer 9 together with the spring 10 and plunger 6 within the thumb-piece.

The parts are so proportioned that the thumb-piece 3 can be pulled vertically upward until the washer 9 is above the end of the spindle, being carried upward by the ring 15, and thereby disengaged from the shoulders formed upon the spindle by the side 11. When so elevated, the handle can be turned so as to unscrew the plunger from the spindle until it is entirely detached therefrom. In applying the handle to the spindle, the plunger is first screwed slightly on to the spindle and is then lifted so as to hold the washer 9 in elevated position and thereafter turned until the plunger is screwed on as far as desired. The thumb-piece is then released, whereupon the spring 10 forces the washer 9 down along the spindle with the surface 12 in engagement with the shoulders formed by the surface 11 upon the spindle.

In this way it will be seen that the handle can be easily applied or removed and that when applied it will be so connected to the spindle that a turning effect in either direction can be transmitted from the thumb-piece to the spindle.

When the parts are inserted into the thumb-piece through the lower end of the

bore, as shown, the thumb-piece is provided with an undercut below the washer 9 into which a spring retaining ring 15 is snapped so as to hold the handle parts together.

For convenience in manufacture, the head 8 is made circular and the washer 9 angular, as shown, so that the washer holds the plunger 6 from revolving relatively to the thumb-piece.

As will be evident to those skilled in the art my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In a switch, the combination of a spindle having a threaded end with longitudinally extending shoulders thereon, a headed plunger screwed upon said end and formed so as to expose said shoulders, a perforated member on said plunger having its opening formed so as to normally engage said shoulders and be held from movement around said plunger, a spring between said member and the head of said plunger, said member being adapted to be moved along said plunger against the action of said spring so as to be disengaged from said shoulders.

2. In a switch, the combination of a spindle having a threaded end with longitudinally extending shoulders thereon, a headed plunger screwed upon said end and formed so as to expose said shoulders, a washer on said plunger having its opening formed so as to normally engage said shoulders and be held from movement around said plunger, a thumb-piece having a bore containing said plunger and washer and holding said washer from rotary movement relatively thereto, a spring between said washer and the head of said plunger, and means for holding said washer within said bore, said washer being adapted to be moved along said plunger against the action of said spring so as to be disengaged from said shoulders.

3. In a switch, the combination of a spindle having a threaded end with longitudinally extending shoulders thereon, a headed plunger screwed upon said end and formed so as to expose said shoulders, a washer on said plunger having its opening formed so as to normally engage said shoulders and be held from movement around said plunger, a thumb-piece having a bore containing said plunger and washer and holding said washer from rotary movement relatively thereto, a spring between said washer and the head of said plunger, and means for holding said washer within said bore, said washer being adapted to be moved along said plunger against the action of said spring so as to be disengaged from said shoulders, said plunger having a projection constituting a stop for said washer and toward which said spring tends to move said washer.

HAROLD ARCHER HART.