

**No. 675,177.**

**Patented May 28, 1901.**

**G. B. THOMAS.**  
**ELECTRIC SWITCH.**

(Application filed Feb. 15, 1901.)

(No Model.)

FIG. 1.

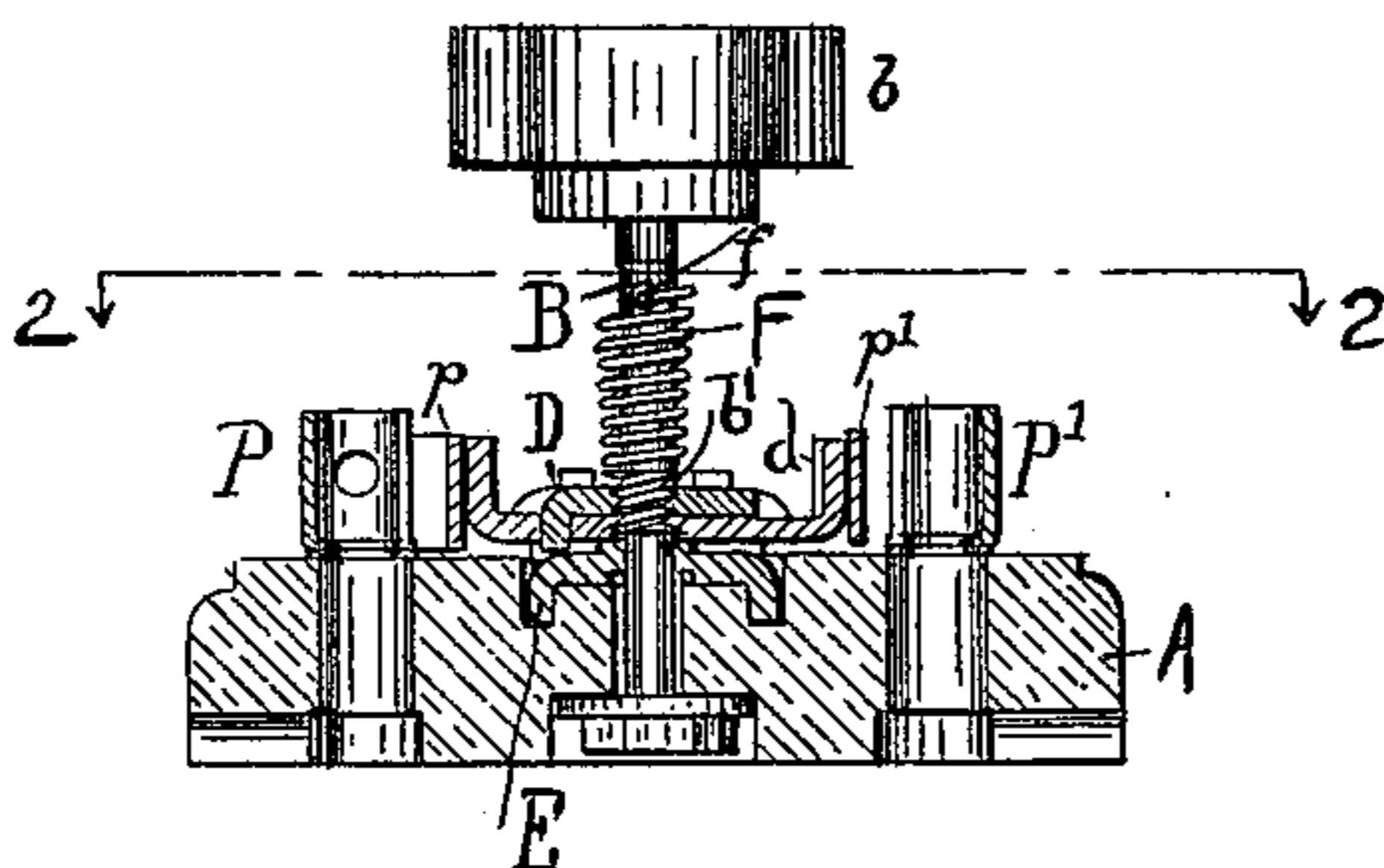
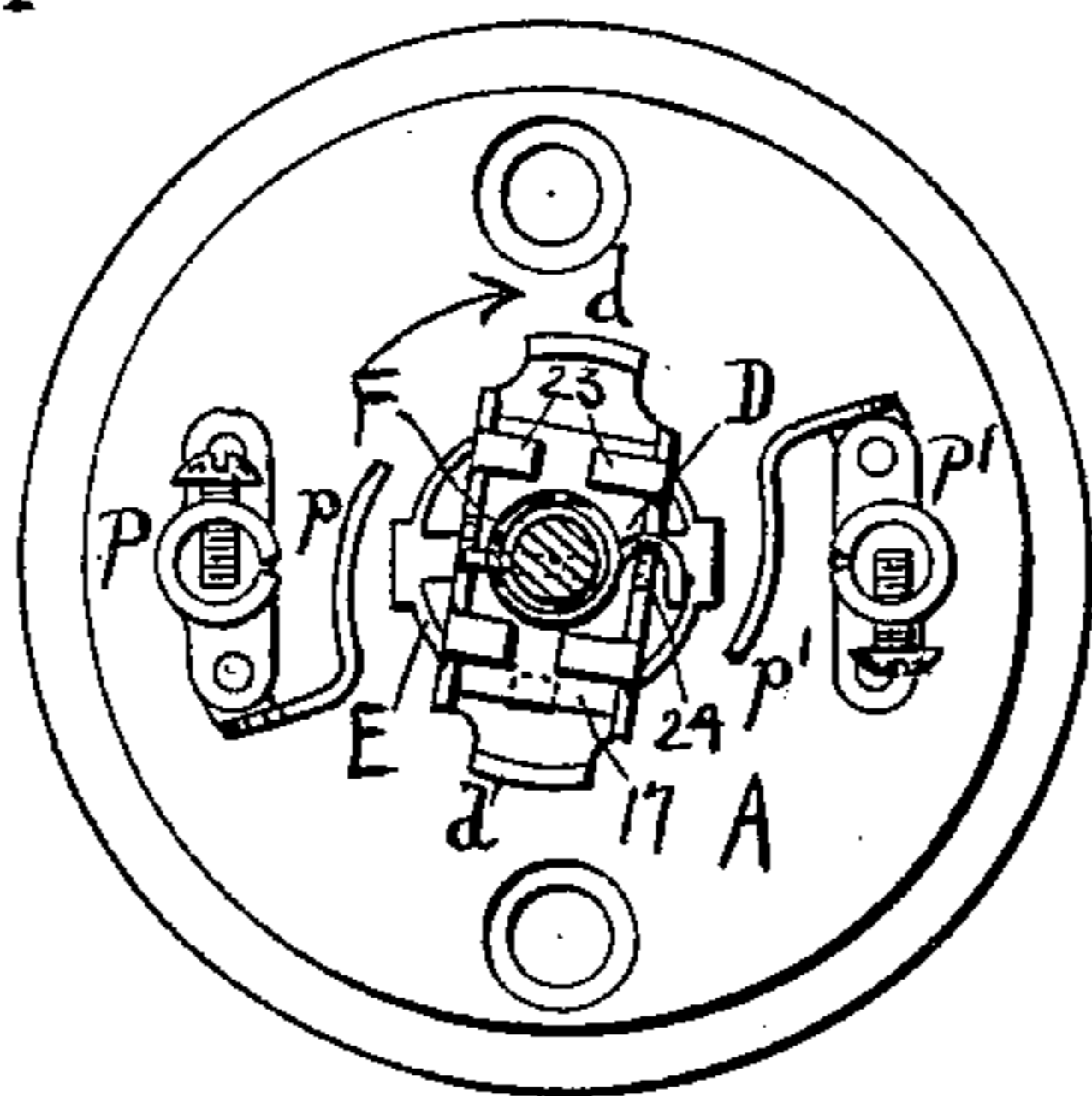


FIG. 2.



F14.3.

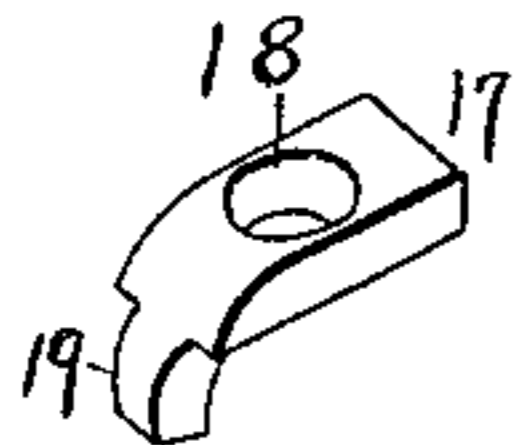


FIG. 4.

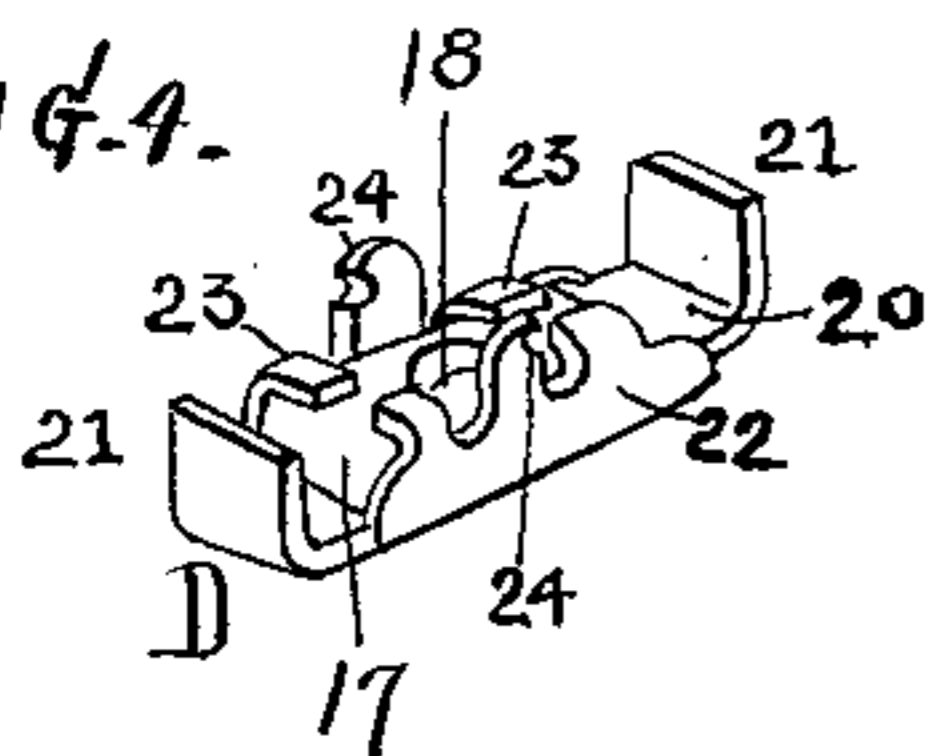


Fig. 5.

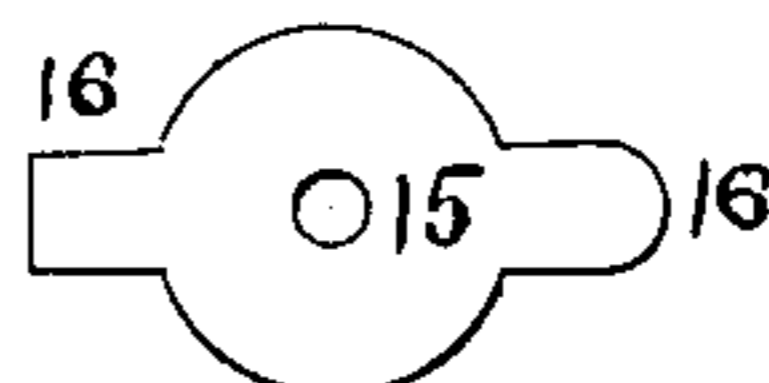


FIG-6.

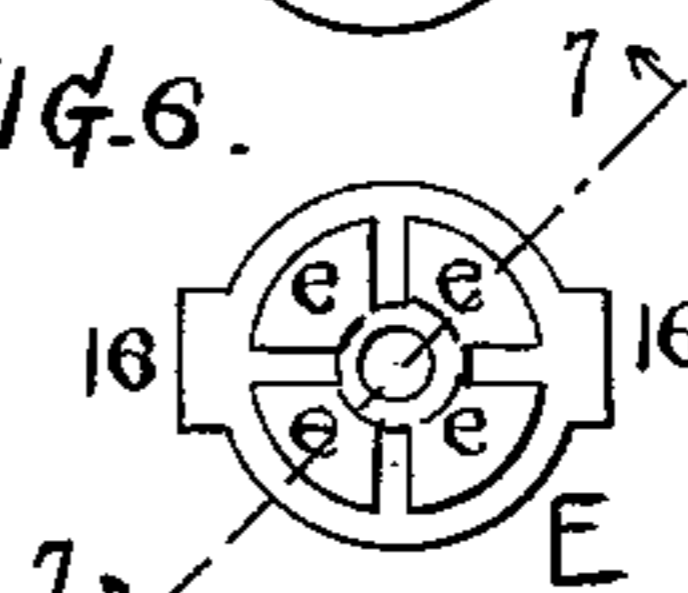


FIG. 7.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE B. THOMAS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PERKINS ELECTRIC SWITCH MANUFACTURING COMPANY, OF SAME PLACE.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 675,177, dated May 28, 1901.

Application filed February 15, 1901. Serial No. 47,487. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. THOMAS, a citizen of the United States of America, residing in Hartford, in the county of Hartford, State of Connecticut, have invented Improvements in Electric Switches, of which the following is a specification.

The object of my invention is to produce an economically-manufactured electric switch which will also be more durable than like switches as ordinarily constructed.

In the accompanying drawings I have shown my invention as applied to a single-pole rotary snap-switch; but it will be understood that my improvements are applicable to switches of other styles.

In the accompanying drawings, Figure 1 is a vertical section of a single-pole rotary snap-switch embodying my invention. Fig. 2 is a sectional plan view on the line 2-2, Fig. 1, but with the position of the rotary part of the switch changed. Figs. 3, 4, 5, 6, and 7 are views of details.

The particular form of switch illustrated in the drawings is constructed on the principle of the rotary snap-switch for which the Gibbs patent, No. 517,100, dated March 27, 1894, was granted; but I do not intend to confine my invention to this particular style of switch.

In Figs. 1 and 2, A represents an insulating-base, preferably of porcelain, to which are secured the binding-posts P P' and the stationary spring contact-fingers p p', the latter being clamped in place between the posts P P' and the base, Fig. 1. B is the vertical rotary spindle, adapted to turn in the base and having an operating-handle b at the top and a quick-screw-threaded portion b' engaging a threaded part of a cross-piece D. The opposite ends of this cross-piece D are provided or formed with contacts d to make contact with the spring-fingers p p' when the cross-bar is turned to the position shown in Fig. 1, but to break contact when the bar is turned to the position shown in Fig. 2. The under side of the cross-piece D is provided with a projection or pawl, hereinafter described, to engage with the ratchet-teeth of a fixed stop-plate E, secured to the base A. A coiled spring F around the spindle and se-

cured thereto at f at one end bears at the other end against a suitable projection on the cross-piece D to rotate the latter when its projection or pawl is released from a tooth of the stop-plate E. On turning the handle of the spindle in the direction of the arrow, Fig. 2, the rotation of its screw will lift the cross-piece D against the action of the spring F until the under projection or pawl is released from the engaging tooth of the stop-plate E, whereupon the spring F, which has been put under tension by the partial rotation of the spindle B, will cause the cross-piece D to rotate with a quick snap until its pawl engages with the next tooth of the stop-plate E. As shown in Fig. 6, there are four of these ratchet-teeth e e on the stop-plate. In these switches as heretofore made these stop-plates have been constructed from a brass casting; but this, besides being expensive and troublesome to make, wears out too rapidly. I make the stop-plate by stamping it up out of sheet-steel. I form a blank in the shape of a disk 15 with a central opening and two lugs 16 16, as shown in Fig. 5, and these lugs are bent down, as illustrated in Figs. 6 and 7, to fit into corresponding holes formed in the porcelain, Fig. 1, to hold the plate from turning, and I press out of the body of the disk 15 on the face thereof the several ratchet-teeth e e, as illustrated in Figs. 6 and 7. This forms a more economically-constructed but more durable device than if made of a brass casting.

To produce economically an equally-durable pawl or projection on the under side of the cross-piece D to engage with these ratchet-teeth while having the electrical contacts of the piece D of brass or like suitable material, I make the said cross-piece of two parts, one stamped or pressed up out of sheet-brass and the other a strip of steel, which is the part to receive the chief mechanical wear and strain. The latter is illustrated in Fig. 3 and consists of a short piece of steel 17, with a hole 18 punched through and with a downwardly-bent nose 19, reduced in width. The construction of the sheet-brass part will be understood on reference to Figs. 1, 2, and 4. It is made of a flat plate 20, with upturned ends 21 21 to form the contacts, and preferably side flanges 22, 100

and midway or thereabout I form on one or on each side an upwardly-bent and notched finger 24, with which the lower or free end of the spiral spring F may engage, Fig. 2.

5 Two holes are formed in the body of the plate 20, one for the passage of the spindle B and the other for the passage of the nose 19, to form the pawl or projection to engage with the ratchet-teeth *e e*. When the steel piece

10 17 has been put in place in the plate 20 between the side flanges 22, lugs 23 (four in the present instance) are bent down over the piece 17 to clasp and hold it firmly in place. The corresponding holes in the two pieces of

15 metal are now tapped to receive the threaded portion of the spindle B, as shown in Fig. 1.

I claim as my invention—

1. An electric switch provided with a moving part, consisting of two pieces of metal,

20 one to receive the mechanical wear and the other of sheet metal formed with contacts and holding and embracing the first piece, substantially as described.

2. An electric switch provided with stationary contacts and a stop-piece, in combination with a rotary part, consisting of a

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sheet-metal plate formed with contacts at the ends and a separate metallic piece having a nose to engage the stop-piece and embraced and held by the said plate, substantially as 30 described.

3. The rotary member of an electric switch, comprising a sheet-metal plate with bent ends for the contacts, and a piece with a nose projecting through an opening in said plate, 35 which latter has parts embracing and holding the nosepiece, substantially as described.

4. The rotary member of an electric switch, comprising a sheet-metal plate with bent ends for contacts, bent fingers to receive the actuating-spring and bent lugs to hold the separate nosepiece, in combination with the nose-piece so secured to the plate, substantially as 40 described.

In testimony whereof I have signed my 45 name to this specification in the presence of two subscribing witnesses.

GEORGE B. THOMAS.

Witnesses:

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E. B. FORD.