

(No Model.)

W. THOMPSON.  
ELECTRIC SWITCH.

No. 408,678.

Patented Aug. 6, 1889.

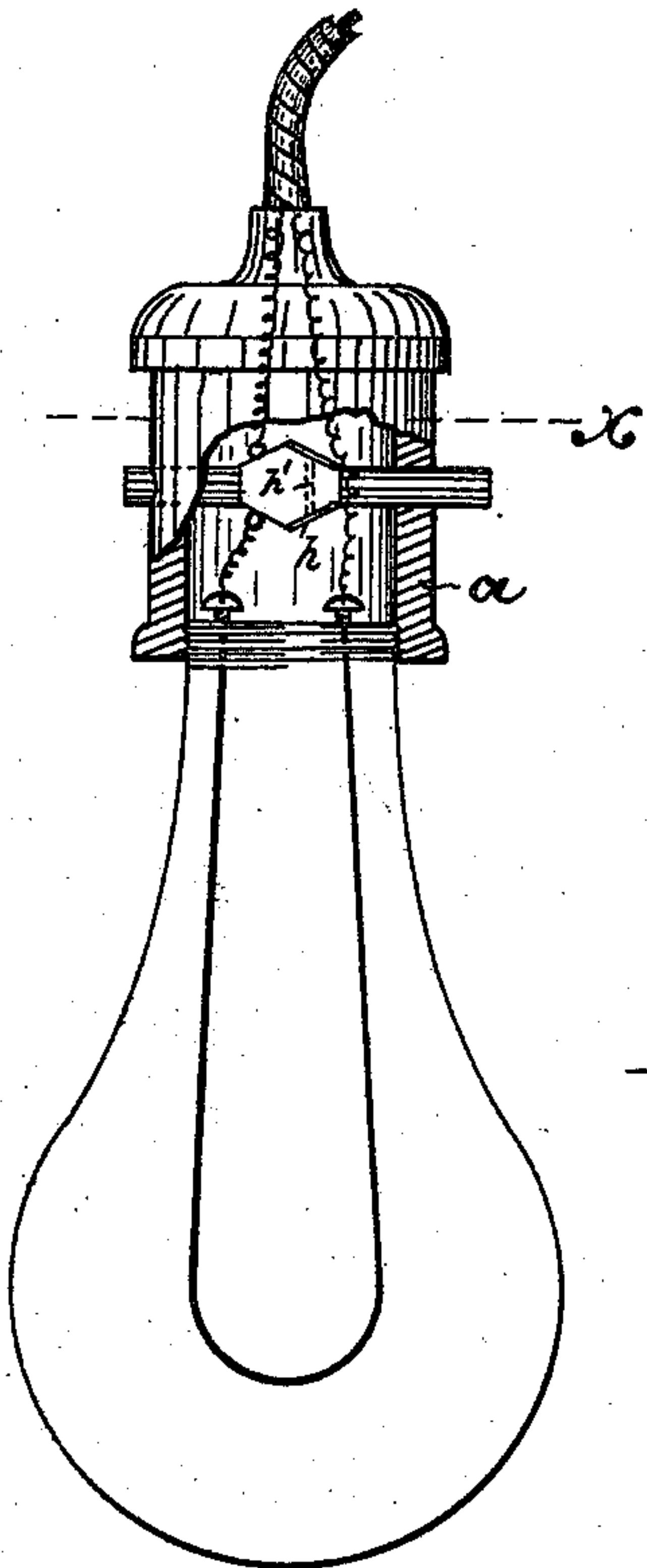


Fig. 1.

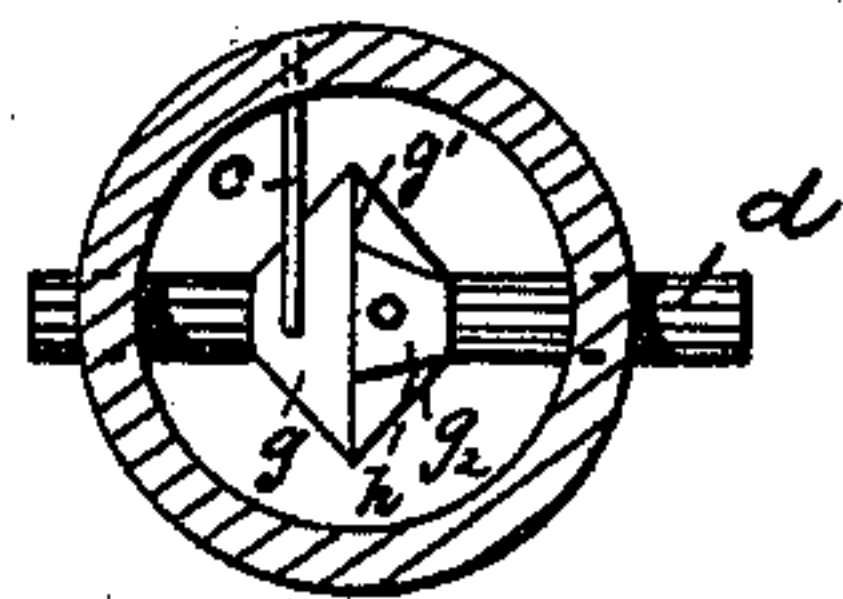


Fig. 1a

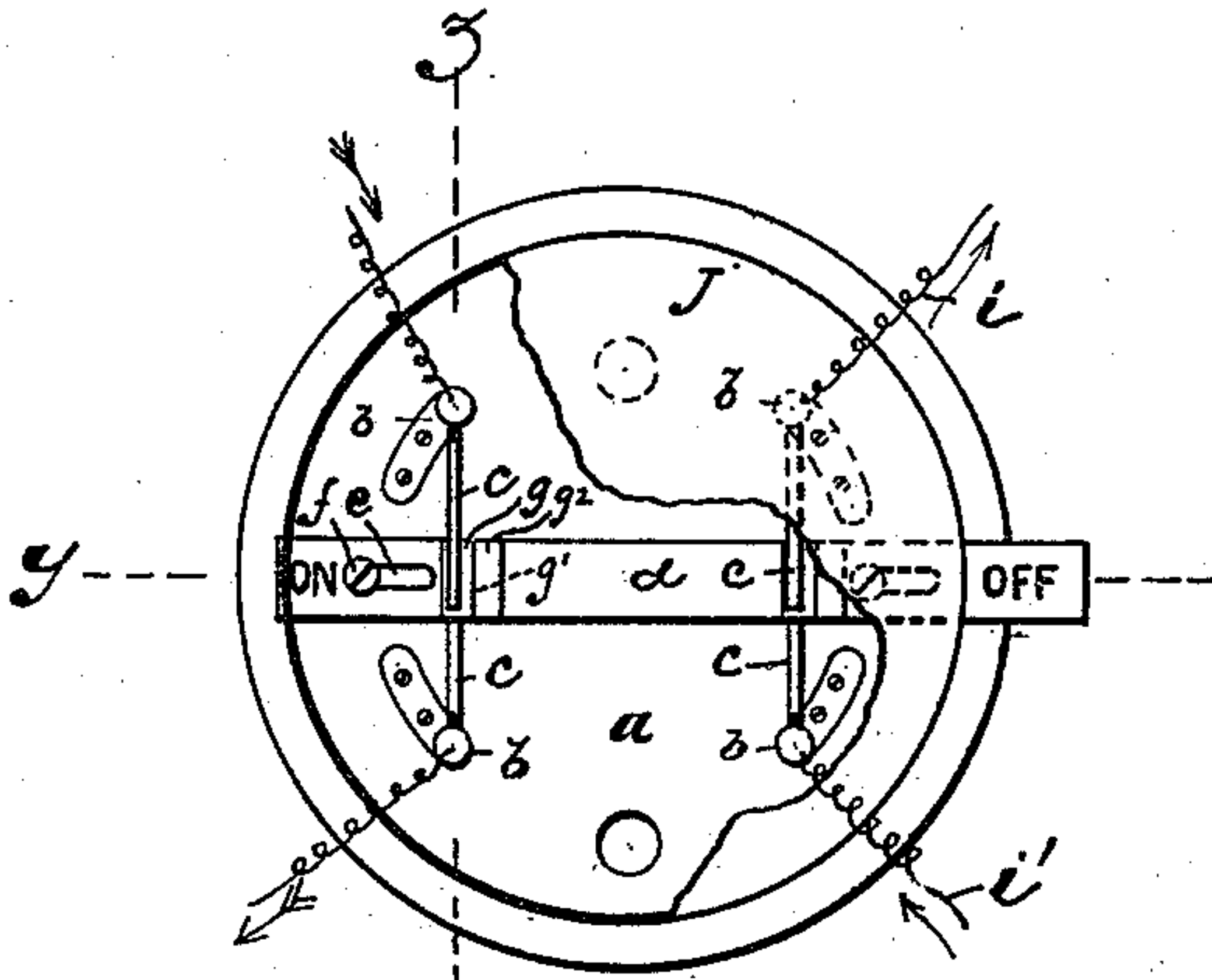


Fig. 2.

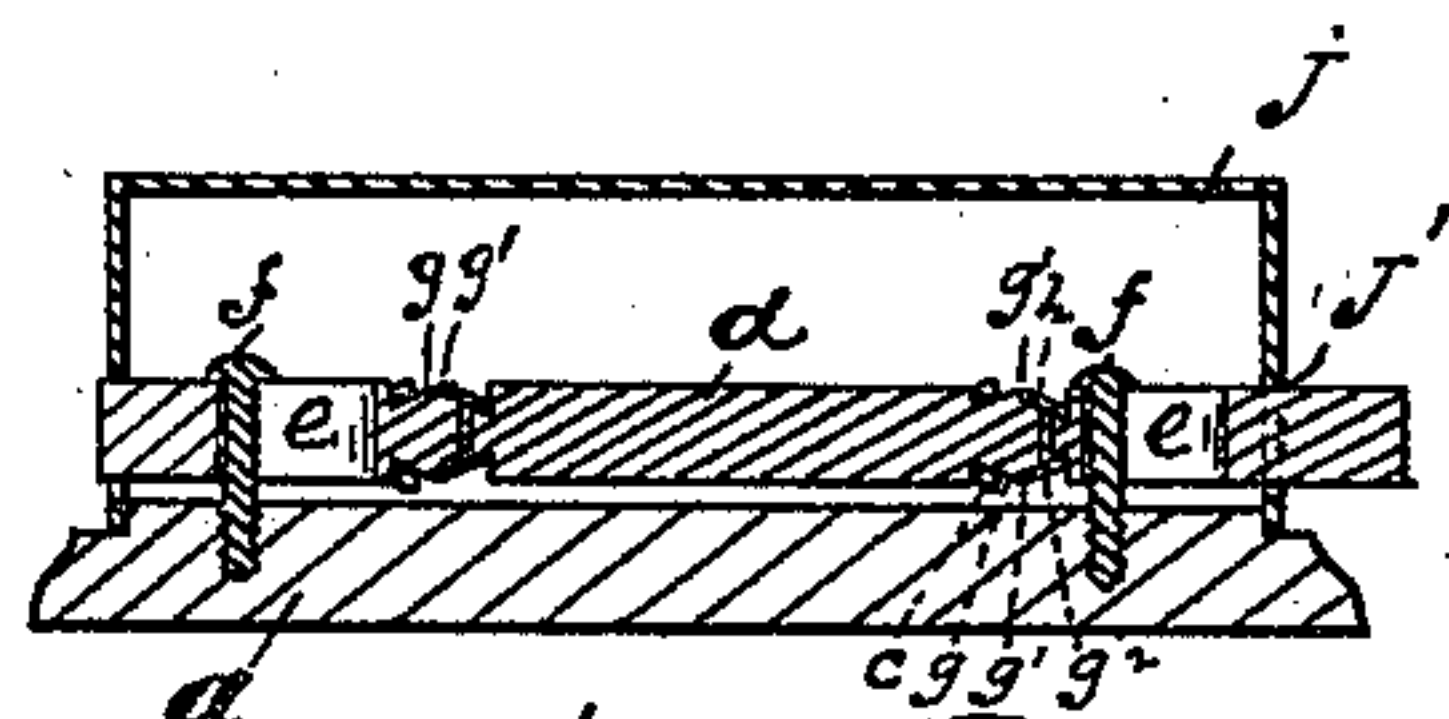


Fig. 3

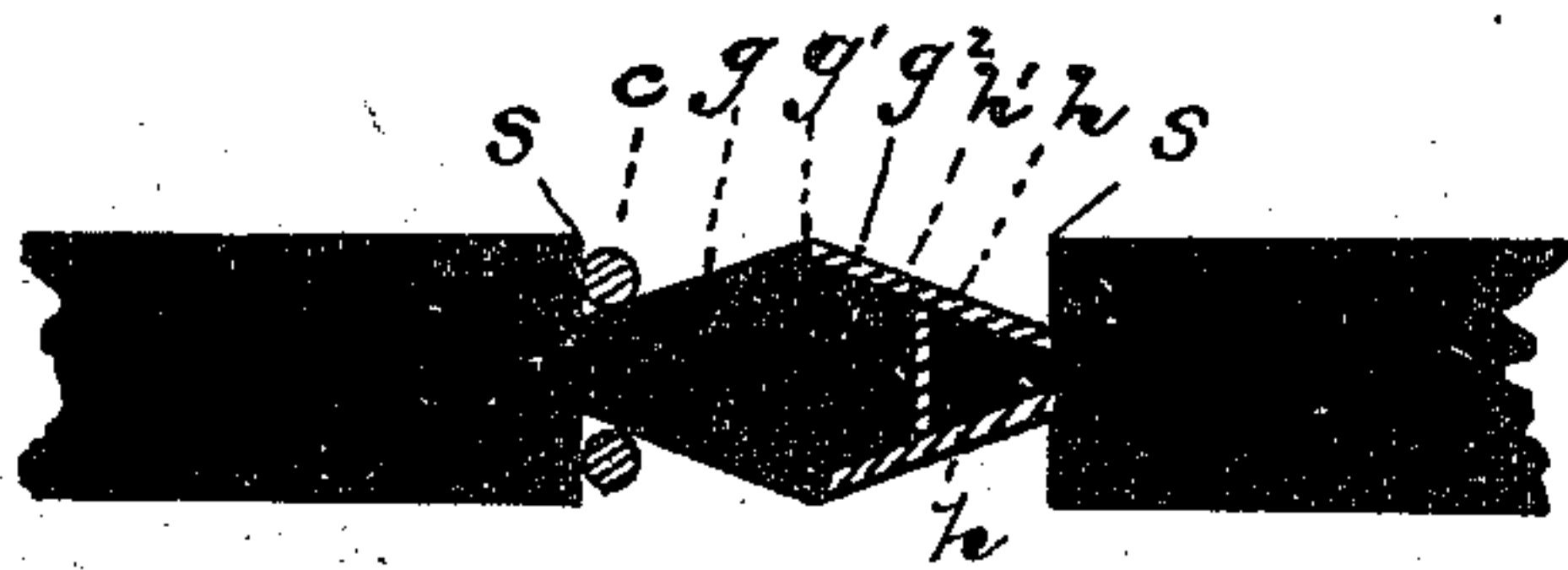


Fig. 6.

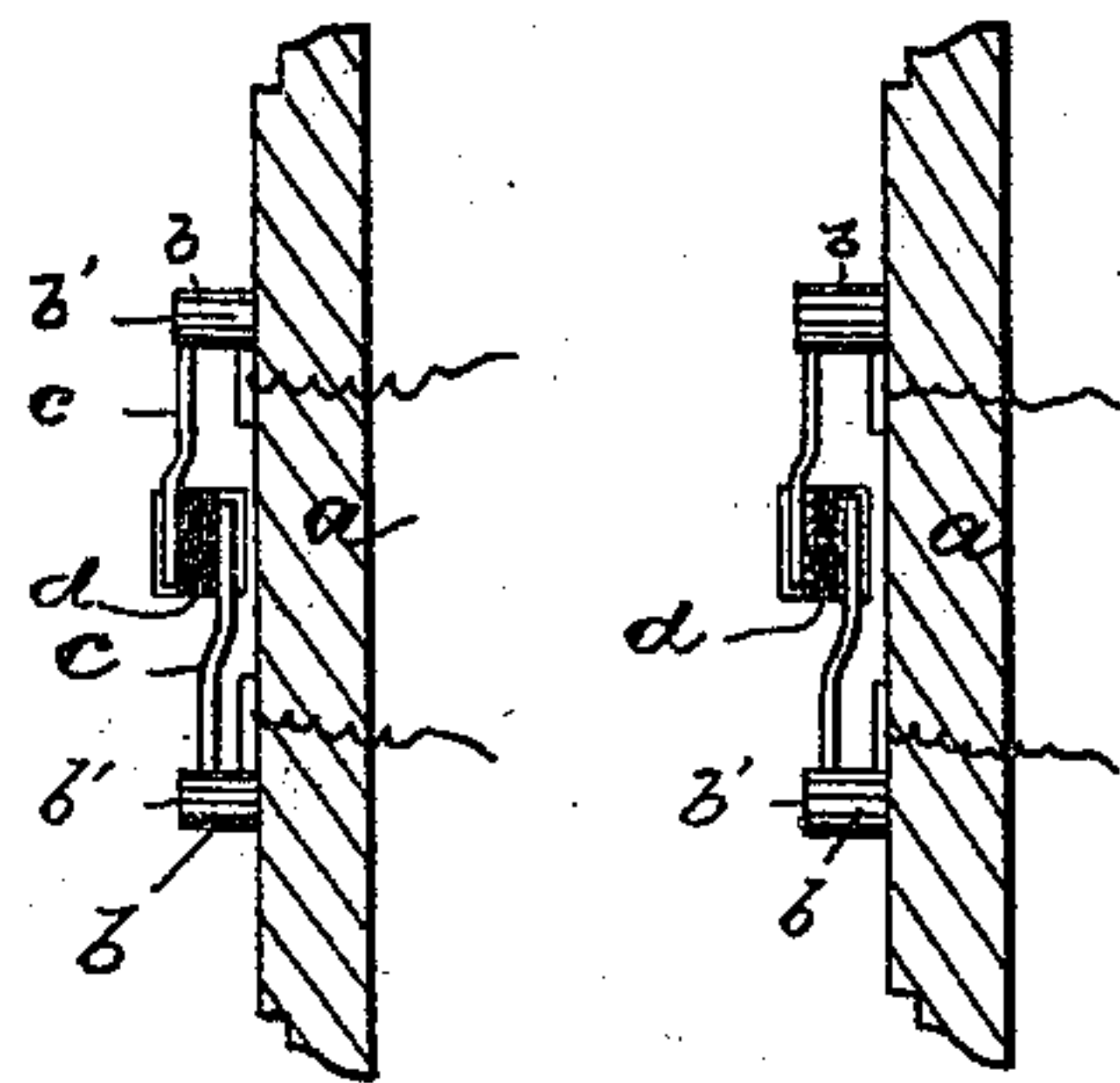


Fig. 4. Fig. 5.

WITNESSES:

E. L. Sherman  
Alfred Gartner

INVENTOR

Walter Thompson,

BY Walter Thompson ATTY'S.



# UNITED STATES PATENT OFFICE.

WALTER THOMPSON, OF ORANGE, NEW JERSEY.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 408,678, dated August 6, 1889.

Application filed April 24, 1889. Serial No. 308,421. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER THOMPSON, a subject of the Queen of Great Britain, residing at Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Electric Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the cost of construction, to reduce the number of parts in the device, to secure a more perfect contact of terminals, to prevent or reduce the liability of producing a spark at said terminals, to simplify and render more convenient and easy the operation of switching or making or breaking a circuit, to render the device more durable, and, generally, to secure other advantages and results which will be hereinafter set forth in connection with the description of the construction of the working parts, whereby the device is rendered more efficient as a switch or circuit breaker or closer.

The invention consists in the improved circuit breaker or closer or switch, and in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is an elevation of a lamp having my improvements therein. Fig. 1<sup>a</sup> is a section of the same, taken through line *x*. Fig. 2 is a plan of a switch for wall or table purposes more especially, the cap being removed or broken away to show the working parts. Fig. 3 is a section of the same, taken through line *y*; and Figs. 4 and 5 are sections taken through line *z*, the first showing the parts in their "off" position and the second in their "on" position. Fig. 6 is a detail view of a certain sliding bar and spring-arms.

In said drawings, *a* indicates a suitable bed-plate, which provides suitable bearings for the studs or binding-posts and other parts,

the said bed-plate, preferably, being in the form of a disk, as in Fig. 2.

*b b b b* are binding-posts secured to the said disk or bed-plate in pairs and extending through the said plate or disk, or otherwise arranged or disposed to receive the conducting-wires in any suitable manner.

The studs or posts extend above the outer surface of the disk, as at *b'* in Figs. 4 and 5, and each is provided with a spring-arm *c*. These said arms *c* extend oppositely, as indicated in Figs. 2, 4, and 5, and overlap one another, so that a bar *d*, extending at right angles to said springs, may lie between them, the spring-arm of one of said posts lying above said bar *d*, and the arm from the other post lying against the opposite side of said bar, as shown in Figs. 3, 4, and 5. The said bar *d* slides on suitable bearings on the disk, being preferably slotted, as at *e e*, and the said disk being provided with screws or posts *f f*, which lie in the slots of said bar and guide and limit the movement of said bar, as will be understood.

Where the spring-arms engage the bar the latter is oppositely beveled, as shown in Figs. 1, 1<sup>a</sup>, and 3, so that when the bar is moved to one limit of its movement the spring will engage one of the inclines *g*, and when moved to the opposite limit the said arms will pass over the crown or crest *g'* and engage the opposite incline *g*<sup>2</sup>, as will be understood upon reference to Fig. 3.

The crest or apex of the angle formed by the opposite inclines is such that the springs will not lie at rest thereon when moved from one side to the other, but will make a complete passage over said crest, insuring a perfect contact or break.

At the foot of the inclines, or at the ends thereof opposite the crest where the two opposite inclines come together, are shoulders or stops *s*, formed so that the spring-arms will not ride thereover. These limit the movement of the sliding bar *s*, so that the posts or studs *f f* may be dispensed with so far as limiting the movement is concerned.

The sliding bar is made of hard rubber or other non-conducting or insulating material, and on one set of inclines of said bar are secured metallic plates *h h*, which are connected by a pin *h'*, passing through said bar. When the bar is pushed from the inclines *g*, where



the spring-arms are insulated from one another, to the inclines  $g^2$ , where the connected plates  $h$   $h$  engage the said spring-arms, the circuit is made complete, the electric current  
 5 passing from the conducting-wire  $i$  through post  $b$ , upper arm  $c$ , plate  $h$ , pin or connection  $h'$  under plate  $h$ , the lower or inner arm  $c$ , post  $b$  to wire  $i'$ , or vice versa, as will be understood.

10 The metallic contact-surfaces  $h$   $h$  are formed on an incline, and the spring-arms engage the same with a sliding or rubbing movement. Thus the contacts are made more perfect and reliable.

15 The ends of the sliding bar extend through openings in the cap  $j$ , or beyond the limits of the bed-plate, as at  $j'$  in Fig. 2, and provide finger-pieces or parts adapted to be employed in pushing the bar  $d$ . Said projecting ends  
 20 are preferably provided with the words "On" and "Off," or other legends or inscriptions indicating that the wires and connected parts are in or out of a continuous conducting relation to one another.

25 I am aware that various changes and modifications may be made in the device without departing from the spirit or scope of this invention, and I do not therefore wish to limit myself to such a construction as is illustrated  
 30 in Fig. 2. I have shown one variety differing from the one shown in Fig. 2 in Figs. 1 and 1<sup>a</sup>, where the sliding bar is applied directly to an electric lamp. In this case the sliding bar has its bearings in the lamp-socket and  
 35 the slots  $e$   $e$  are dispensed with, and instead of breaking the circuit at two points therein the circuit is broken but once.

The metallic plates which cover the inclines  $g^2$   $g^2$  on the opposite sides of the sliding bar present broad contact-surfaces to the  
 40 conducting spring-arms  $c$ , and thus a perfect contact is insured and danger of producing a spark and burning the terminals is avoided. The arms  $c$   $c$  having a sliding and scraping  
 45 action on the plates  $h$   $h$ , the latter are kept bright and in the best condition of conductivity.

Having thus described the invention, what I claim as new is—

1. The improved switch, combining with a bed having terminals of an electric circuit  
 50 secured thereon and projecting toward one another at approximately right angles to a sliding bar and overlapping one another, as shown, said sliding bar interposed between  
 55 said overlapping terminals and provided on opposite sides thereof with opposite inclines  $g$   $g^2$   $g$   $g^2$ , which unite at a point or apex  $g'$ , and a connection  $h'$ ; substantially as and for the purposes set forth. 60

2. The improved switch combining with a bed having springs  $c$   $c$ , serving as terminals, secured thereto, a sliding bar having opposite  
 65 inclines  $g$   $g^2$ , forming an apex  $g'$ , and a connection  $h'$ , for connecting the terminals  $c$   $c$ , said connection having inclined contact-surfaces over which said springs may slide, substantially as and for the purposes set forth.

3. In combination with the disk or bed-plate  $a$ , having screws or pins  $f$   $f$  and a cap  
 70  $j$ , a slotted bar  $d$ , of non-conducting material, extending at its opposite extremities through said cap, the said bar being provided with opposite inclines  $g$   $g^2$ , the latter being provided with an inclined contact-plate serving  
 75 as a terminal of a circuit, and a spring-arm  $c$ , serving as a co-operating terminal, substantially as and for the purposes set forth.

4. In combination with the disk or bed-plate  $a$ , having screws or pins  $f$   $f$  and a cap  
 80  $j$ , a slotted bar  $d$ , of non-conducting material, extending at its opposite extremities beyond the limits of said cap, the said bar being provided with opposite inclines  $g$   $g^2$ , which unite  
 85 at point  $g'$  and extend therefrom to shoulders or stops  $s$ , said inclines and stops being on opposite sides thereof, and spring-arms  $c$   $c$ , extending into engagement with the opposite sides of said bar, substantially as set forth.

In testimony that I claim the foregoing I  
 90 have hereunto set my hand this 15th day of April, 1889.

WALTER THOMPSON.

Witnesses:

ALFRED GARTNER,  
 E. L. SHERMAN.