

No. 687,916.

Patented Dec. 3, 1901.

E. S. COOK & W. H. CHIPPERFIELD.  
ELECTRIC SWITCH.

(Application filed Mar. 22, 1901.)

(No Model.)

Fig. 1.

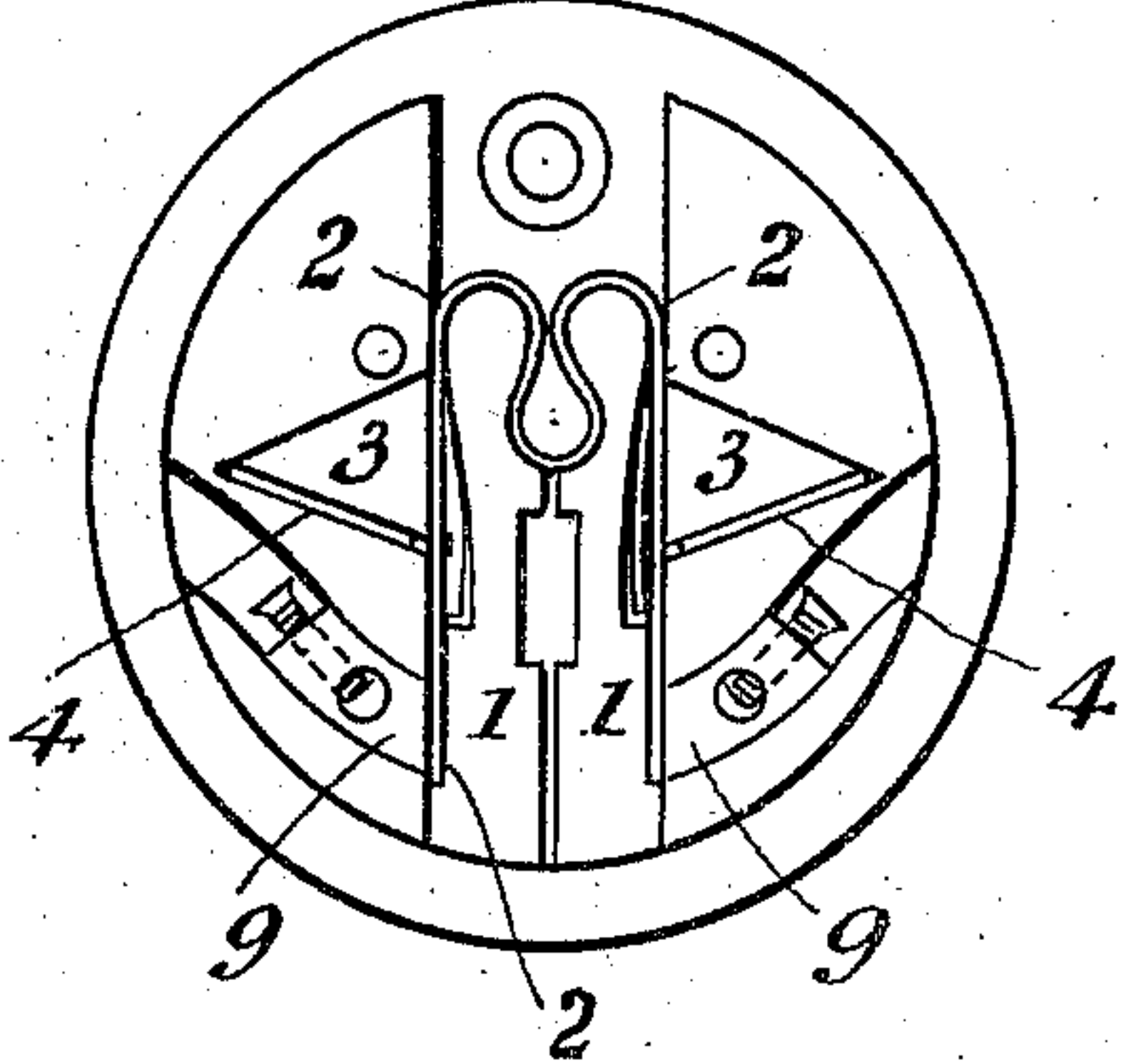


Fig. 2.

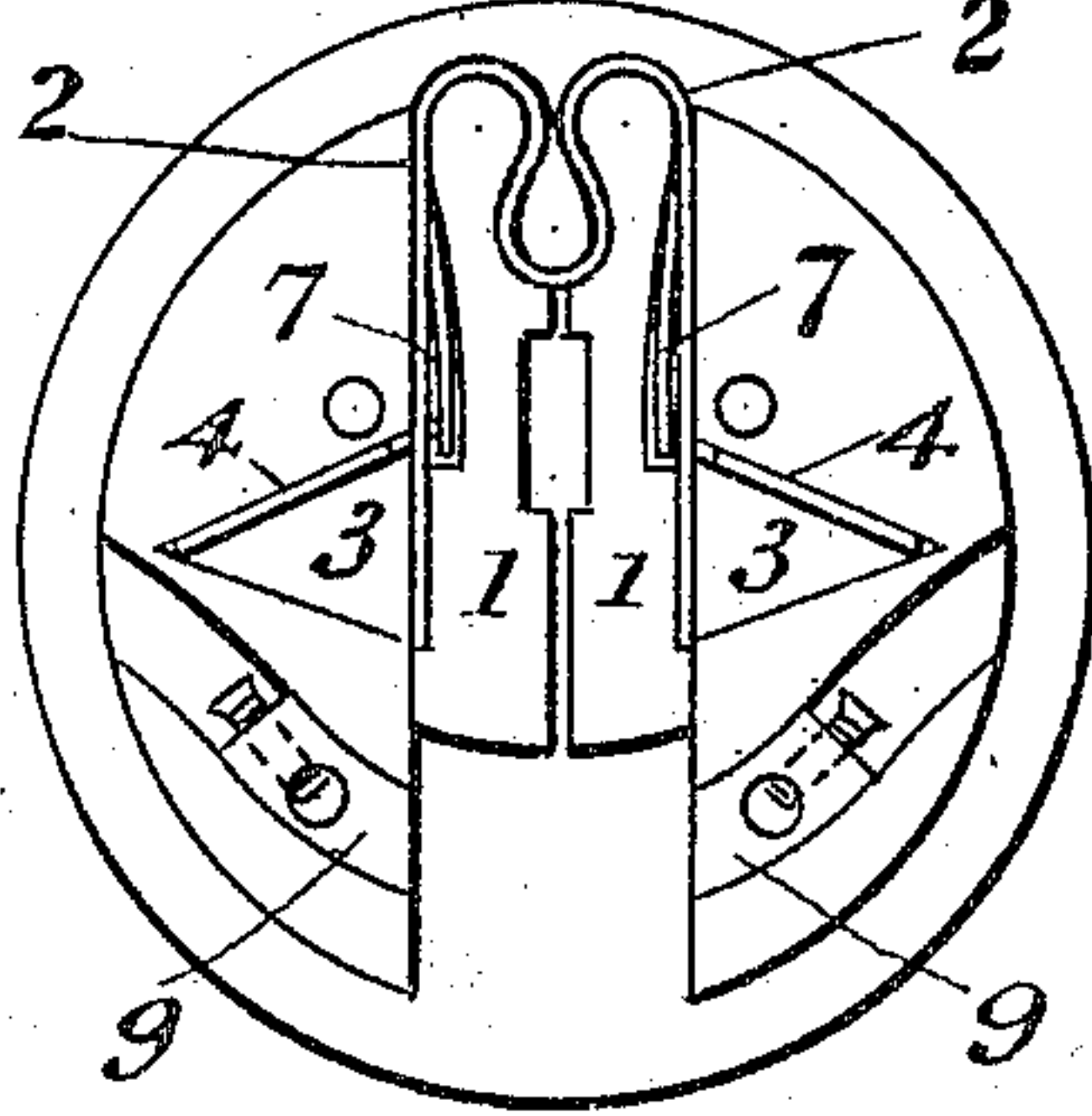


Fig. 3.

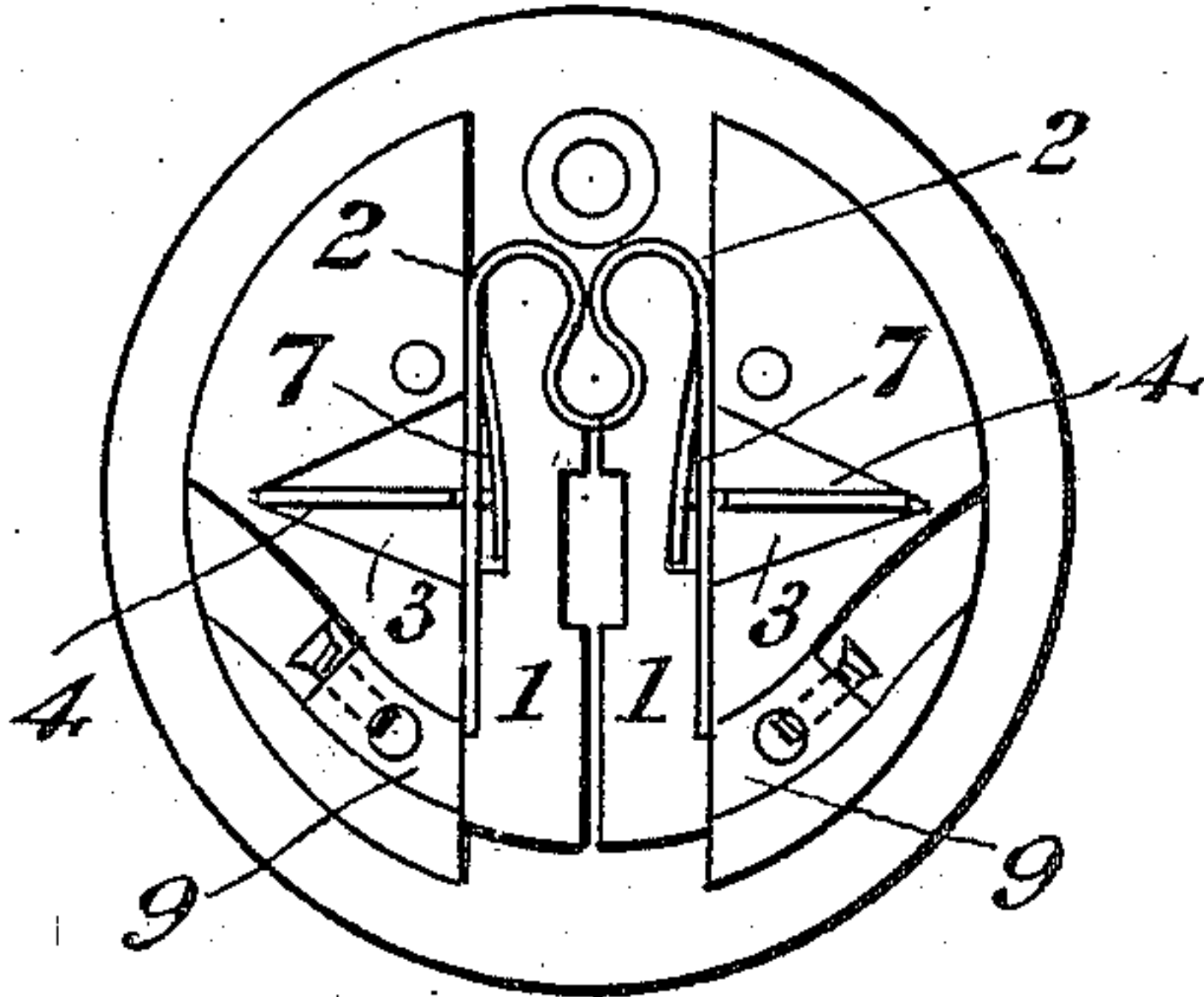


Fig. 4.

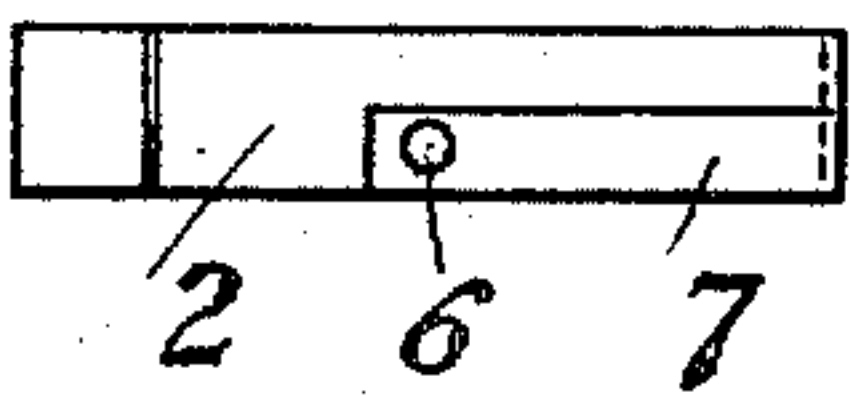


Fig. 5.



Fig. 6.

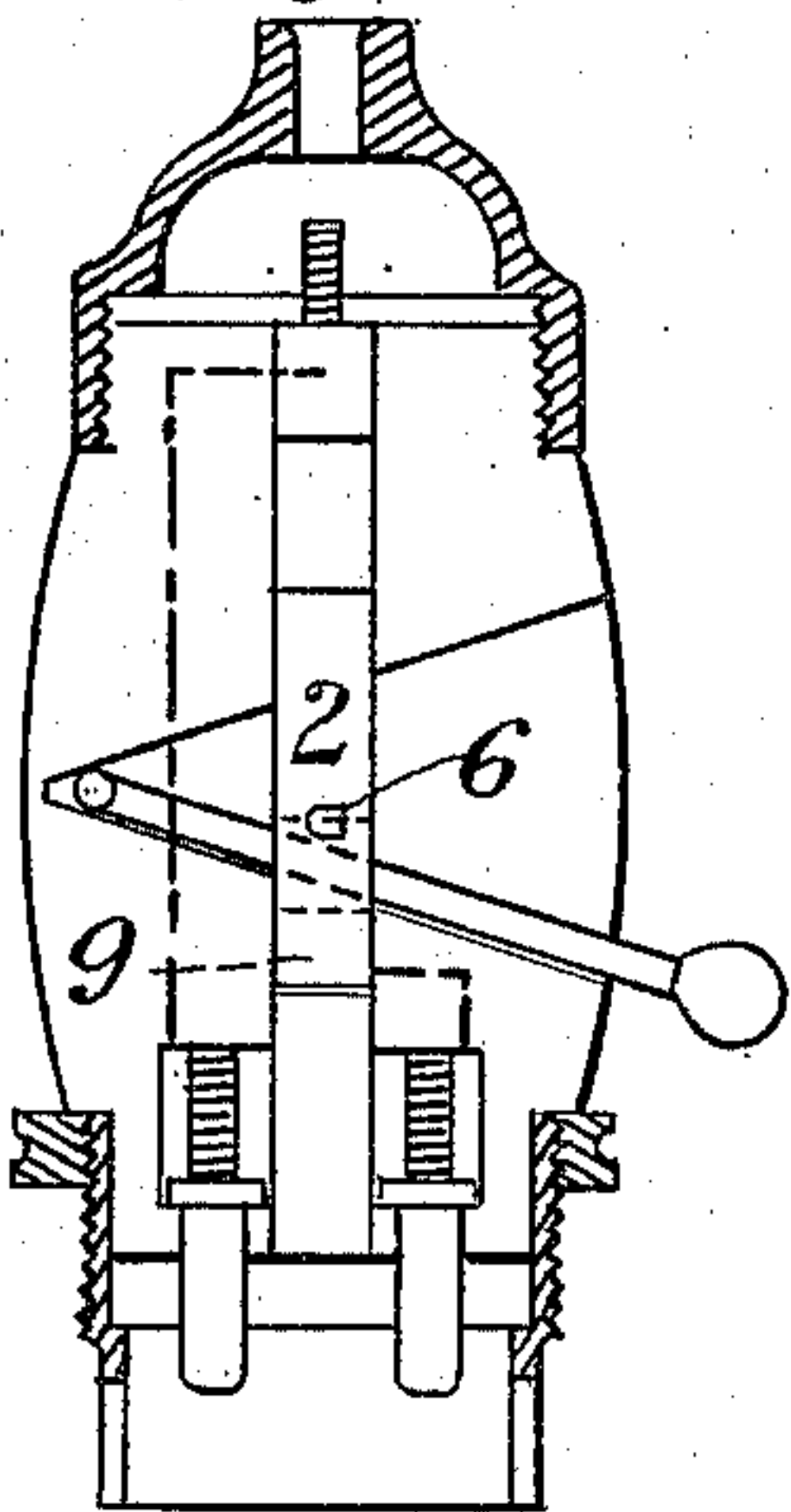


Fig. 7.

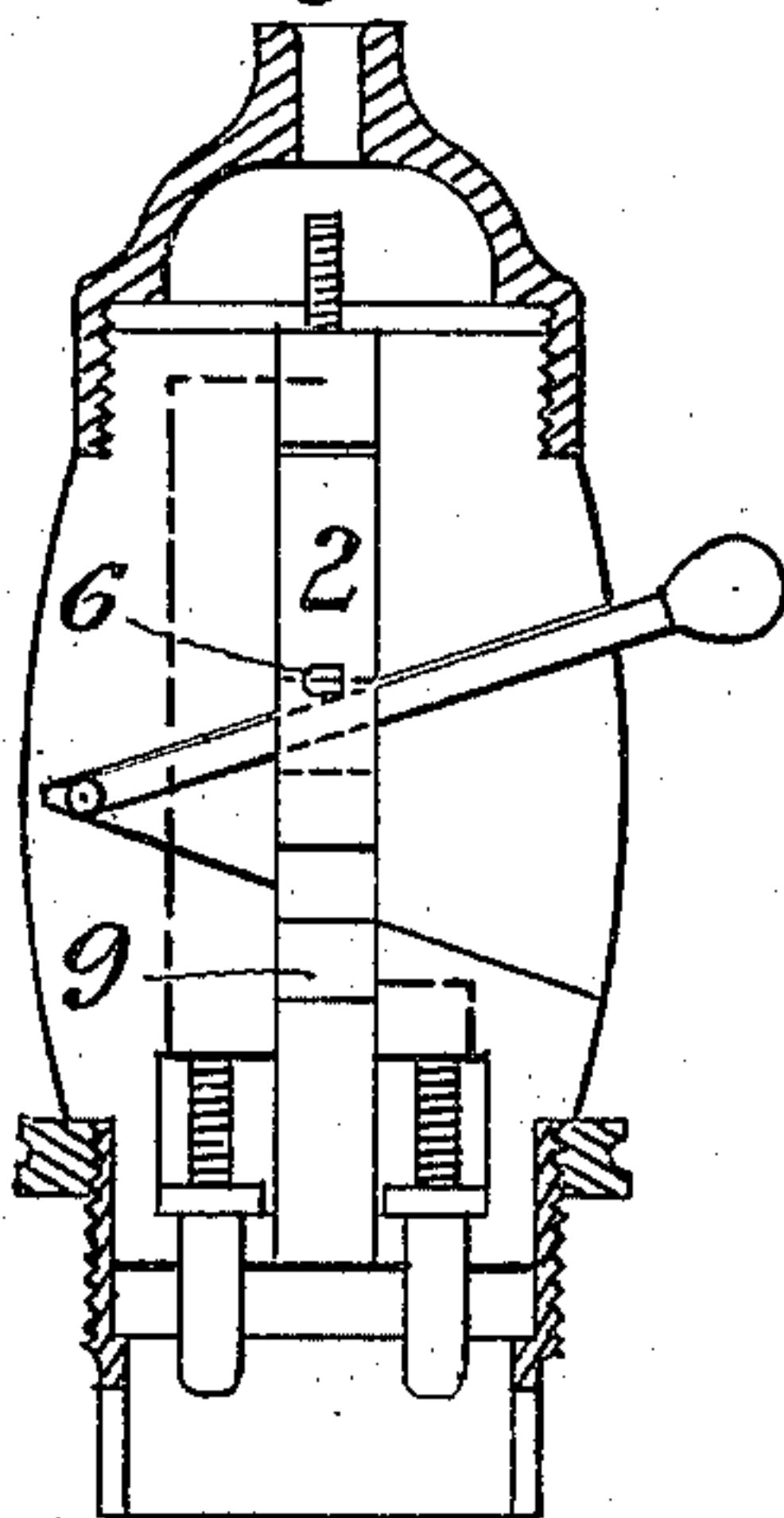
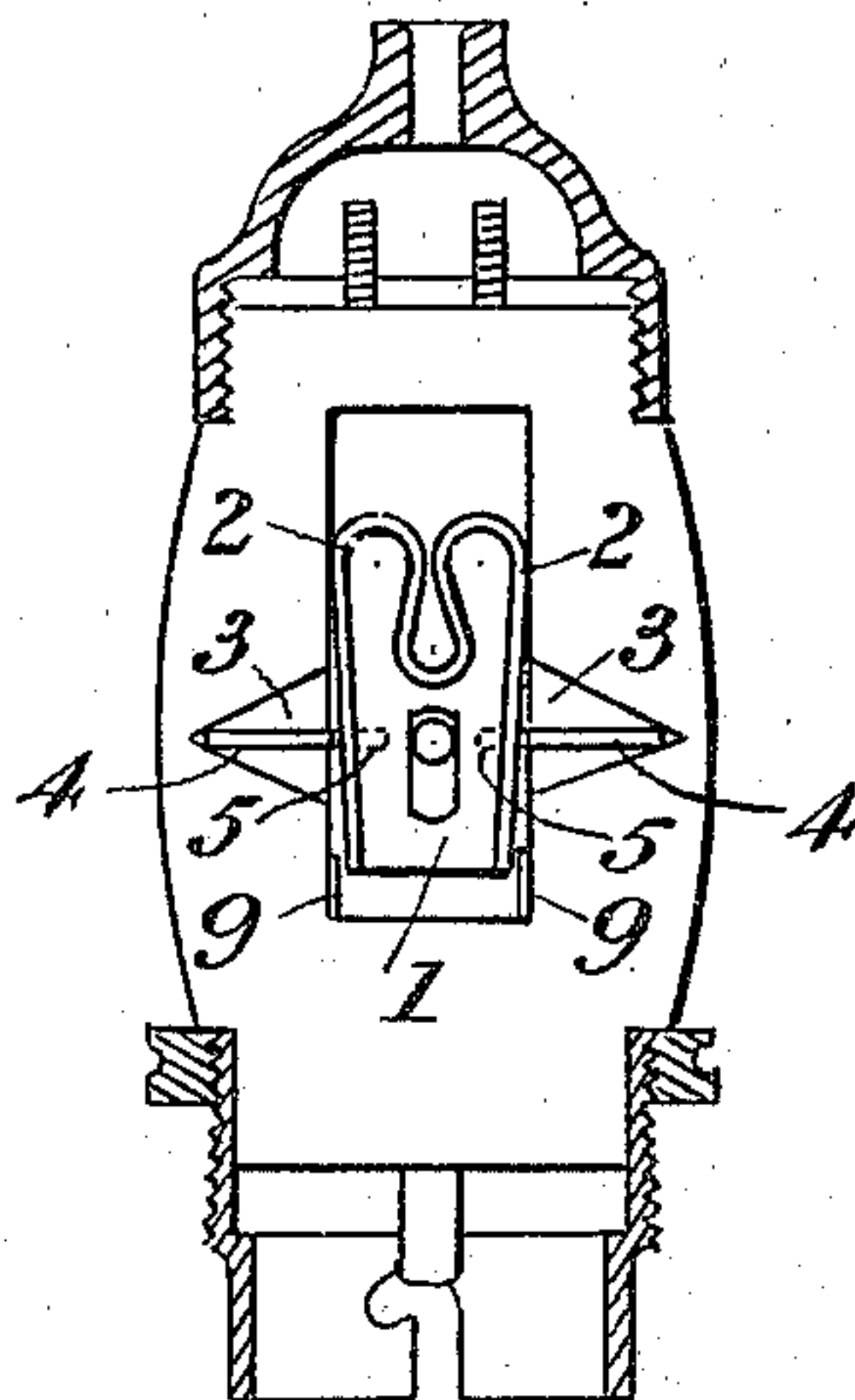


Fig. 8.



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# UNITED STATES PATENT OFFICE.

EDWARD SAMUEL COOK AND WILLIAM H. CHIPPERFIELD, OF LONDON,  
ENGLAND.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 687,916, dated December 3, 1901.

Application filed March 22, 1901. Serial No. 52,422. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD SAMUEL COOK, residing at No. 274 South Lambeth road, and WILLIAM HOWARD CHIPPERFIELD, residing at No. 57 Hampden road, Hornsey, London, England, subjects of the King of Great Britain and Ireland, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

Our invention has reference to electric switches whereby the circuit is made and broken by a conductor attached to an insulating sliding piece which is moved into and out of position for completing the circuit by a handle or thumb-piece or any of the well-known means at present in use.

The objects of our invention are to prevent the sliding piece, and consequently the conductor, being left in such a position that a leakage of the current would be caused between the conductor and the contact-pieces when the lamp is shut off; secondly, to reduce the liability of an arc being set up between the said parts when they are not in contact, and, thirdly, to render the switch more compact, durable, and less liable to get out of order. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a part plan of an ordinary wall-switch, showing the circuit completed. Fig. 2 is a similar plan with the circuit broken. Fig. 3 is a like view with the struts or stud-pieces in the center of their travel and showing the circuit still completed. Fig. 4 is a side elevation of the conductor and spring-piece, which are attached to the sliding piece, the spring showing the hole for receiving the end of the strut or stud-piece. Fig. 5 is a plan of a form of strut or stud-piece suitable for use when the conductor and spring are in two separate pieces, as shown in Figs. 1, 2, and 3. Fig. 6 is a vertical section of a switch as applied to an incandescent electric-lamp holder and showing the circuit completed. Fig. 7 is a similar view with the circuit broken. Fig. 8 is a vertical section at right angles to Figs. 6 and 7 and showing the struts or stud-pieces in the center of their travel with the circuit broken.

Similar numbers refer to similar parts throughout the several views.

The walls of the slot or recess in the bed of the switch, within which the moving or sliding piece 1, carrying the conductor 2, moves, have suitably-shaped recesses or indents 3, within which move stud-pieces or struts 4, of metal or other suitable material. One end 5 of these stud-pieces or struts takes into a slot or hole 6 in the arms of a spring-piece 7, which may or may not, as desired, be the conductor. In lamps of considerable power it is desirable to have the conductor and spring in two separate pieces to insure a more perfect make and break of the current, but in lamps of small power the spring-piece may be the conductor, as shown in Figs. 6, 7, and 8. The other end 8 of the strut or stud-piece finds a bearing against the bottom of the recess or indent 3. Thus when the conductor 2 and the spring-piece 7, when they are separate, are carried along by the insulating sliding piece 1 to establish contact the arms of the spring-piece are forced in or compressed by the struts or stud-pieces 4 as the latter are moved through the arc of a circle. When they are in the center of their travel, as shown in Fig. 3, the conductor 2 will then be in complete contact with the contact-pieces 9, and immediately they have passed the center of their travel the spring 7 will instantly force the struts or stud-pieces 4 back to the wall of the recess or indent 3 and the circuit fully completed, as shown in Fig. 1. When the circuit is to be broken, it is completely maintained until the struts or stud-pieces 4 have passed the center of their travel, when the spring 7 will again instantly force them back to the opposite wall of the recess or indent 3, and the circuit will be completely and rapidly broken, as shown in Fig. 2.

We are aware that prior to our invention moving insulating-pieces carrying spring-conductors capable of compression have been made, and we do not claim such; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

The combination with a base-piece having a central channel and recesses on each side thereof opening into the same, of fixed con-

tacts on each side of the channel, sliding contacts moving in the channel, struts movable in said recesses and a connection between the struts and the movable contacts for automatically forcing the contacts to complete their movement in either direction after they have been partly moved into cut-out or cut-in position manually, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

EDWARD SAMUEL COOK.  
WM. H. CHIPPERFIELD.

Witnesses:

PERCY E. MATTOCKS,  
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