

(No Model.)

C. G. PERKINS.

CIRCUIT BREAKER FOR ELECTRIC LAMPS.

No. 247,103.

Patented Sept. 13, 1881.

Fig. 1

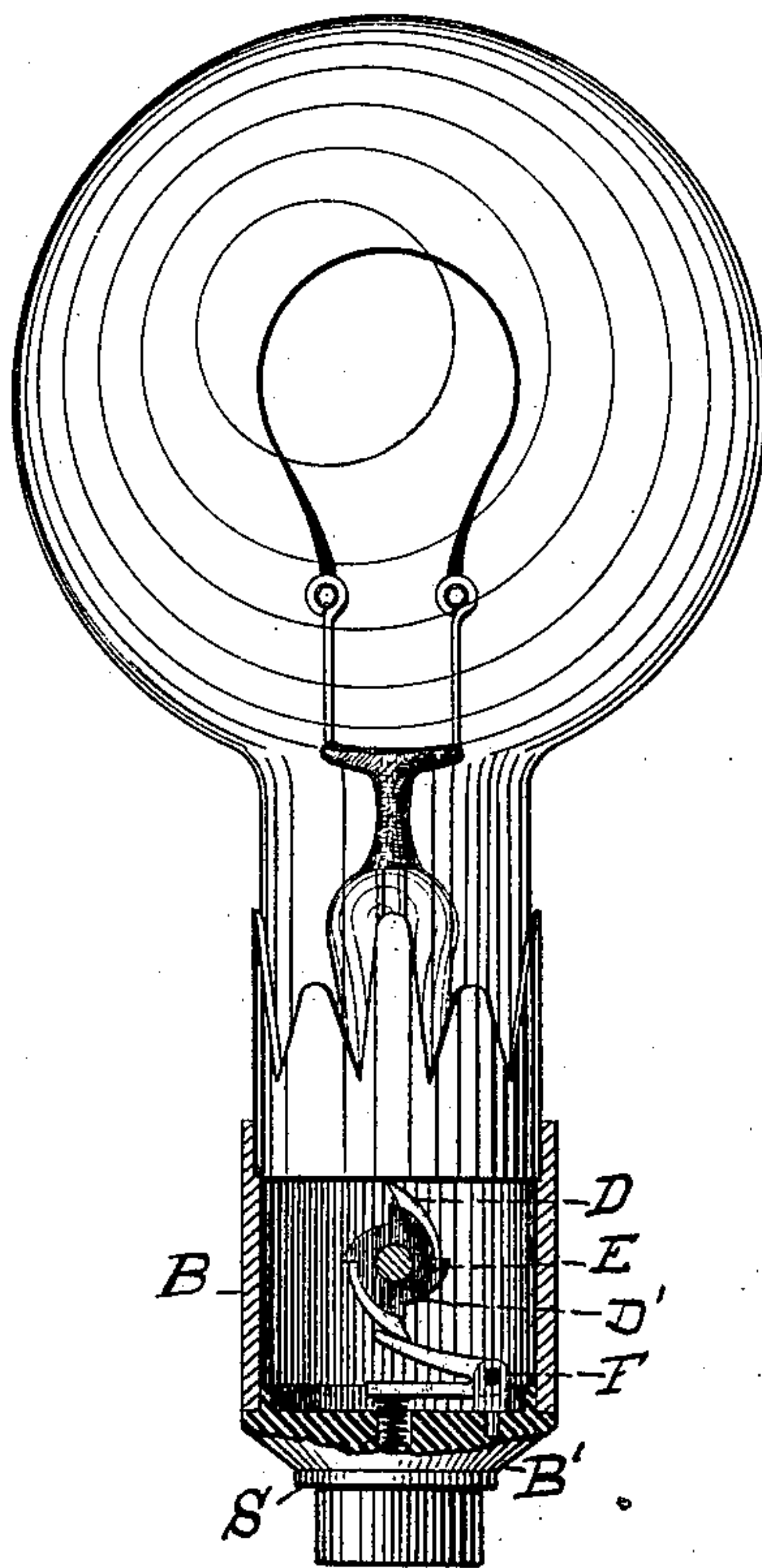


Fig. 3.



Fig. 2.

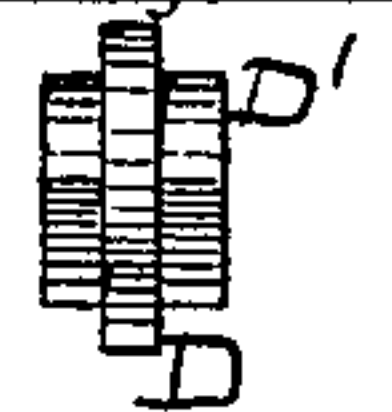
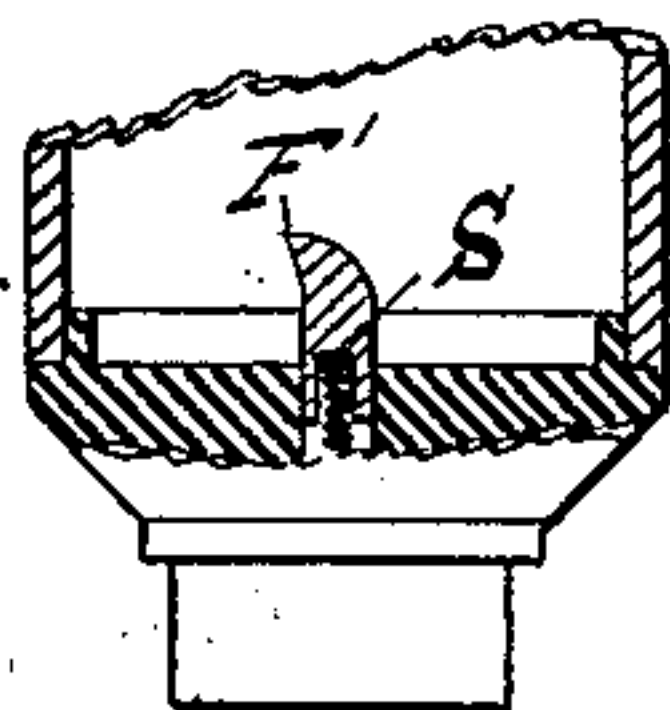


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES G. PERKINS, OF NEW YORK, N. Y., ASSIGNOR TO THE UNITED STATES ELECTRIC LIGHTING COMPANY, OF SAME PLACE.

CIRCUIT-BREAKER FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 247,103, dated September 13, 1881.

Application filed February 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. PERKINS, of the city, county, and State of New York, have invented a new and useful Circuit-Breaker for Electric Lamps, of which the following is a specification.

My invention relates to improvements in that class of switches for incandescent electric lamps in which the break is effected by the snap or instantaneous reaction of a spring when released from contact with a conducting point or plate; and it consists in mechanical details for effecting this, the principal features of which are a ratchet-wheel having both conducting and insulating teeth combined in operative relation with a spring pawl or detent, which acts as a contact-maker with the conducting portions of the ratchet, and by engagement with the insulating-teeth prevents the ratchet from being turned backward when the pawl has been released from contact with the said metallic portions.

In the accompanying drawings, Figure 1 is a view, partly in section, of the switch as applied to the base or socket of an incandescent lamp; Fig. 2, a front view of the ratchet-wheel forming a part of the circuit-breaking mechanism; Fig. 3, a perspective of the contact lever or pawl, and Fig. 4 a part section of a modified form of the same.

Similar letters refer to corresponding parts in the several figures.

A metal shaft, E, is journaled in opposite sides of the insulating-base B, and carries an S-shaped metal piece, D, on each side of which insulating ratchet-disks D', of a diameter less than the length of D, are fixed. The teeth of the disks D' are four in number, and arranged to project beyond the narrow portion of piece D.

Below the ratchet D', in the chambered base B, is a V-shaped pawl, F, having one of its arms widened at *f*, and is pivoted, as shown, to a standard fixed to the lower part, B', of the lamp-base. A spring, S, attached to or fitting in a recess in the part B', actuates the pawl F and keeps the same in engagement with the ratchet. The lever F is connected with one of the line-wires through spring S, and when it is depressed by the contact of one of the projections D the circuit is completed to shaft E, and from thence to one of the terminals of the lamp. It may be stated that the other terminal is in permanent electrical connection with

one of the line-wires, either through the bracket or by means of an additional wire connection. To break the circuit the shaft E is turned a quarter revolution. This releases the pawl F from D and allows its widened end to engage with the insulating-ratchets D' and prevent them from being turned backward.

Instead of a swinging pawl, I sometimes employ a spring-seated contact-stop with a broadened end, as shown in Fig. 4, which acts as a detent with ratchet D' when not depressed by projections D, and thus prevents the shaft from being turned in both directions.

The principal advantages secured by the constructions above described are, first, that the circuit cannot be completed by turning the key backward, so that when the circuit is broken it must be accomplished by an instantaneous snap or reaction of the spring-pawl as it leaves the conducting portion of the ratchet; secondly, that the contact-spring cannot be injured by the attempts of incautious persons to turn the key backward, as might be the case with the lamps now in use; thirdly, good conducting metals which do not possess the requisite resistance for contact-springs may be employed with a spiral spring of steel or similar metal; and, finally, the arrangement of the parts is compact and durable.

Having thus described the nature and object of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in an electric-light switch, of a ratchet having metallic projections and insulating-teeth in the intervals between the same and a pawl or detent for engaging with the insulating-teeth when released from contact with the metallic projections, as and for the purpose specified.

2. The combination of insulating-ratchet D' and metallic plate D, secured together to the same shaft, V-shaped contact-pawl F, having a broadened bearing-surface, *f*, and spring S, arranged substantially in the manner described.

In testimony whereof I have hereunto set my hand and seal this 31st day of January, 1881.

CHARLES G. PERKINS. [L. s.]

Witnesses:

JOSEPH V. NICHOLS,
L. H. LATIMER.