

(No Model.)

S. BERGMANN.
ELECTRIC LAMP SOCKET.

No. 389,280.

Patented Sept. 11, 1888.

Fig. 1

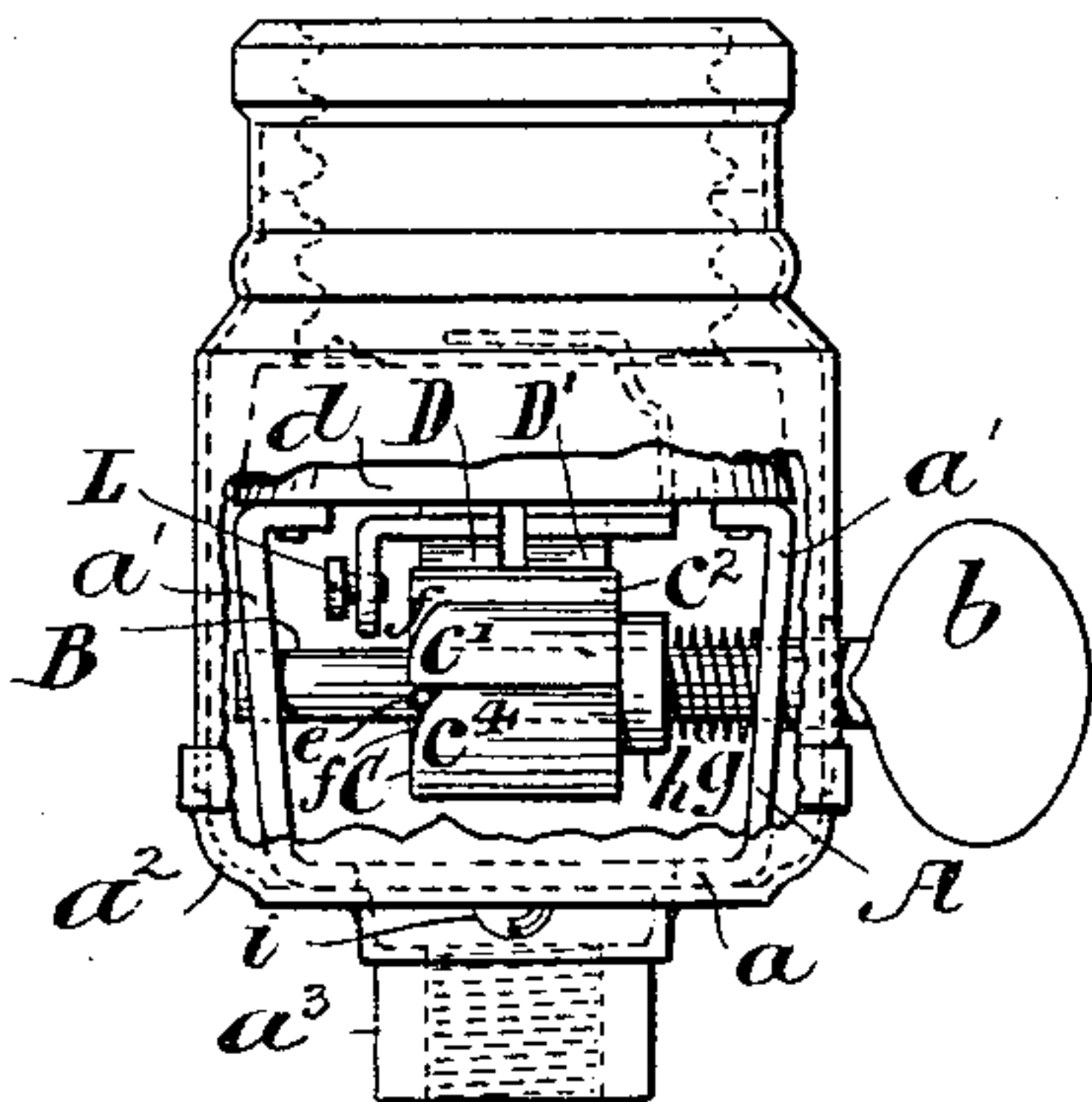


Fig. 2

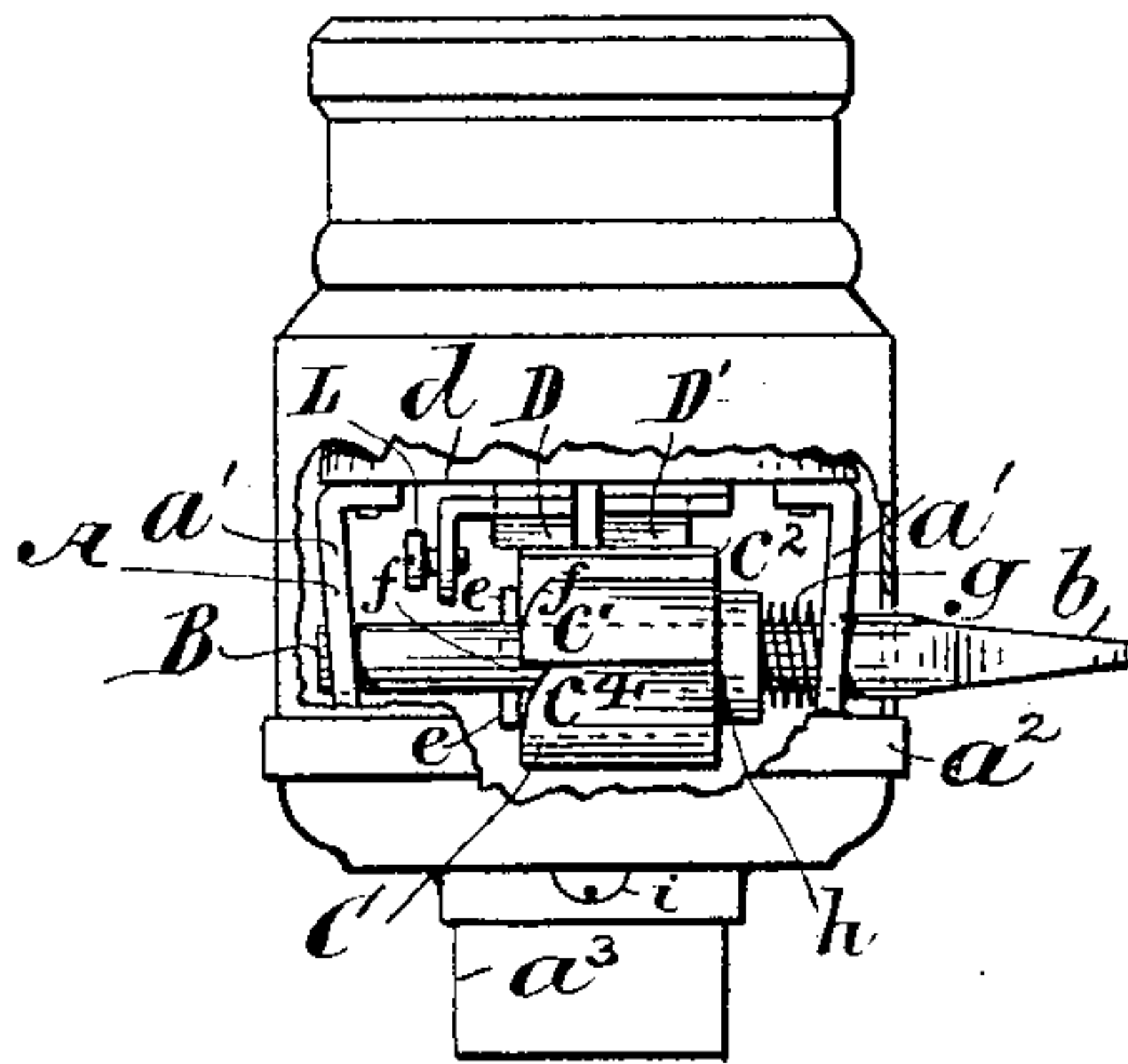


Fig. 3

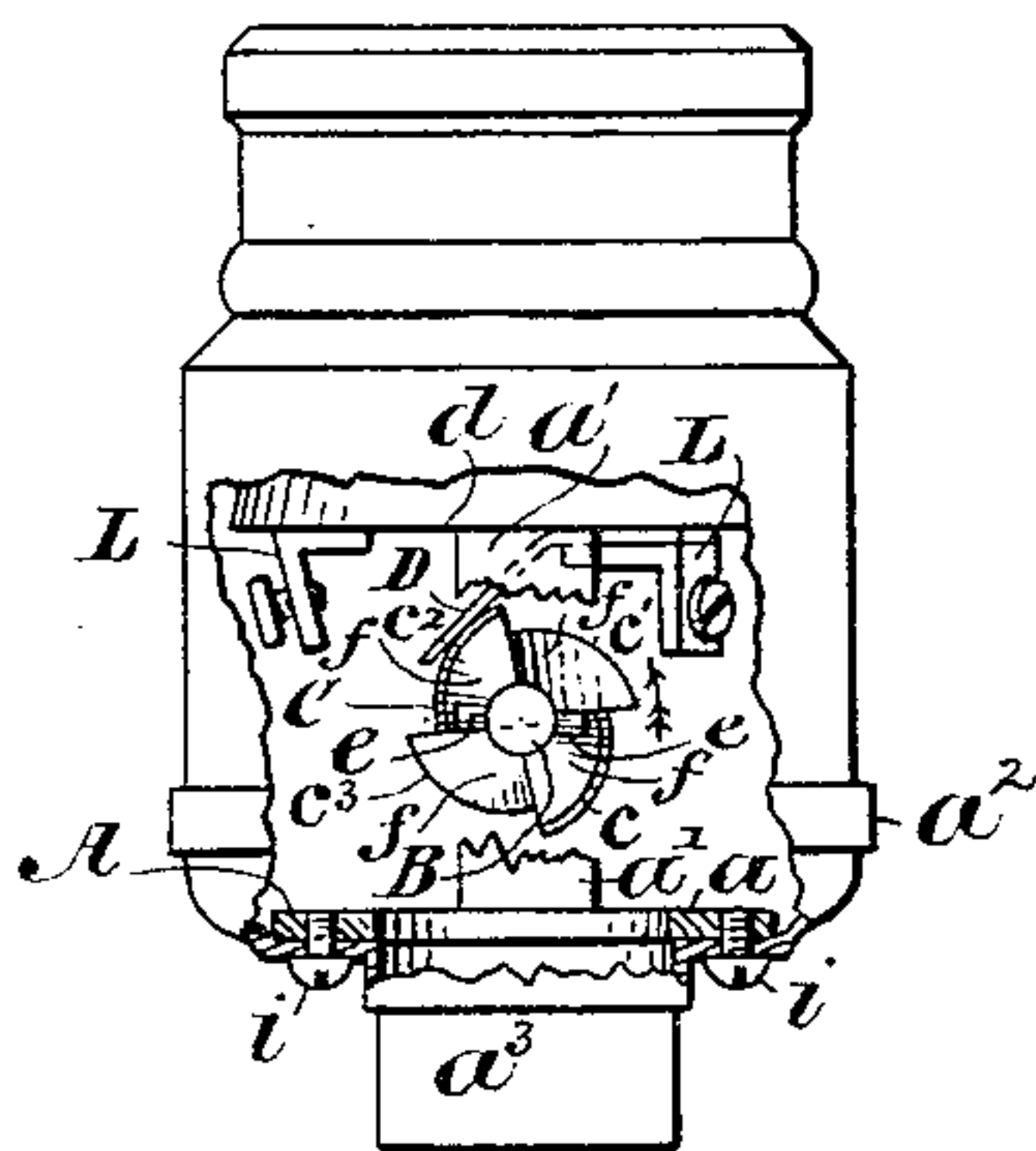


Fig. 4

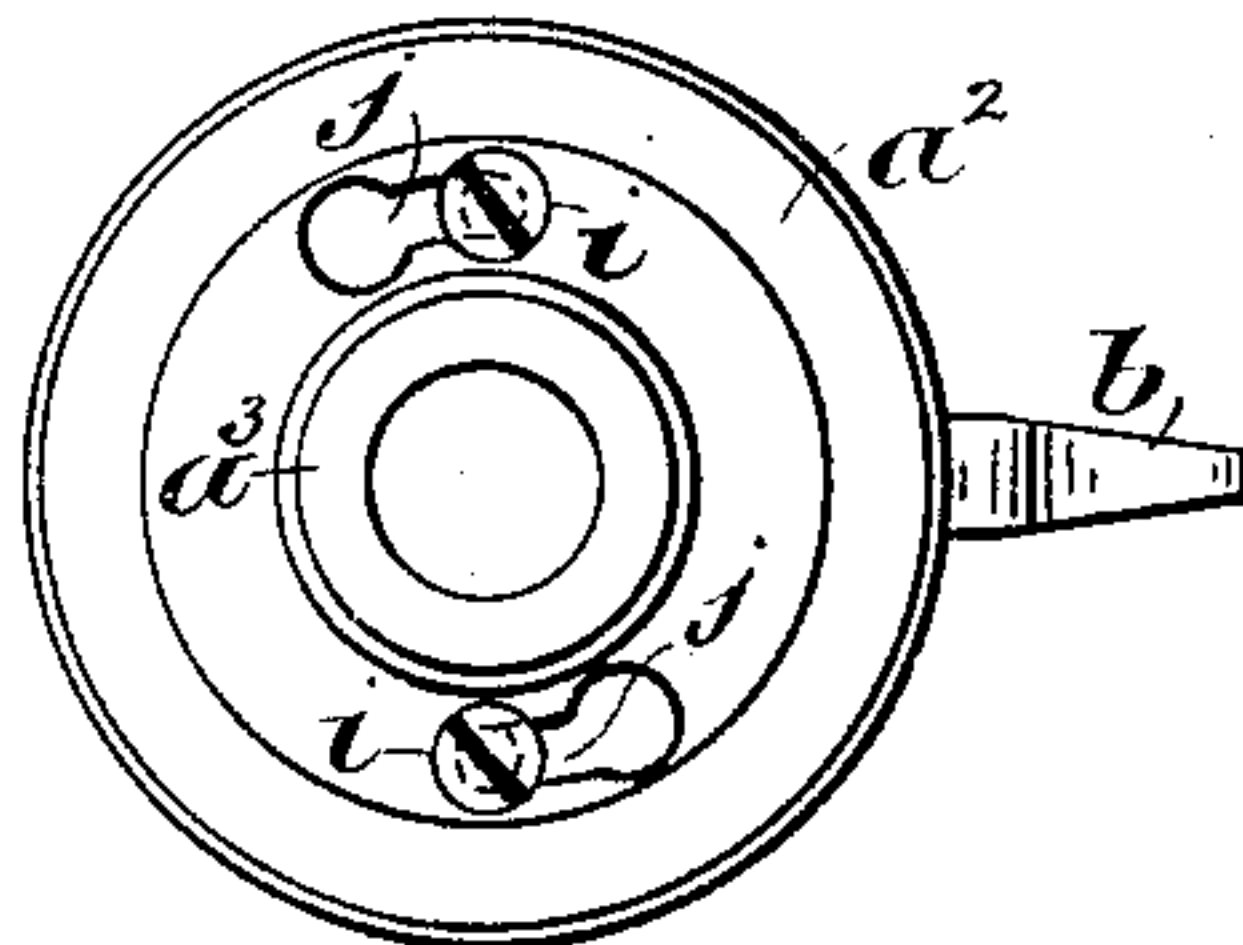
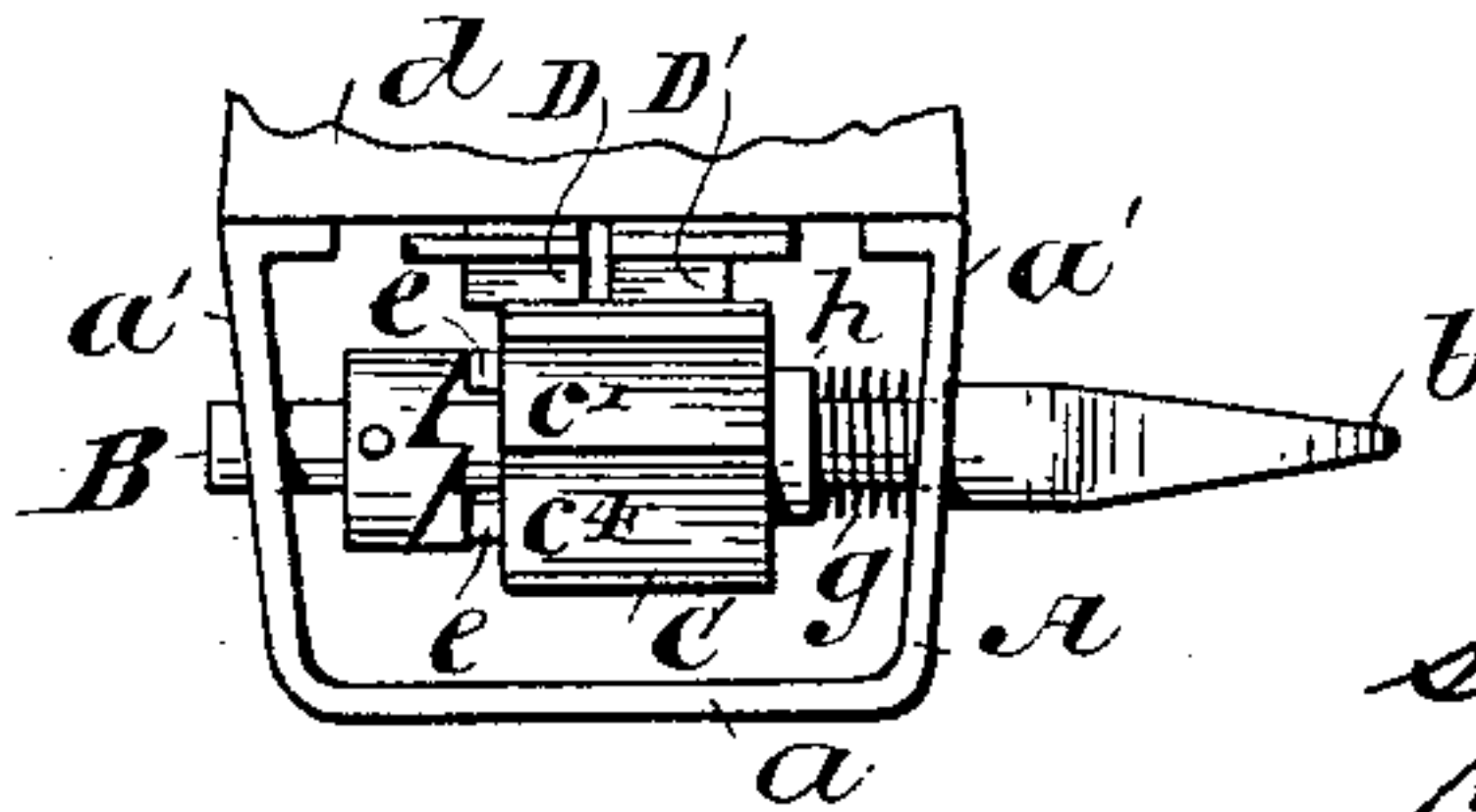


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ELECTRIC-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 389,280, dated September 11, 1888.

Application filed June 2, 1888. Serial No. 275,830. (No model.)

To all whom it may concern:

Be it known that I, SIGMUND BERGMANN, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Electric-Lamp Sockets, of which the following is a specification.

My improvement relates to lamp-sockets of the kind employed with incandescent lamps.

I will describe a lamp-socket embodying my improvement in detail, and then point out the novel features in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a lamp-socket embodying my improvement, certain parts being broken away to disclose parts which would otherwise be concealed. Fig. 2 is a similar view showing certain parts in a different position from that shown in Fig. 1. Fig. 3 is a side elevation looking in a direction at right angles to Figs. 1 and 2, certain other parts being broken away for clearness. Fig. 4 is a bottom view of the socket. Fig. 5 is a view in detail, showing a modification.

Similar letters of reference designate corresponding parts in all the figures.

A designates a metallic frame comprising a base portion, a , and upright portions a' . The base portion, a , is connected with a shell, a^2 , comprising a socket, a^3 , whereby the whole may be secured to a lamp-fixture in the usual manner. This connection is made by means of screws i , which screws extend through arc-shaped slots j in the shell a^2 beyond the socket a^3 . The screws engage tapped holes in the portion a of the frame. One of the ends of each of the slots j is provided with an enlarged circular portion, j' , of greater diameter than the heads of the screws. When it is desired to secure the main body of the lamp-socket to the shell, the screws i are loosened and the screw-heads passed through the enlarged portion j' of the slots. By then turning the socket the shanks of the screws will be moved along into the contracted portions of the slots. By then tightening the screws the whole will be firmly secured together. This arrangement affords a ready means for detaching the main portion of the lamp-socket from a lamp-fixture without being obliged to unscrew the shell a^2 and its socket a^3 from the fixture.

The upright portions a' of the frame A are

secured to a piece of insulating material, d , by which it is supported. These uprights constitute bearings for a shaft, B, provided with a hand-piece, b , whereby the shaft may be rotated.

Loosely mounted upon the shaft B is a switch-wheel, C. The exterior of this switch-wheel is composed of a number of spiral segment-surfaces, $c' c^2 c^3 c^4$, and intermediate radial portions. I have shown four such spiral segment-surfaces. They are approximately of the same shape as ordinary ratchet-teeth. The segment-surfaces $c^2 c^4$, which are opposed to each other and intermediate of the segment-surfaces $c' c^3$, are faced with metal, which may be copper. The segment-surfaces $c' c^3$ are unprovided with metal, and are non-conducting surfaces.

D D' designate metallic brushes secured to the plate of insulating material d in the usual or any desired manner, so as to be in proper electrical circuit. When these brushes bear upon the metallic surfaces on the switch-wheel and the lamp is connected in circuit, circuit will be closed on the lamp. When, on the contrary, the brushes are in contact with the non-metallic surfaces of the brush-wheel, circuit will be broken and the light extinguished.

L designates the usual binding-posts for the circuit-wires.

Inexperienced persons, in operating the hand-piece b to turn the light on and off, frequently attempt to turn the hand-piece in order to extinguish the lamp, in a contrary direction to that necessary to light it. With lamps as previously made this has often resulted in breakage or derangement of the parts, so as to render the lamp inefficient, for, the switch-wheel being rigidly secured to the shaft, the radial surfaces intermediate of the segments $c' c^2 c^3 c^4$ were brought violently into contact with the ends of the brushes, whereby the latter were bent or broken, or other damage ensued. To obviate this, I employ the following arrangement:

The switch-wheel is intended to be rotated in the same direction both to close and break circuit—namely, in the direction of the arrow on Fig. 3. As before stated, it is loosely mounted on the shaft B. Extending radially from the shaft B are projections e . I have shown two of such projections. In the exam-

ple of my improvement shown these projec-
 tions are formed by a pin passed transversely
 through a suitable aperture in the shaft and
 fitting snugly therein. It will be observed
 5 that the end of the switch-wheel adjacent to
 such projections is provided with cam surfaces
f. These cam-surfaces are formed one at the
 end of each of the spiral segments *c'* *c*² *c*³ *c*⁴.
 The inner ends of these cam-surfaces abut
 10 against the intermediate radial surfaces be-
 tween the segments *c'* *c*² *c*³ *c*⁴ in such manner
 as to form notches at the ends of the switch-
 wheel. It will be seen in Figs. 1 and 3 that
 the projections *e* are within these notches and
 15 abut against the said intermediate radial sur-
 faces. When in such position, if the shaft B
 be rotated in the direction of the arrow, Fig.
 3, the switch-wheel will be caused to rotate
 with the shaft to close and break the circuit.
 20 If, on the contrary, the shaft be rotated in a
 direction contrary to the arrow, the projec-
 tions *e* will be caused to ride up on the cam-
 surfaces *f*, as shown more clearly in Fig. 2,
 and will pass over them and drop into the next
 25 adjacent notches, and so on, so long as the shaft
 is rotated in that direction.

The projections *e* are permitted to ride up
 on the cam-surfaces by a longitudinal move-
 ment of the switch-wheel. This movement
 30 occurs against the resistance of a spring, *g*,
 here shown as a coil-spring arranged about
 the shaft B and abutting at one end against
 one of the upright portions *a'* of the frame A
 and at the other against a washer, *h*, surround-
 35 ing the shaft and adjacent to the switch-wheel.
 The tendency of the spring is to force the switch-
 wheel forward, so that the projections *e* on the
 shaft will be always in engagement with the
 notches when the switch-wheel is being rotated

in a proper direction to light and extinguish 40
 the lamps.

Of course, instead of providing the switch-
 wheel with the cam-surfaces and notches and
 the shaft with the projection or projections,
 the switch-wheel might be provided with a 45
 projection or projections on its end, and the
 cam-surfaces and notches might be upon a col-
 lar rigidly secured to the shaft. I have illus-
 trated such an arrangement in detail in Fig. 5.
 In any event the notches and the projection 50
 or projections constitute a clutch for causing
 the rotation of the wheel when the shaft is ro-
 tated in one direction.

It will be seen that by my improvement
 breakage or derangement of the parts, due to 55
 an improper turning of the shaft B, is effect-
 ively prevented, because the switch-wheel will
 not rotate with the shaft in such direction.

What I claim as my invention, and desire 60
 to secure by Letters Patent, is—

In a lamp-socket, the combination, with an
 electric circuit, of brushes in said circuit, a
 switch-wheel comprising spiral segmental sur-
 faces against which said brushes bear, a shaft
 upon which said wheel is loosely mounted, a 65
 clutch, one member of which is formed upon
 one end of said switch-wheel and the other
 member mounted upon said shaft, said clutch
 operating to rotate the wheel when the shaft is
 rotated in one direction, but releasing it when 70
 the shaft is rotated in the other direction, and
 a spring forcing said clutch members normally
 into engagement, substantially as described.

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Witnesses:

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