

(No Model.)

A. T. TREGURTHA.
SWITCH FOR INCANDESCENT LAMP SOCKETS.

No. 448,167.

Patented Mar. 10, 1891.

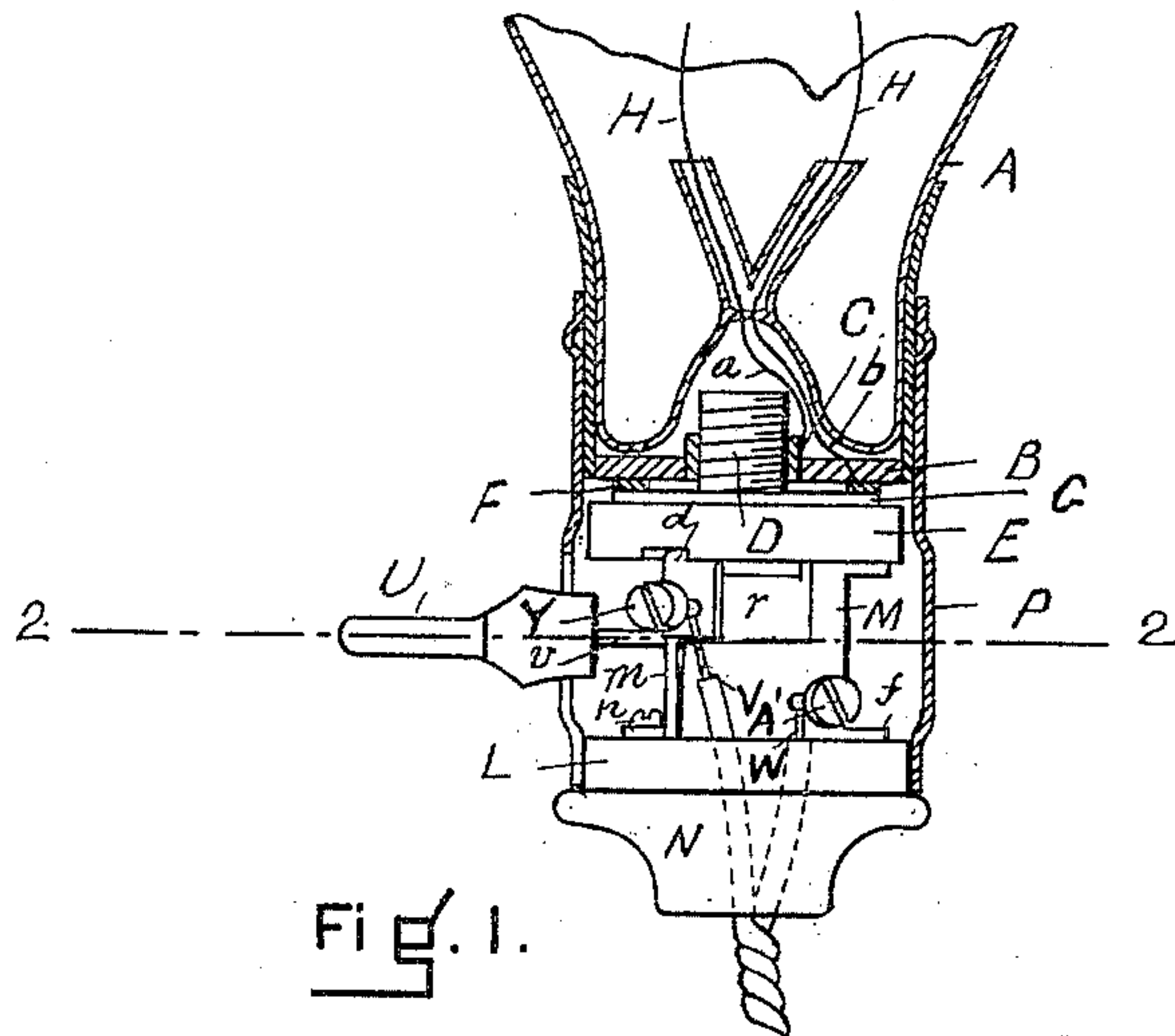


Fig. 1.

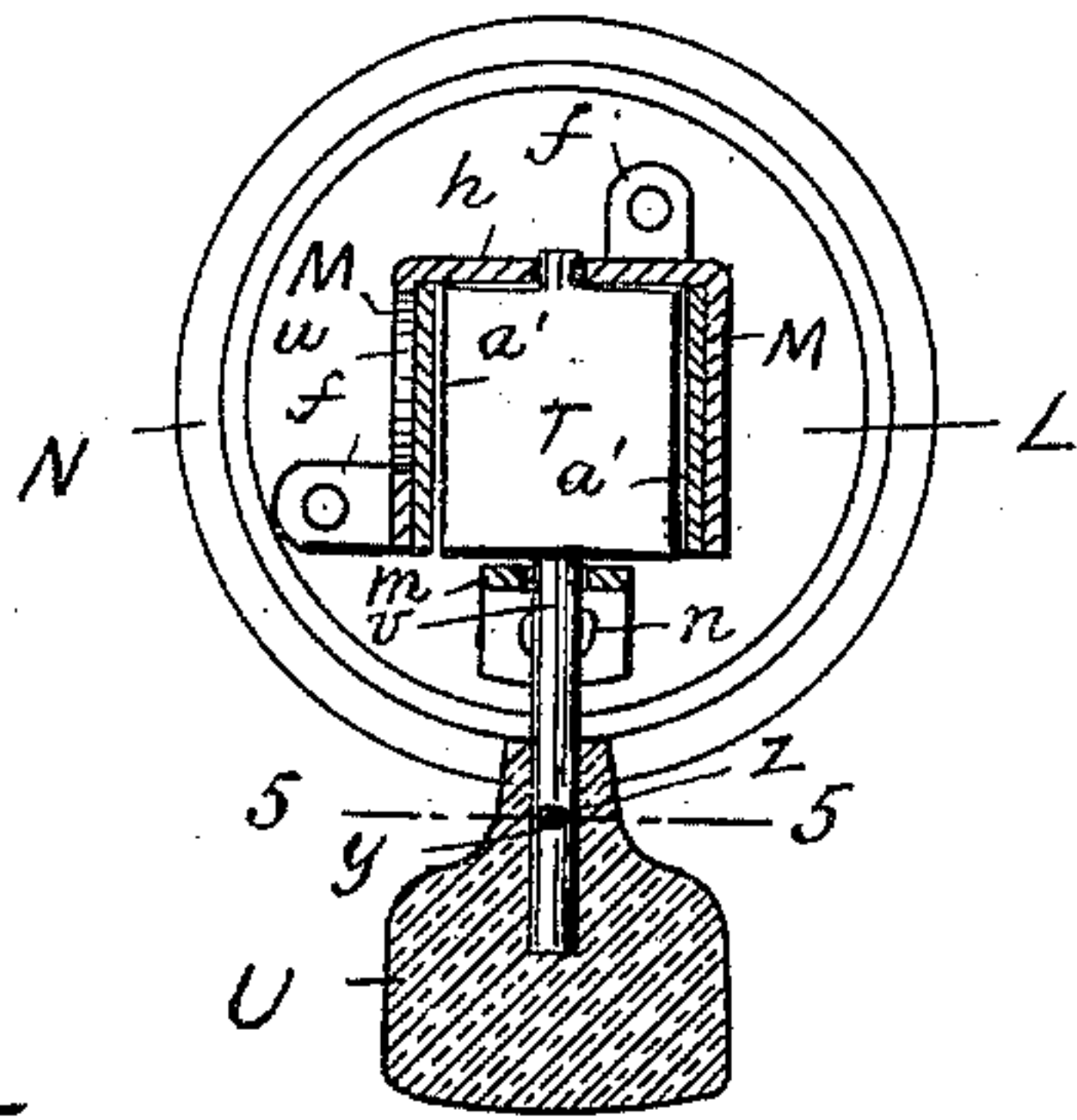


Fig. 2.

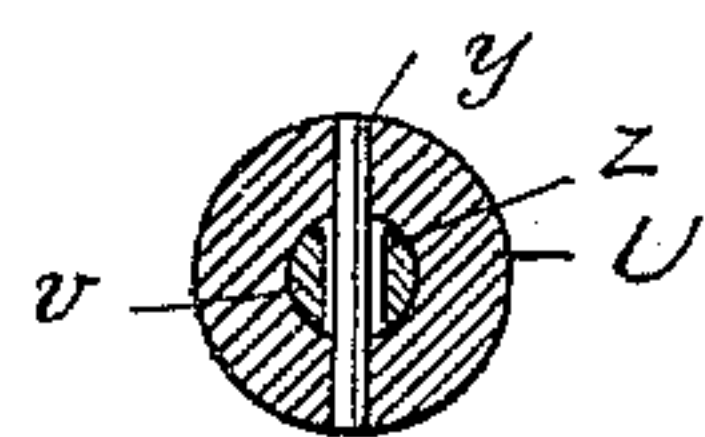


Fig. 5.

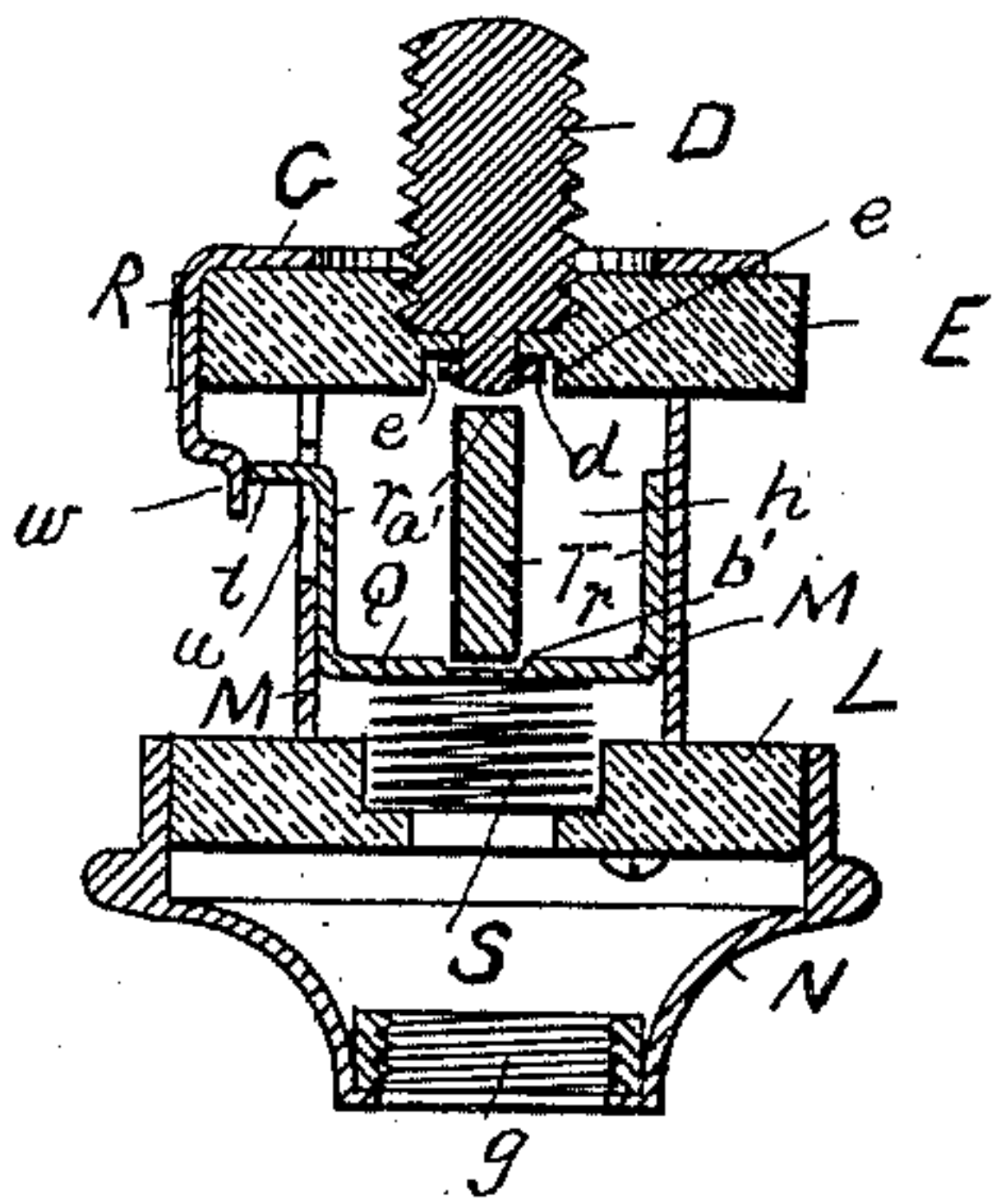


Fig. 3.

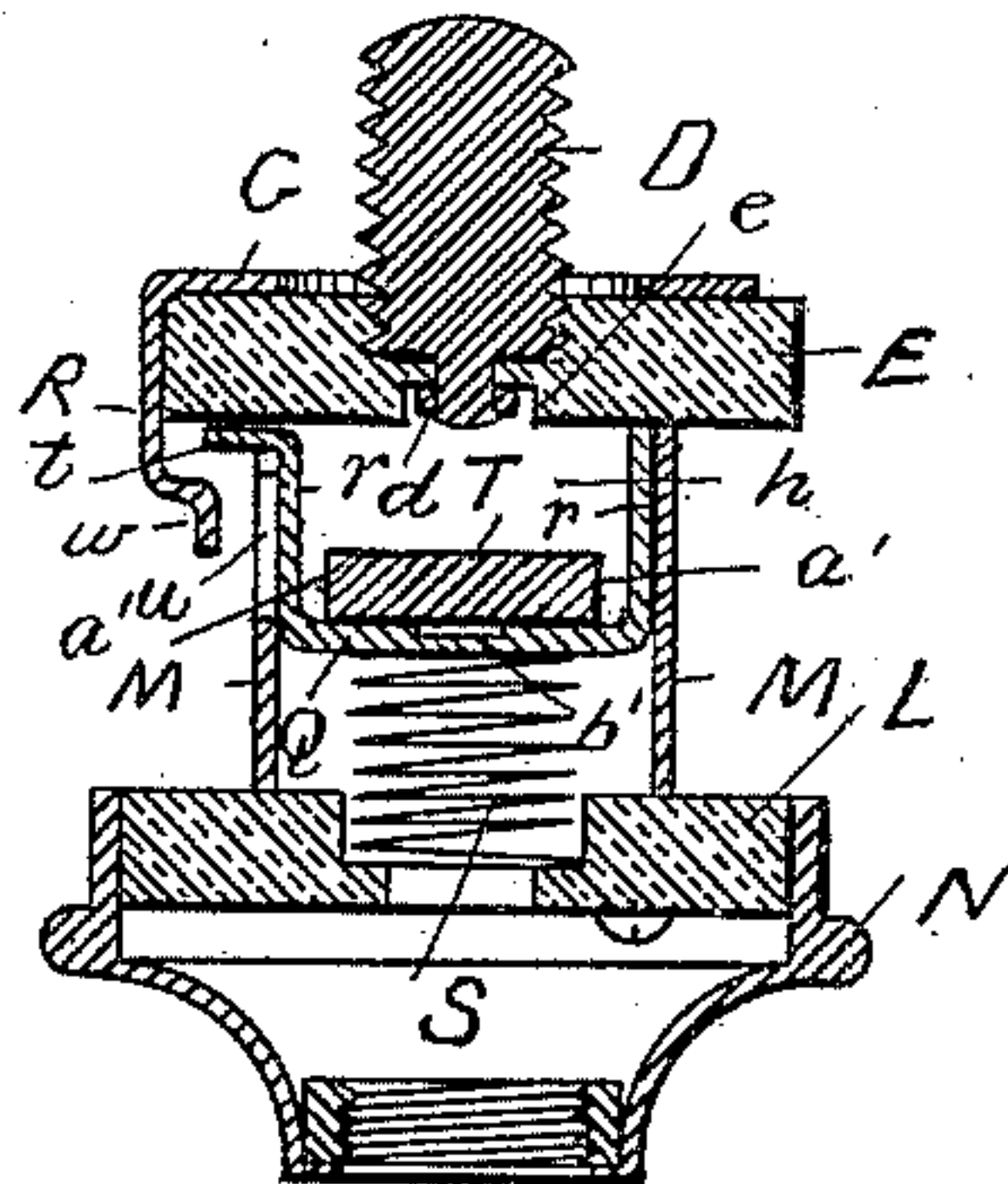


Fig. 4.

WITNESSES

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SWITCH FOR INCANDESCENT-LAMP SOCKETS.

SPECIFICATION forming part of Letters Patent No. 448,167, dated March 10, 1891.

Application filed September 20, 1890. Serial No. 365,608. (No model.)

To all whom it may concern:

Be it known that I, ALFRED T. TREGURTHA, of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Switches for Incandescent-Lamp Sockets, of which the following is a full, clear, and exact description.

This invention consists of a switch for a key-socket of an electric incandescent lamp constructed and arranged for operation, all substantially as hereinafter fully described, reference being had to the accompanying sheet of drawings, in which is illustrated the present invention.

Figure 1 is a view in detail vertical section of the glass globe and attachments with the operating parts in side view; and Fig. 2, a detail horizontal section on line 2 2, Fig. 1. Figs. 3 and 4 are vertical central sections of the working parts in two different positions. Fig. 5 is a detail cross-section on line 5 5, Fig. 2, Figs. 2, 3, 4, and 5 being enlarged.

In the drawings, A represents the end of a glass globe of an incandescent electric lamp, secured to the head or plate B of insulating material, which plate has a central screw nut or socket C of metal to receive the screw D, which is secured in a disk or plate E of insulating material, the head B having on its under side a flat ring F of metal, which bears, when the globe is screwed down in place, closely upon a flat ring G of metal secured on the upper side of the insulating-plate E to make electrical connection between the two rings.

One end of the carbon H is connected by an insulated wire *a* to the metal screw-socket C, and the other end by an insulated wire *b* to the metallic ring F of the head B, all substantially as usual in electric incandescent lamps, and needing no more particular description herein.

The screw D screws through the plate E, and is riveted by its inner end to a metal strip *d*, disposed in a radial or diametrical groove *e* on the under side of the plate E, which secures the screw firmly in place, and the groove prevents the strip and the screw from turning in the plate.

The plate or disk E of insulating material is connected to another plate or disk L of in-

sulating material below it by a metal casing M, having three sides, and substantially square in cross-section and having ear-pieces *f* on its ends, by which it is secured to and between the two insulating-plates E and L by rivets or screws or in any suitable manner.

The plate L sets in a cap N, and is secured thereto by screws, the cap having a central opening *g*, and to this cap is secured by screws or in any suitable manner an outer shell P, (see Fig. 1,) which incloses all the parts and extends up above the lower end of the globe, as shown in Fig. 1, as usual in incandescent lamps.

Within the casing M is a horizontal plate Q of metal fitting in between the side *h* and an upright arm *m*, secured by a screw *n* to the upper side of the plate L, its ends *r* being bent upward at right angles to fit closely the other sides of the casing, this plate being arranged to freely slide up and down in the casing and to be guided in such movements by its arms *r*, and yet fitting the casing sufficiently close to make electric connection between the two. One end of the plate Q is narrowed to make a tongue-piece *t*, and it is bent outwardly at right angles projecting sidewise through an opening *u* in one side of the casing, as shown in Figs. 3 and 4.

The metal ring G on the plate or head E has an arm or tongue R at one side, which is bent down at right angles over the edge lying in a groove in the edge of the plate, and a short distance below the plate it is bent inward and then downward, as at *w*, as shown in Figs. 3 and 4.

Within a central socket in the upper side of the plate L is a spiral spring S, which bears up against the sliding plate Q, and by its tension holds it up in its normal position, as shown in Fig. 4, against a flat bar T, which is the key pivoted horizontally in the side wall *h* of the casing and the arm *m*, its pivot *v* at the arm extending a sufficient distance outside or beyond the arm to receive a thumb-piece U of insulating material for turning the arm or key. The thumb is secured to the extension or rod *v* by a cross-pin *y*, passing through it, and a hole or aperture *z* in the rod, which hole is enlarged on its outer ends, as shown in Fig. 5, more particularly to allow

for a side play of the cross-pin therein and a play of the thumb-piece on the rod when operating the same, for the purpose herein-after described.

5 With the parts, as shown in Figs. 2 and 4, turning the bar or key T in either direction to the right or left a quarter of a turn, one of its edges a' , according as to which way it is turned, will press down upon the sliding
10 plate Q against its spring, and stopping or resting in a cross-groove b' in the upper side of the sliding plate Q, as shown in Fig. 3, and when in such position the contact point or end t will bear and press against the side w
15 of the downwardly-projecting arm R of the ring-plate G, as shown in Fig. 3, such arm being properly located therefor. These two points w and t are the contact points or electrodes for making and breaking the electric
20 circuit when lighting or putting out the lamp, and they are connected by electric wires V and W with the external circuit, as follows:

The end of the strip d , securing the screw D to the plate E, is bent down at right angles,
25 to which one wire V is secured by the screw Y, the other wire W being secured by a screw A' to the casing M, as shown in Fig. 1. Each of these wires passes through a separate hole in the insulating-plate L, down through the
30 central passage g in the cap N, and there they are twisted, as usual, the circuit being made through wire W, casing M, sliding plate Q, to its point t , one electrode, and through wire V, strip d , screw D, wire a , carbon H, ring F,
35 ring G, to point w , the other electrode.

When the thumb-piece is turned into the position shown in Figs. 1 and 2, the sliding plate Q is pressed up by its spring against the side of the bar or key E, its contact-point t
40 then being away from and not touching the other contact-point w of the ring-plate F, as shown in Fig. 4, breaking or opening the electric circuit, the light then not burning; but to light the lamp turn the thumb-piece a quar-
45 ter round in either direction, which swings the bar or key with it, presses down the sliding plate, and brings its point t into contact with the ring-plate point w , as shown in Fig. 3, making or closing the electric circuit and
50 lighting the lamp.

By the construction described the thumb-piece can be turned either way—that is, to the right or the left—which in either case turns the key to move the sliding plate down, mak-
55 ing the electric circuit, and by the enlargement of the ends of the opening in the thumb-piece rod the thumb-piece has a slight play in either direction to insure in turning it to put out the light, the breaking of the circuit,
60 and that quite quickly, as will be now explained. When the circuit is closed and the light is burning, in turning the thumb-piece to put out the light it brings its cross-pin y diagonally across the opening z in the rod, bearing on the corners diagonally opposite to
65 each other. Then the rod commences to turn with its key and moves the sliding plate down

and its contact-point t from the other contact-point w , the space left on the other sides of the cross-pin in the rod opening, allowing the
70 bar to swing independently and free of its thumb-piece for the spring to operate on the sliding plate and move it up a distance sufficient for its contact-point to then escape from and break contact with the other con-
75 tact-point before the thumb-piece is farther turned, so that the circuit will be broken, and that quite suddenly, preventing arcing or burning of the contact-points, as is often the case when the circuit is broken too slowly or
80 depends upon the full movement of the thumb-piece, an advantage which is obvious.

The casing M can be made in any suitable manner other than as described to support and guide the sliding plate. The groove b'
85 in the sliding plate is deep enough to hold the key therein to keep it from turning accidentally, but not so much but that it can easily be moved out of it when turned by the thumb-piece to put out the light.
90

By taking out the screw n to the upright arm m and removing the arm, all the parts can then be easily taken out, as desired.

Having thus described my invention, what I claim is—
95

1. The combination, with a plate having a contact point or electrode, and a casing secured to and between two insulating plates or heads, in which casing said plate is arranged to move up and down, the sides of the
100 casing forming a guide or bearings for the plate in its movements therein, and a spring arranged to bear upon said plate, of a bar or key pivoted in a suitable support and adapted to engage with said plate, for the purpose
105 specified.

2. The combination, with a plate having a contact point or electrode and a transverse groove, a casing secured to and between two insulating plates or heads, in which casing
110 said plate is arranged to move up and down, the sides of the casing forming a guide or bearings for the plate in its movements therein, and a spring arranged to bear upon said plate, of a bar or key pivoted in a suitable
115 support and adapted to engage with said plate, for the purpose specified.

3. The combination, with a plate having a contact point or electrode, and a casing secured to and between two insulating plates
120 or heads, in which casing said plate is arranged to move up and down, the sides of the casing forming a guide or bearings for the plate in its movements therein, and a spring arranged to bear upon said plate, of a bar or
125 key pivoted in a suitable support and adapted to engage with said plate, having a thumb-piece attached to one of its pivots, a cross-pin in said thumb-piece, and an opening in said pivot having its ends enlarged through which
130 said cross-pin extends, for the purpose specified.

4. The combination, with a plate having a contact point or electrode, and a casing se-

cured to and between two insulating plates
or heads, one of which is provided with a dia-
metrical groove in one of its sides, and a
screw extending through said plate at said
5 groove, and a strip disposed in said groove
and secured to said screw, in which casing
said plate is arranged to move up and down,
the sides of the casing forming a guide or
bearings for the plate in its movements there-
10 in, and a spring arranged to bear upon said

plate, of a bar or key pivoted in a suitable
support and adapted to engage with said plate,
for the purpose specified.

In testimony whereof I have hereunto set
my hand in the presence of two subscribing 15
witnesses.

ALFRED T. TREGURTHA.

Witnesses:

EDWIN W. BROWN,
CARRIE E. NICHOLS.