(No Model.) 2 Sheets—Sheet 1.

# G. R. LEAN.

## INCANDESCENT LAMP SOCKET.

No. 444,567. Patented Jan. 13, 1891.

FIG. 1.

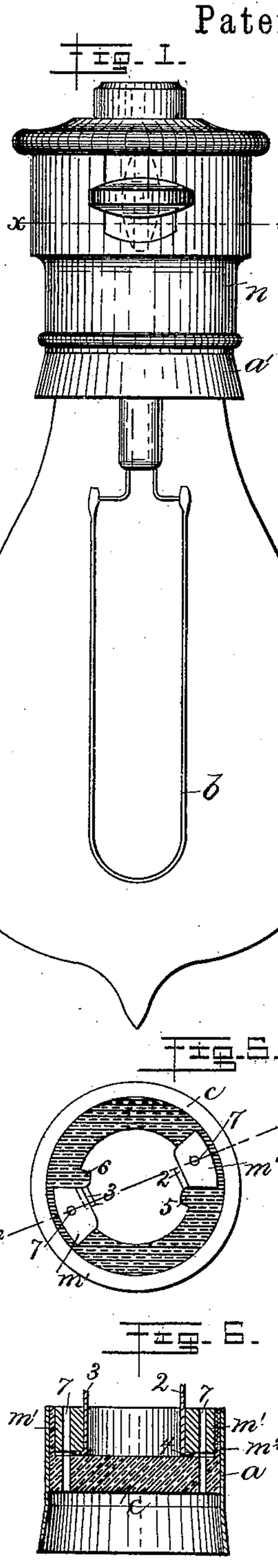

FIG. 2.

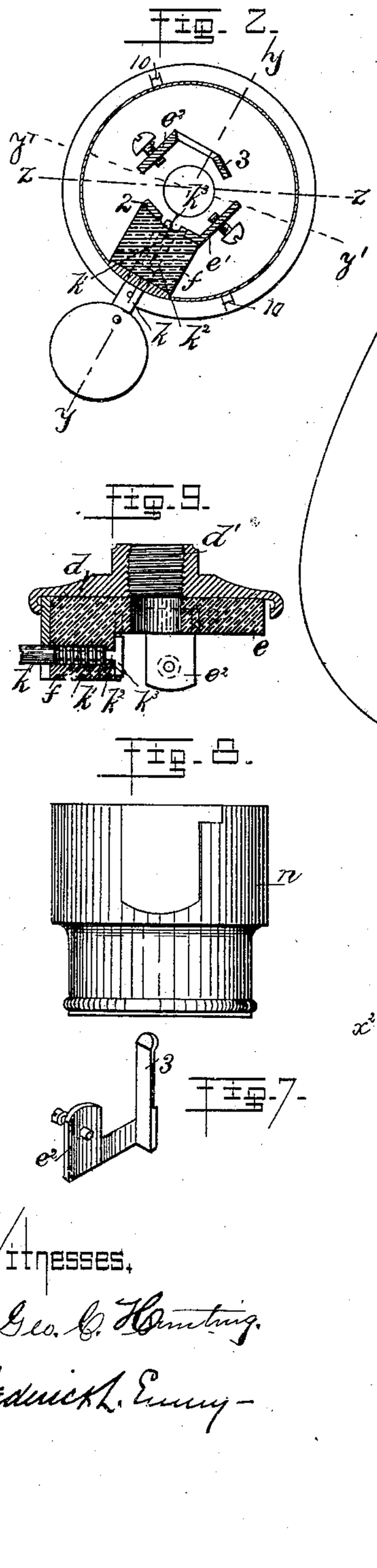

FIG. 3.

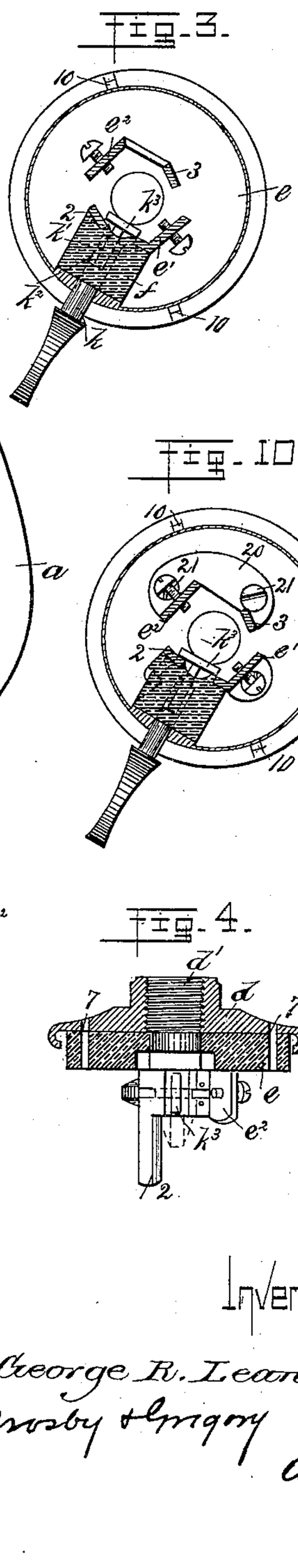

FIG. 9.



FIG. 10.



FIG. 8.



FIG. 7.



FIG. 5.



FIG. 4.



FIG. 6.



Witnesses.

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(No Model.) 2 Sheets—Sheet 2.

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## INCANDESCENT LAMP SOCKET.

No. 444,567. Patented Jan. 13, 1891.

Fig. 11.

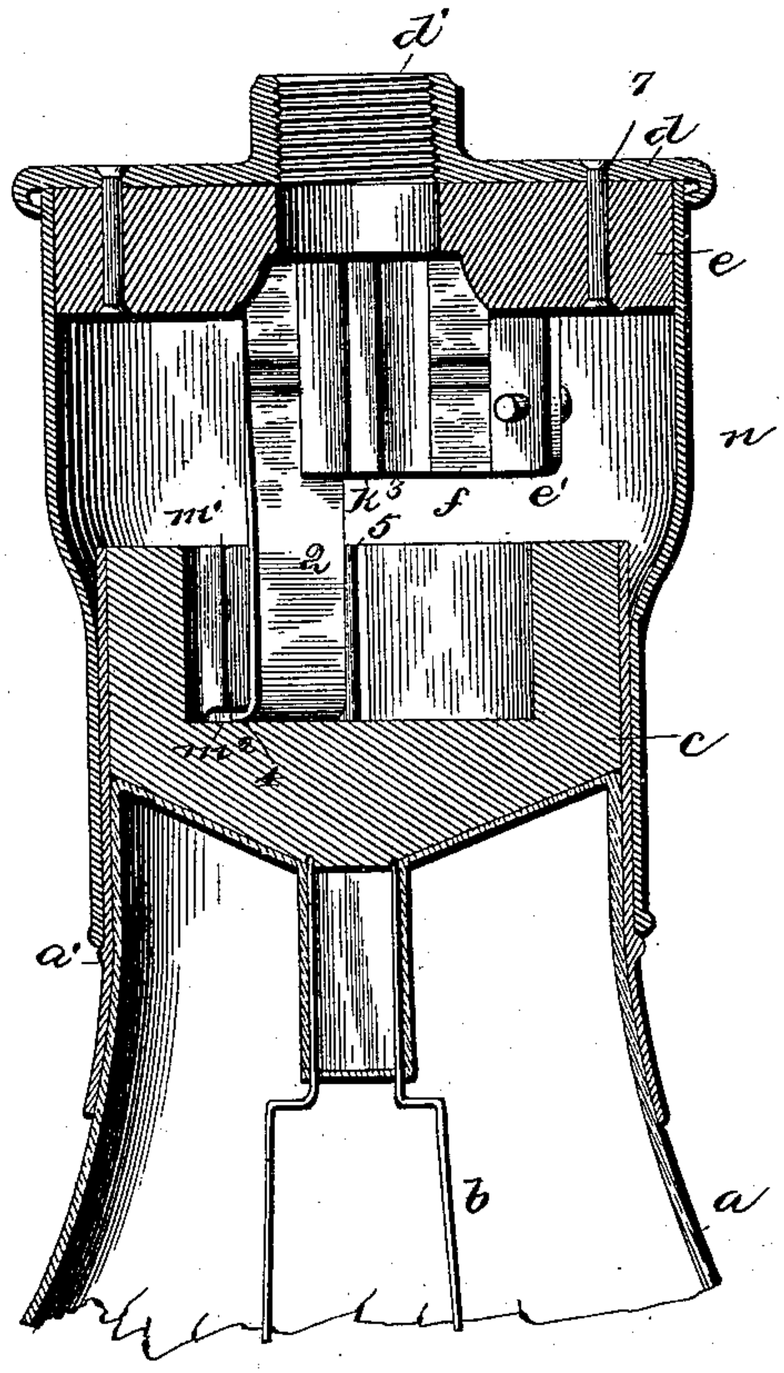
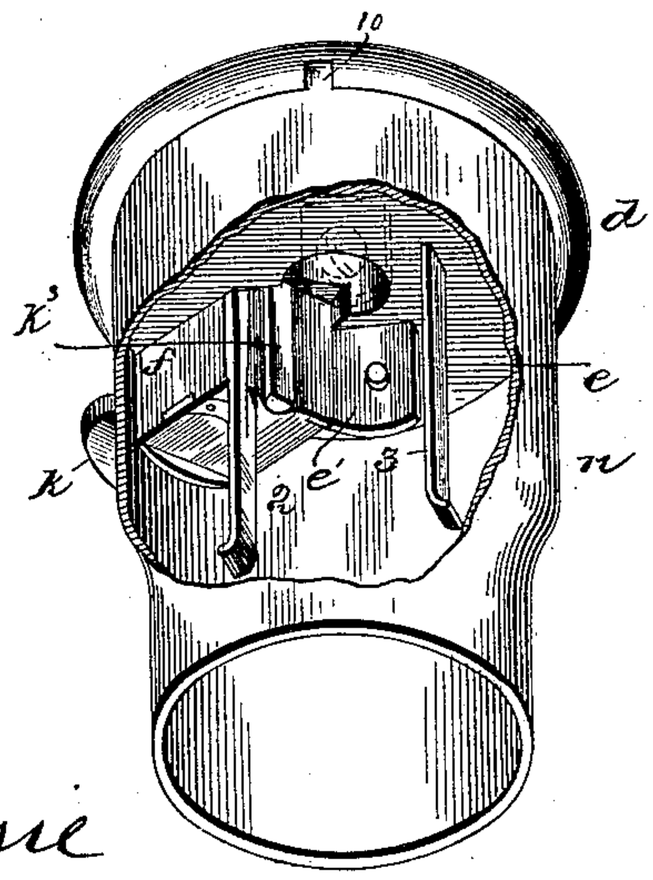



Fig. 12.




Witnesses
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# UNITED STATES PATENT OFFICE.

GEORGE R. LEAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE BERNSTEIN ELECTRIC COMPANY, OF PORTLAND, MAINE.

## INCANDESCENT-LAMP SOCKET.

SPECIFICATION forming part of Letters Patent No. 444,567, dated January 13, 1891.

Application filed March 27, 1890. Serial No. 345,538. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE R. LEAN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Incandescent Lamps, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve the construction of incandescent-lamp holders, cheapness and efficiency being the special points of merit.

My invention consists in details of construction to be hereinafter more fully set forth in the claims at the end of this specification.

Figure 1 shows in side elevation a lamp and holder embodying this invention; Fig. 2, a cross-sectional view of the lamp-holder shown in Fig. 1, taken on the dotted line *x x;* Fig. 3, a similar view of Fig. 2, the parts being shown in position to include the lamp in circuit; Fig. 4, a vertical section of the parts shown in Fig. 2, taken on the dotted line *z z;* Fig. 5, an under side view of one of the parts of the holder; Fig. 6, a cross-sectional view of the parts shown in Fig. 5, taken on the dotted line $x^2$ $x^2$; Fig. 7, a detail of one of the contacts and binding-posts to be referred to; Fig. 8, a detail of the outer shell or case; Fig. 9, a cross-section of parts shown in Fig. 2, taken on the dotted line *y y;* Fig. 10, a modification to be referred to. Fig. 11 is a vertical section taken on the dotted line *y' y'*. Fig. 12 is a perspective view of the parts in position, the casing being broken away.

The glass bulb *a* and filament *b* are of any usual construction. The glass bulb *a* is fitted into a collar *a'*, preferably of metal. (See Fig. 6.) In this collar *a'* a block of insulating material *c* is placed, which is hollowed out or recessed, as shown in Fig. 6. In the side walls of the said recess two conducting plates or blocks *m'* are placed, one at each side thereof, said plates or blocks projecting into the recess and presenting below them each a narrow groove, as $m^2$. The fixed holder, to be described, has two legs 2 3 at opposite sides, provided at their outer ends with a projection 4. When it is desired to secure the bulb to the fixed holder having the legs 2 3, the said legs enter the recess in the block *c*, when the latter is held in certain positions, and by thereafter turning the block the projections 4 of the legs 2 3 will enter the grooves $m^2$ beneath the conducting-blocks *m'*, thereby holding the bulb firmly in place. The legs of the filament *b* are electrically connected with the conducting blocks or plates *m' m'*. Limiting-stops 5 6 are arranged in the recess in the block *c* to limit the movement of the legs 2 3 when the bulb has been turned to a certain position, as herein shown, they being located one at one side of one of the conducting-blocks and the other at the opposite side of the other conducting-block, so that when turned in one direction the legs 2 3 will make contact with the conducting-blocks *m' m'* and the bulb will be locked in place; but when turned in the opposite direction the legs 2 3 will strike the said stop before said legs and plate make contact. This construction is substantially a bayonet-joint connection. By these limiting-stops, located as shown and described, it will be known whether or not the bulb has been firmly secured in place.

The fixed holder consists of a supporting-plate *d*, (see Figs. 4, 11, and 12,) having a hole *d'* through it for the circuit-wires and for attachment to an object, if desired.

A plate or block of insulating material *e* is secured to the supporting-plate *d* by means of rivets passing through the holes 7 or by other suitable fastenings. The leg 2 is embedded in or secured to this block *e*. A binding-post or equivalent *e'* is also embedded in or secured to said material *e*, but located adjacent to the leg 2, one of the circuit-wires being secured to said binding-post.

The leg 3 is formed as a part of or attached to the binding-post $e^2$, and both parts are embedded in or attached to the plate *e* opposite the leg 2 and post *e'*, and one of the circuit-wires is connected to said post $e^2$. The plate *e* is formed with a hole through it for the circuit-wires passing through the hole *d'* in the supporting-plate *d*. A projection *f* is formed on the inside of the plate *e*, in which a key *k* has its bearings, said key having for a portion of its length a reduced shank *k'*, which is en-

circled by a spring $k^2$, one end of which bears against the interior of the projection $f$ and the other end against the enlarged portion of the shank of the key. A cross-bar $k^3$ is secured to the inner end of the shank of the key $k$ at right angles with relation thereto, said cross-bar, when the key is in one position, resting against the interior of the projection $f$, as shown in Figs. 2, 11, and 12, and when said key is in its other position connecting the leg 2 with the post $e'$, as in Figs. 3 and 10. When this connection is established, the filament $b$ is included in circuit, and when this connection is broken the filament is disconnected.

To inclose the parts of the fixed holder a shell or cylindrical case $n$ is provided, it being of sufficient diameter to inclose the plate $e$ and to enter a small annular space between said plate $e$ and the overturned lip or edge of the plate $d$, as best shown in Fig. 4.

The lip of the plate $d$ has at each side a small opening 10, (see Figs. 2 and 3,) and the cylindrical shell or case $n$ has at each side slight projections, which may pass through the openings 10 and follow along the inner side of the said lip, forming substantially a bayonet-joint, the said projections thereby holding the shell from falling off.

The shell $n$ (see Fig. 8) is formed with an opening in it of substantially the same size as the projection $f$, and the latter extends beyond the periphery of the plate $e$, as shown in Figs. 2 and 3, so as to occupy said opening in the shell or case and to prevent lateral movement thereof.

Referring to Fig. 10, the leg 3 and binding-post $e^2$ are connected by a foot 20, which is attached to the plate $e$ by screws 21; also, the leg 2 is screwed to the projection $f$, and the binding-post $e'$ has a foot and is attached to the plate $e$ by a screw.

I claim—

1. In an incandescent lamp, the bulb and block $c$, having a recess, and conducting-plates $m'$ $m'$, combined with a fixed holder having legs 2 3, adapted to engage the block $c$ by means of a bayonet-joint, substantially as described.

2. In an incandescent lamp, a bulb and block $c$, having a recess, and conducting-plates $m'$ $m'$, with grooves beneath them, combined with a fixed holder having legs 2 3 with projections 4, substantially as described.

3. In an incandescent lamp, the bulb and block $c$, having a recess, conducting-plates $m'$ $m'$, and limiting-stops 5 6, located as shown, combined with a fixed holder having legs 2 3, substantially as described.

4. In an incandescent lamp, the fixed holder for the bulb, consisting of the supporting-plate $d$, insulating-plate $e$, secured to it, legs 2 3, binding-posts $e'$ $e^2$, secured to said plate, a key having a cross-bar to make and break connections between one of the legs and one of the binding-posts, and a projection formed on the inside of plate $e$, in which the key has its bearings, the cross-bar resting against said projection when the connection is broken, substantially as described.

5. In an incandescent lamp, the fixed holder consisting of the support $d$, having the annular inturned lip, openings therein, a plate $e$, combined with the shell $n$, adapted to enter between the plate and lip, and projections on the shell, whereby it is connected with the support $d$ by a bayonet-joint, substantially as described.

6. In an incandescent lamp, the fixed holder consisting of the support $d$ and shell $n$, adapted to be connected by a bayonet-joint, said shell having a side opening, and a plate $e$, having a projection thereon which enters said side opening to thereby prevent lateral movement of the shell, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE R. LEAN.

Witnesses:

BERNICE J. NOYES,

EMMA J. BENNETT.