

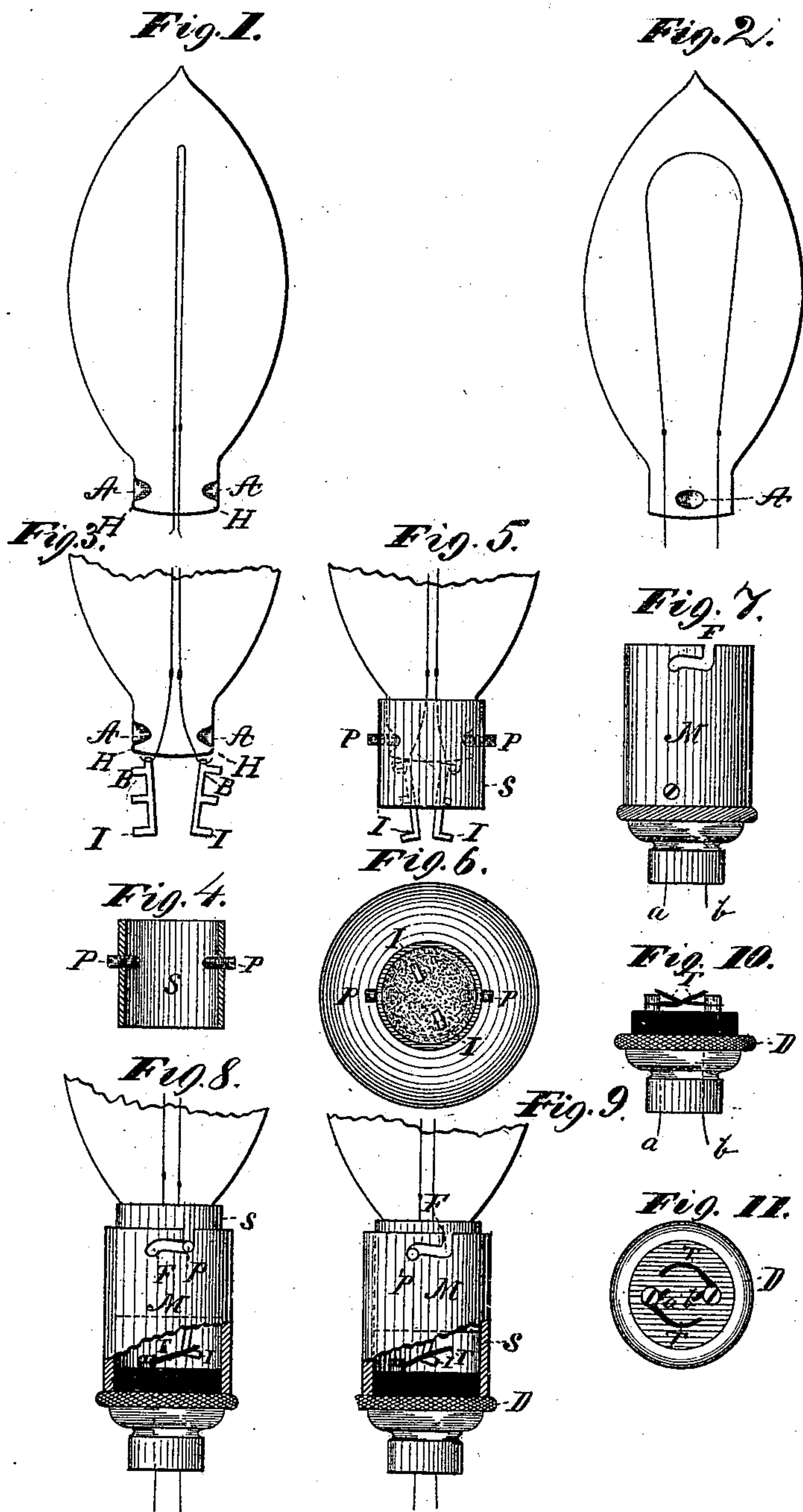
(No Model)

E. THOMSON.

SOCKET FOR INCANDESCENT LAMPS.

No. 345,335.

Patented July 13, 1886.



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SOCKET FOR INCANDESCENT LAMPS.

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To all whom it may concern:

Be it known that I, ELIHU THOMSON, a citizen of the United States, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Socket for Incandescent Lamps, of which the following is a specification.

My present invention relates to means for securely fastening an incandescent electric lamp in its socket or holder, and for also completing the electric connections to the lamp and severing them when the lamp is inserted into or withdrawn from its holder.

My invention consists, further, in a means for strengthening the lamp at its neck, where it enters the holder, and for also securely fastening the lamp-terminals, so that the lamp or its terminals cannot be injured in the operation of inserting or withdrawing it from its holder or from attempts to turn it in the holder.

My invention consists, first, in the combination, with the lamp-neck, of a sleeve of metal or other hard tough material, from the interior surface of which pins or studs project inwardly into recesses formed in any desired manner in the neck of the lamp, and a cementing material of any desired kind—such, for instance, as plaster-of-paris—applied within the sleeve around the neck of the lamp at the points where the pins or studs engage.

My invention consists, further, in providing the lamp-terminals with lateral anchoring projections, which are set firmly in the cementing material within the sleeve, and which prevent said terminals from being twisted or displaced.

My invention consists, also, in certain novel devices and combinations of parts that will be more particularly specified in the claims.

Referring to the accompanying drawings, Figures 1 and 2 are elevations of the lamp when provided with a sleeve, and are taken in positions at right angles to each other. Fig. 3 shows the lower part of the lamp, with terminals of a form embodying my invention. Fig. 4 shows in vertical section the sleeve before its application to the neck of the lamp. Fig. 5 shows the sleeve applied to the neck of the lamp, with the lamp-terminals in place. Fig. 6 is a bottom view of the lamp with the sleeve applied to its neck. Fig. 7 is an eleva-

tion of the socket for the lamp. Fig. 8 is an elevation of the lamp-socket, partially broken away, and shows the lamp partially inserted. Fig. 9 is a view of the same parts, with the lamp completely inserted. Fig. 10 shows the base of the lamp, with the conducting-wires and the connecting terminals. Fig. 11 is a plan of the same.

Referring to Figs. 1, 2, 3, and 4, A A indicate lateral depressions or cavities in the neck or base of the glass globe or envelope for an ordinary incandescent electric lamp. These depressions may be formed during the operation of blowing the bulb or globe, or may be afterward made in any desired way. By means of these depressions lateral lugs or projections H are furnished, above which pins P P, Fig. 5, may rest, for the purpose of preventing the disconnection of the lamp from a sleeve, S, of metal or of any other desired material.

In the form of my invention herein illustrated the depressions are shown as of a conical form in the side of the lamp-neck near its bottom, and in this form not only prevent disconnection of the lamp from the sleeve, but also prevent the one from turning on the other. After the lamp has been formed the sleeve S is applied and the pins P P are inserted, so as to project from the interior of the sleeve into the depressions and to leave lateral projections outside of the sleeve for use as the pins of a bayonet-joint catch, as will be presently described.

In order to firmly unite the parts together, the space between the sleeve S and the neck of the lamp is filled with plaster-of-paris or other cementing material, in which set the electric terminals B B of the lamp, as indicated in Fig. 5. The terminals are preferably formed of separate pieces of metal, soldered or otherwise secured to the wires projecting from the base of the lamp. The pieces B B are formed with lateral projections, one or more, as indicated, which set in the cementing material and serve as anchoring projections, to prevent twisting of the terminals in the operation of inserting the lamp into its socket for the purpose of forming the electric connection between the lamp-terminals and the conductor, terminals of the socket.

The lamp-terminals are formed at their lower

end with the hooks or projections I I, which, when the lamp has been inserted into the socket, can be brought into engagement with the under side of the conducting-springs T T, attached to the base of the lamp-socket, and connected, respectively, with the conductors *a b*, leading to the supply-wire. The springs T T are secured to an insulating-base, D, and project in a curved direction, as shown. The screws which attach the springs serve to firmly clamp the ends of the conductors *a b*.

The socket proper consists of a sleeve of metal, M, secured to the base B, and provided with slots, into which the pins or projections P P may enter, after the manner of the pins of a bayonet-joint catch. One of these slots is shown at F, Fig. 7, and is made as indicated, so as to extend downward along the length of the tube or socket M a short distance, then laterally and in an inclined direction upward, and then slightly downward at its termination.

In the act of inserting the lamp into its socket the pins P enter the slot F and pass to the bottom of its vertical portion, as shown in Fig. 8. In this position the lamp-terminals I are in proximity to the extremity of the conductor-springs T, forming the terminals of the socket, and projecting upward just sufficiently to permit the hook-terminals I to slide under them on the rotation of the lamp in its socket. The operation is completed by giving the lamp a partial rotation so that the pins P will traverse the full length of the lateral slot of the bayonet-catch, and the contact terminals or hooks I will slide some little distance under the contact-springs T, which latter, by means of this operation, are sprung or drawn slightly upward. The tension thus given to the springs causes them to tend to draw the lamp down in its socket and to hold the pins P at the bottom of the turned-down portion of the slot F for the bayonet-joint catch, so that the exertion of a positive force is necessary to unlock the catch.

The terminals I, which catch upon the terminals in the base of the socket, might be made in any other form, instead of the special form of hook shown, or might consist of an eye formed at the end of the piece B.

The shape of the pieces T and I may be variously modified without departing from the invention, since it is only required that the lamp-terminal I shall, on the insertion of the lamp into its socket and the partial rotation of the same, engage with the pieces T in such manner that the pieces T shall exert a pressure upon the terminal tending to pull the lamp into the socket.

By this construction the lamp can be inserted into and removed from its socket by unskilled persons with perfect ease, in virtue of the fact that in the insertion of the lamp into the socket the natural forward pressure while the lamp is being rotated is all that is demanded to cause the pins P to drop into the slot F and proceed to the end of the slot.

On the removal of the lamp a backward or

reversed rotation and the natural slight pull accompanying the same are all that is necessary to disengage the lamp, and there is no necessity for the exertion of pressure against any counteracting springs while inserting the lamp into the socket. The contrary is the case where, as in some previous constructions, the insertion of the lamp into the socket takes place in opposition to a spring tending to force the lamp out of the socket. The consequence is that where the sockets or fixtures are delicately hung it is not, in the practice of my present invention, necessary that the socket itself should be taken hold of or handled during the insertion and removal of lamps. Where, however, a spring opposes the action of inserting the lamp into its socket, it is often necessary that the socket itself be held or steadied by one hand of the attendant while the other hand is employed in inserting the lamp. Where the fixtures are lightly supported and at inconvenient distances, such necessity may result in damage when unskillful attendants perform the duty.

By the construction that I have described there is no liability of breakage from the jarring of the lamp in its holder, since the retaining action of the springs T T upon the terminals is sufficient to hold the bayonet-joint catch firmly locked. At the same time it is impossible to turn the sleeve S upon the lamp-neck, and so twist the terminals of the lamp or the wires passing through the neck thereof. Nor can the sleeve S be taken off or loosened therefrom by any jar given to the parts.

What I claim as my invention is—

1. An incandescent lamp having depressions formed in its neck, in combination with a sleeve provided with pins or extensions entering said depressions, as and for the purpose described.

2. In an incandescent lamp, the combination of a sleeve, S, applied to the neck thereof, and provided with pins or projections entering depressions in the neck, and a mass of plaster-of-paris or other cementing material applied in the space between the neck and sleeve and around the pins or projections.

3. In an electric lamp, the combination, with the glass envelope, of lateral projections H on the neck thereof, and a sleeve, S, having pins or projections applied above the projections H, as and for the purpose described.

4. In an incandescent electric lamp, a lamp-terminal having one or more lateral anchoring projections, in combination with a cementing material, whereby the twisting or turning of the terminal may be prevented, as and for the purpose described.

5. In an incandescent lamp, a sleeve, S, having the locking or fastening pins projecting through the sleeve inward to assist in holding the sleeve in place, and projecting laterally outward to form the projections or pins of the bayonet-joint catch, whereby the lamp is held in its socket.

6. The combination, with the projecting wires of an incandescent lamp, of the terminal pieces B B, secured thereto and formed with lateral anchoring projections, as and for the purpose described.

7. In a lamp socket or holder for incandescent lamps, spring-pieces engaging with hook-pieces upon the lamp-neck, or carried thereby, forming the terminals of the lamp filament or conductor and exerting a spring-pressure in a direction to hold the lamp in its socket, in combination with the socket, having a slot, F, and pin P on the sleeve S, substantially as described.

8. The combination, with an incandescent lamp, of a sleeve, S, applied to the neck thereof, and conducting-pieces B, connected with the lamp-terminals and provided with lateral anchoring projections held in a mass of cementing material within the sleeve, as and for the purpose described.

9. The combination, with an incandescent lamp, of conducting terminals having hooks or other connecting devices for making connection with the terminals of the lamp-socket, said conducting terminals being provided with anchoring lateral projections set in a mass of cementing material.

10. The combination, with an incandescent lamp and its socket containing the connecting devices for making electrical connection with the lamp, of a bayonet-joint catch having slots which run laterally in a slightly-inclined direction and at their ends have a sharp turn in a reverse direction to the direction of the incline, and adapted to prevent rotation of the lamp in its socket.

11. The combination, with an incandescent lamp and its socket, of a bayonet-joint catch, the lateral portion of whose slot is inclined,

and which terminates in a sharp turn carried in a reverse direction to the direction of the incline, and connecting devices for making connection between the lamp-terminals and the terminals in the socket, said connecting devices being adapted to exert a spring-pressure in a direction to hold the bayonet-joint catch against rotation, as and for the purpose described.

12. An incandescent lamp having lateral projections from its neck, in combination with a socket having slots F, which run first toward the base of said socket, then laterally around the socket, but in an inclined direction away from the base, and, lastly, by a sharp turn slightly toward the base of the socket, and hook-pieces II, passing under spring-surfaces, or spring-pieces T T, secured to the base of said lamp-socket, as described.

13. An incandescent-lamp holder having the following elements of devices: pins or projections entering into slots bent in a direction as described, and hook-terminals passing under spring-surfaces, which are constructed to exert a pressure upon said hook-terminals in a direction to hold the lamp firmly in the socket and convey current to the lamp-terminals, as described.

14. An incandescent lamp having a glass neck, in combination with a sleeve upon the neck secured thereto by locking pins or projections combined with a mass of cementing material.

Signed at Lynn, in the county of Essex and State of Massachusetts, this 27th day of October, A. D. 1885.

ELIHU THOMSON.

Witnesses:

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GEORGE J. CARR.