No. 676,952.

Patented June 25, 1901.

C. A. HUSSEY.

ELECTRIC LAMP.

(Application filed Oct. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

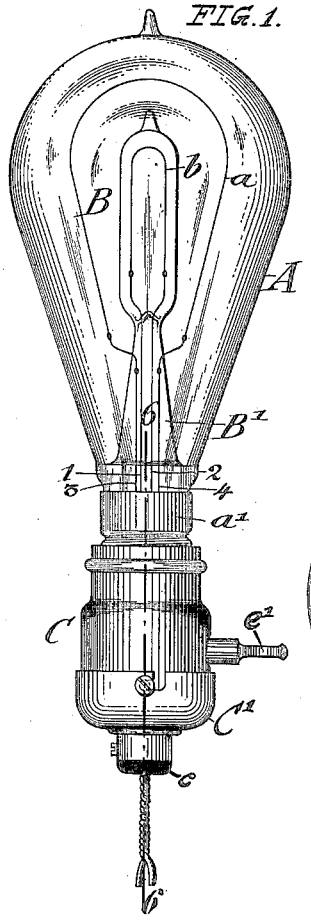

FIG. 3.

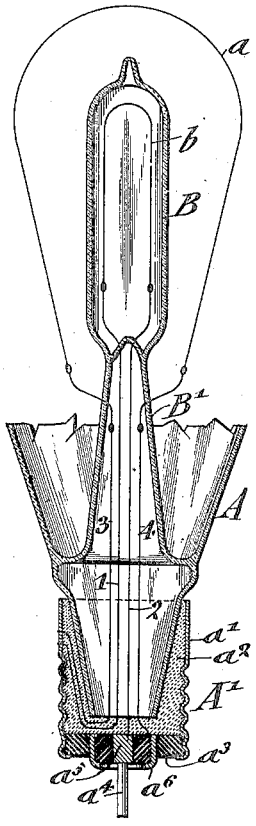

FIG. 2.

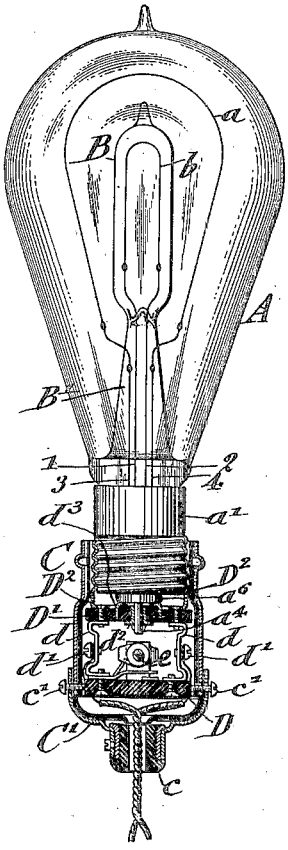

FIG. 4.

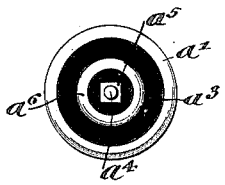

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FIG. 5.

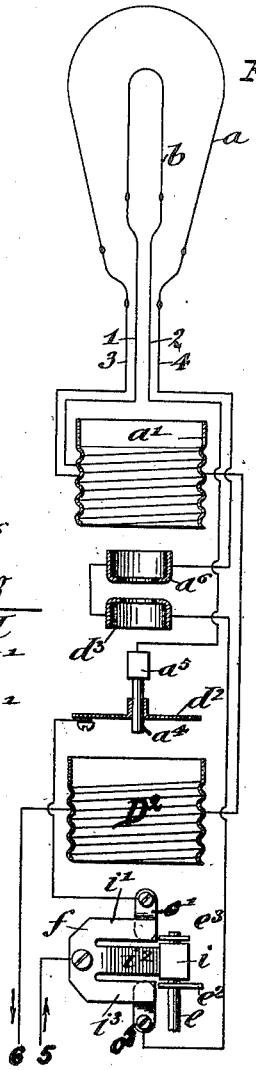


FIG. 6.

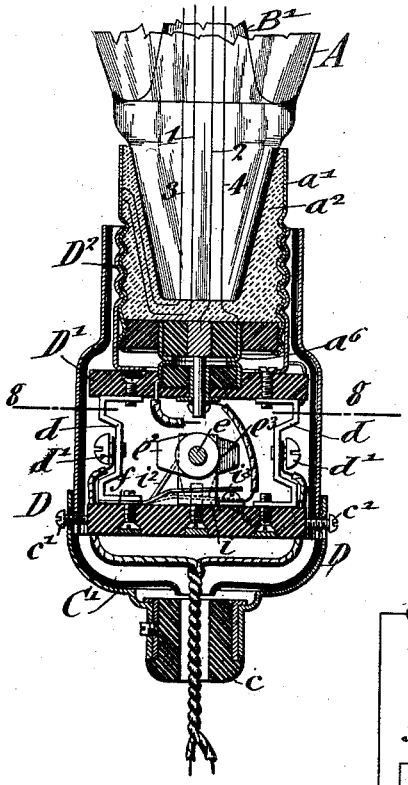


FIG. 7.

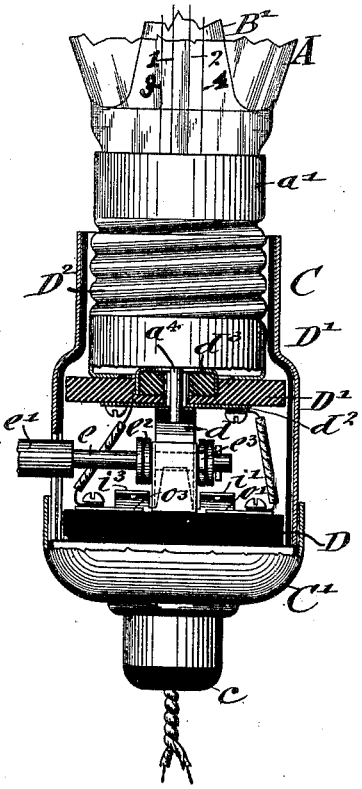
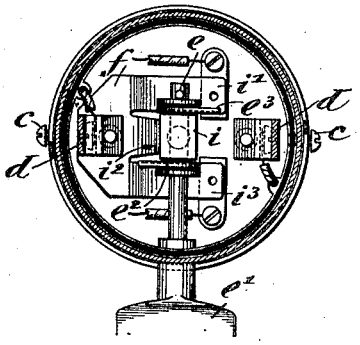


FIG. 8.



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UNITED STATES PATENT OFFICE.

CHARLES A. HUSSEY, OF NEW YORK, N. Y.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 676,952, dated June 25, 1901.

Application filed October 23, 1900. Serial No. 34,057. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. HUSSEY, a citizen of the United States, residing in New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

This invention relates to an improved incandescent electric lamp and socket therefor in which provision is made for varying the strength of the light given by the lamp by burning the same either at full candle-power or with a diminished light.

For this purpose my invention consists in the novel construction of the lamp and socket and in the novel construction and arrangement of the parts constituting the switch by which the strength of the light is regulated.

In my invention the lamp is provided with two filaments—a small one, inclosed by a separate bulb, and a larger filament, inclosed by the exterior or main bulb. The lamp is inserted into a suitable socket that is provided with contact-pieces that are so arranged that when the lamp is placed in the socket the contact-pieces of the bulb are in contact with the contact-pieces of the socket. The contact-pieces of the socket are connected with a switch of suitable construction and conductors for supplying electric current to both lamps, the switch being adapted to connect either one filament or the other through the contact-pieces of the lamp and socket with the supply-conductor.

My improved incandescent electric lamp and socket are fully described in the accompanying drawings, in which—

Figure 1 is a side elevation of the lamp and socket. Fig. 2 is also a side elevation, partly in section, through the socket and switch. Fig. 3 is a detail vertical section, drawn on a larger scale, of the two filaments and their connection with the base of the bulb. Fig. 4 is a bottom view of the base of the compound bulb. Fig. 5 is a diagrammatic view showing how the switch acts to connect the lamp-filaments with the supply-conductor in order to obtain a strong or weak light. Fig. 6 is a vertical transverse section of the base of the lamp and its socket, drawn on line 6 6, Fig. 1, and on a larger scale. Fig. 7 is also a vertical section through the socket, taken on a plane at right angles to that of Fig. 6; and Fig. 8 is a horizontal section on line 8 8, Fig. 6.

Similar characters of reference indicate corresponding parts.

Referring to the drawings, A represents the exterior or main bulb of the lamp, B the interior bulb, and A′ the base of the lamp, designed to fit within the upper or open end of the socket C. Within the interior smaller bulb B is located a filament *b*, of the usual material and construction, the ends of which are secured to conductors 1 2, which pass through and are sealed within a glass tube B′, which forms an extension of the interior bulb B, as shown in Fig. 3. A larger filament *a* is arranged in the main bulb A, the larger filament extending, preferably, over the interior smaller bulb B and being likewise connected with conductors 3 4, which pass through and are sealed into the glass tube B′ of the interior bulb B. The construction of the interior and exterior bulbs may be the same as in ordinary lamps. The end of the glass tube B′ is secured in the base A′, which is composed of a metallic casing *a′*, having a screw-thread and filled with a plaster-of-paris or other suitable insulating-filling a^2, so as to form a reliable seat for the lower end of the compound bulb. The end of the casing *a′* is closed by a plug or disk a^3, of insulating material, which is secured to the casing in any suitable manner. In the center of the disk is located the shank of a projecting contact-pin a^4, to which one conductor of the filament of the interior or smaller bulb is connected. The pin a^4 has preferably a square shank a^5, so as to secure it firmly in the disk. A metallic ring a^6 is likewise secured to the disk a^3 concentric with the pin a^4, said ring serving as the contact-piece for one of the conductors, as 4, of the filament *a*, and the pin a^4 being connected to a conductor, as 2, of the filament *b*, the other filaments being connected with the casing *a′*, as shown in Fig. 3.

A metal shell C′ forms the base of the socket C and is provided with a perforated plug *c*, of insulating material, through which the conductors are passed to the interior of the socket. The base of the socket is connected, preferably, by a bayonet-joint with the body of the socket, so as to be readily

removable therefrom. Within the socket is located a disk D, of insulating material, preferably held in position by the same screws c' which serve for the bayonet-joint referred to. The disk D supports two metallic posts d d, that are attached at their lower ends by screws or other means to the disk D and at their upper ends to a second disk D', also of insulating material, which is arranged above the lower disk D. To the disk D' is secured a screw-threaded metallic socket D^2, that serves to receive the threaded base of the lamp A. The socket D^2 is connected by a metallic conductor with one of the posts d. Each of the posts d is provided with a binding-screw d', to which one of the conductors 5 6, entering through the base C', is connected, as shown in Fig. 6. The upper disk D' is provided with a metallic sleeve d^2, adapted to receive and form electrical contact with the pin a^4 of the base A'. The sleeve d^2 is electrically connected in any suitable manner with one of the contact-plates, as o', attached to the base-disk D. A metallic ring d^3 is secured in the insulating-disk D' concentric with the sleeve d^2 and so located as to contact with the ring a^6 when the base A' is screwed into the socket, said ring being electrically connected with the opposite contact-plate, as o^3, of the disk D.

The space between the insulating-disks D D' constitutes a chamber within which is placed the switch by which either the interior or exterior incandescent-lamp is supplied with current. The switch mechanism is shown in detail in Figs. 6, 7, and 8, and consists of a spindle e, that is supported by suitable bearings and passes at one end into the socket, said spindle being provided with a key e' for operating the same and within the socket with diametrical cams e^2 e^3, which are retained in position on the same by means of suitable washers or in any suitable manner. Between the two cams e^2 e^3 is located a supporting-block i, through which the spindle passes, said block being attached by a screw or otherwise to the disk D, as shown in Fig. 6. The contact-plate f, attached to the disk D, is provided with three parallel tongues or brushes, the two outer ones i' i^3 forming contact, respectively, with the metallic contact-plates o' o^3, attached to the disk D, when depressed by the cams e^2 e^3, while the third tongue i^2 forms contact with the supporting-block i. In the position of the switch shown in Fig. 6 none of the contact-springs are shown depressed by the cams e^2 e^3, and therefore not in contact with their contact-plates o' or o^3, so that no current is passing through either lamp. When the key is turned, either one or the other of its cams is placed in contact with one or the other exterior contact-spring of the plate f, the same thereby depressed, and thereby either one lamp or the other supplied with current, the other lamp being cut off.

The connections made by the switch in the various positions of the key are illustrated in Fig. 5, in which the contact-springs and contact-pieces of the sockets and filaments are diagrammatically illustrated. In the position shown neither of the contact-springs is depressed. When the spindle is turned through one-quarter of a rotation, one of the cams depresses one of the contact-springs into contact with its plate, so that the current will then pass from the conductor 5 to the post d, connected with the plate f, and from the same to the sleeve d^2. From said sleeve the current passes over the pin a^4 to the interior filament b, through the same to the casing a', and thence to the socket D^2 to the line 6. The filament of the interior bulb is thereby lighted, emitting a faint light, which serves as a night-light or whenever it is desired to have only a dim light in the room, such as when leaving the room for some time or for retiring at night. When the spindle is turned through another quarter-rotation, the cam ceases to be in contact with the spring-plate, and the current flowing through the filament of the smaller bulb is interrupted and the light extinguished. When the spindle is turned through another quarter of a rotation, the second cam is brought into contact with and depresses the opposite spring-plate, so that the current passing in is conducted over said spring-plate to the conductor leading to the filament of the exterior bulb, thence through the same to the casing a', socket D^2, and from the latter to the line 6. By turning the key another quarter of a rotation the contacts of the supply-conductors with the larger lamp are interrupted and the light of the same extinguished. The key may be turned in either direction, the connections being made in the same manner, but in the reverse order.

The interior bulb is preferably made of colored glass, either red or blue, or of ground-glass, so that the light of the filament of the interior lamp is dimmed when the same is burning, the exterior bulb giving a larger white light, (used for illumination,) while the interior bulb-filament being of higher resistance and the glass of a different color saves current and supplies a dim light of any desired color.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A combined incandescent electric lamp and socket having two filaments, an interior smaller one inclosed by an interior bulb and an exterior larger one inclosed by the main bulb, a socket arranged to receive said lamp, conductors for supplying current to the lamp, and a switch in the socket adapted to connect either filament with said conductors, substantially as set forth.

2. An incandescent electric lamp composed of two lamps, one inside of the other, a larger filament in the exterior lamp and surround-

ing the interior bulb, and a smaller filament of higher resistance in the interior lamp, substantially as set forth.

3. An electric lamp composed of two lamps, one inside of the other, the color of the interior bulb being different from that of the exterior bulb, a larger filament in the exterior lamp and surrounding the interior bulb and a smaller filament of higher resistance in the interior lamp, substantially as set forth.

4. A combined incandescent electric lamp and socket provided with two filaments, the interior smaller filament being inclosed by an interior smaller bulb, and the exterior larger filament by a larger or main bulb, contact-pieces on the lamp forming terminals for said filaments, a socket adapted to receive the base of the lamp and having contact-pieces corresponding to and adapted to make contact with the contact-pieces of the lamp, conductors for supplying current to the lamp, and a switch adapted to connect either filament with the conductors, substantially as set forth.

5. A combined incandescent electric lamp and socket provided with two filaments, an interior smaller filament inclosed by a smaller bulb, and a larger filament inclosed by a larger main bulb, contact-pieces at the base of the lamp forming terminals of said filaments, a socket arranged to receive the base of said lamp, contact-pieces in said socket corresponding to and adapted to make contact with the contact-pieces of the lamp when the base of the lamp is placed within the socket, conductors for supplying current to the lamp, and a switch in the socket connected with said conductors and with the contact-pieces of the socket so as to supply a current to one filament or the other, substantially as set forth.

6. In a combined incandescent electric lamp and socket, the combination, with a lamp having two filaments, an interior smaller one inclosed by a smaller bulb, and an exterior larger one inclosed by a larger main bulb, contact-pieces for said filament in the base of the lamp, of a socket adapted to receive said lamp and having contact-pieces adapted to engage with the contact-pieces of the lamp, conductors for supplying a current to the lamp, and a switch in the socket formed of spring-plates and contact-pieces connected with the conductors, and a revoluble key-spindle provided with diametrical cams for closing either one of said conductors and connecting either one of the lamp-filaments with the same, substantially as set forth.

7. In a combined incandescent electric lamp and socket, the combination with a lamp having two filaments, the inner inclosed by a smaller bulb and the outer by a main bulb, contact-pieces forming terminals for said filaments, of a socket for said lamp, provided with contact-pieces adapted to form contact with the contact-pieces of the filament, conductors for supplying current to the lamp, contact-plates for said conductors, spring-plates connected with said conductors, additional contact-plates below said spring-plates, a revoluble key-spindle provided with diametrical cams for actuating either one of said spring-plates and bringing it in contact with the contact-plates so as to supply current to either one of the filaments in the lamp, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES A. HUSSEY.

Witnesses:
PAUL GOEPEL,
GEO. C. GEIBEL.