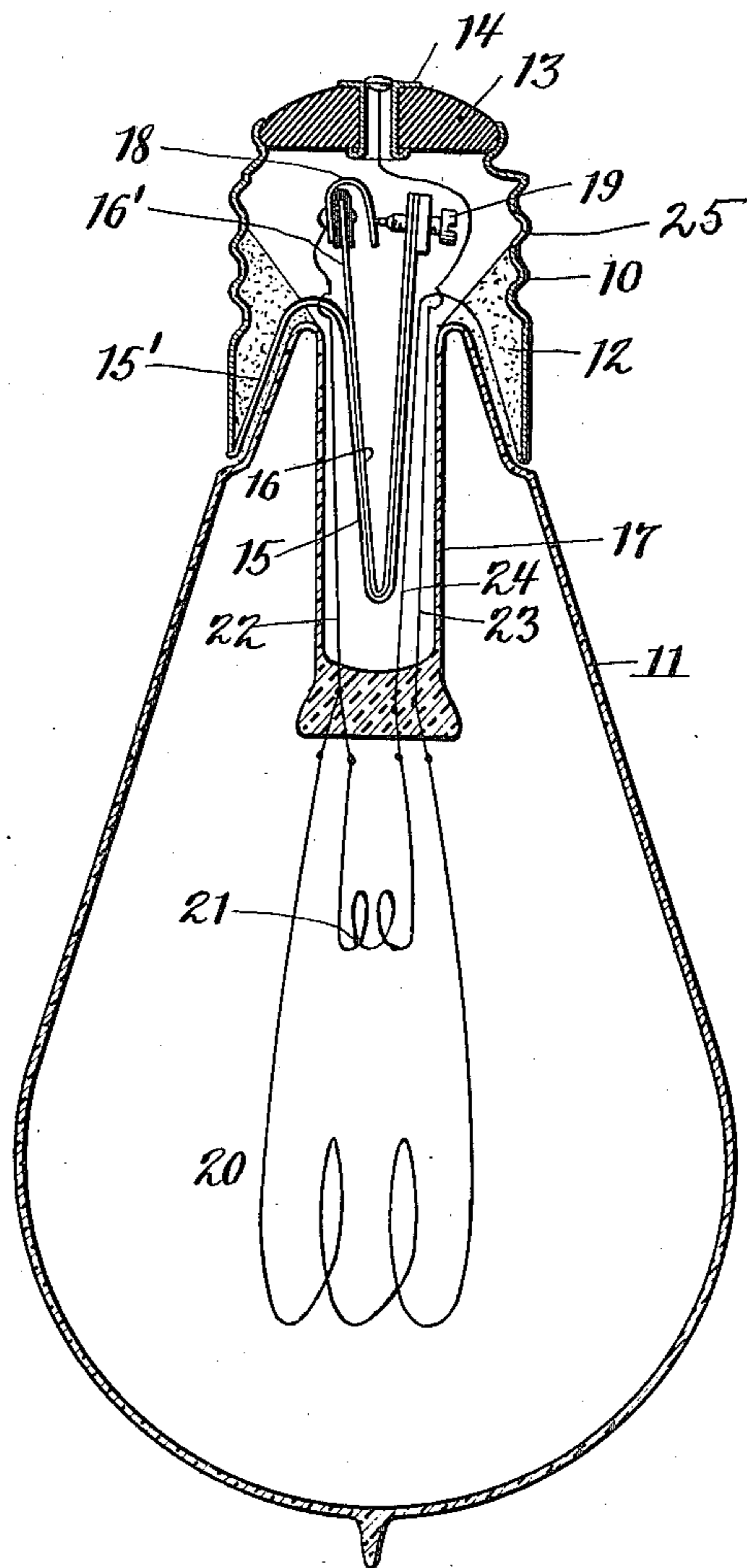


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 AUTOMATICALLY FLASHING ELECTRIC LAMP.
 APPLICATION FILED JULY 16, 1903.

976,287.

Patented Nov. 22, 1910.



Witnesses:

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UNITED STATES PATENT OFFICE.

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AUTOMATICALLY-FLASHING ELECTRIC LAMP.

976,287.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed July 16, 1903. Serial No. 165,729.

To all whom it may concern:

Be it known that I, WILLIAM J. PHELPS, a citizen of the United States, and a resident of Detroit, county of Wayne, and State of Michigan, have invented certain new and useful Improvements in Automatically-Flashing Electric Lamps or the Like, of which the following is a full, clear, and exact description.

The invention relates to automatically flashing electric lamps, and more particularly to electric lamps having two or more filaments.

The improvement seeks to provide an electric lamp which may be used with an ordinary lamp-holder and which is provided with a thermostatic switch for modifying the current to the lamp filaments and thereby vary the light emitted.

In the drawings is shown a longitudinal section through an incandescent lamp to which the invention is applied.

The lamp comprises a metal screw-shell or cap 10 which forms one of the lamp terminals for the reception of current. Within the outer end of the shell 10 is mounted an ordinary exhausted glass bulb 11, which is supported in place by the composition filling 12. A disk 13 of porcelain or like material is mounted upon the end of the screw-shell 10 and carries a central stud or rivet 14 which forms the second terminal of the lamp for the reception of current.

The thermostatic switch preferably comprises a bent composite bar formed of separate strips of metal 15 and 16 soldered together. The strips 15 and 16 are formed of metals having different coefficient of expansion, such for example as brass and steel, so that, when heated, the ends of the thermostatic bar will spread.

One end 15' of the metal strip 15 is separated from the metal strip 16, extends downwardly through the composition filling 12 and is fixed, preferably by solder, to the screw-shell terminal 10. In this manner the thermostatic switch 15, 16 is supported or held in place within the base of the lamp and with the main portion thereof extending within the hollow glass neck or mount 17 of the vacuum bulb 11. The end 16' of the metal strip 16 which projects outwardly

within the base of the lamp, carries a bent spring contact 18 which is, however, insulated therefrom, as indicated. The opposite joined end of the strips 15 and 16 carries an adjustable screw contact 19 adapted to engage the spring contact 18.

Two or more filaments 20 and 21 are preferably employed and such filaments are preferably of different candle power. Preferably also, the low power filament 21 is of higher resistance per unit of length than the high power filament. Leading-in wires 22, 23 and 24 are connected respectively to the contact 18, the terminal 14 and the screw-shell terminal 10, and extend within the neck 17 of the lamp. Leading-in wire 22 is connected to the joined ends of the filaments 20 and 21 while leading-in wires 23 and 24 are connected respectively to the opposite ends of the high power filament 20 and the low power filament 21.

By arranging the V-shaped or bent thermostatic bar within the hollow neck 17 of the lamp, it is exposed to and operated by the heat developed by the filaments of the lamp. When the high power filament glows, sufficient heat is developed to gradually expand the thermostatic bar 15, 16 until contact between screw 19 and spring strip 18 is broken. The thermostatic bar will then gradually cool until contact between these parts is again established. In this manner the circuit through the lamp is automatically and successively opened and closed between the contacts 18 and 19. Where two filaments are employed, as indicated in the drawing, the thermostat will be so constructed that it will be heated when the high power filament is lighted and will cool when the low power filament alone glows.

In the position shown in the drawing, current will flow from lamp terminal 14 by the leading-in wire 23, through the high power filament 20 by leading-in wire 22, contacts 18 and 19 and through the metal body of the thermostatic bar to the other lamp terminal 10. In this position the high power filament will alone glow with full candle power, while the low power filament 21 is short circuited. The heat developed by the high power filament will gradually expand the thermostatic bar 15, 16 until con-

tact 19 is shifted out of engagement with contact 18. Current will then flow from lamp terminal 14 by leading-in wire 23, through the high and low power filaments 20 and 21 in series, and by leading-in wire 24 to the other lamp terminal 10. The low power filament will then alone glow while the high power filament acts as a dark and dead resistance cutting down the amount of current used. The thermostatic bar then slowly cools until contact is again made between the screw 19 and the spring strip 18. In this manner a flash lamp is provided suitable for electric signs, advertisements and other purposes, which is automatically turned up and down, varying the amount of light emitted. Screw contact 19 may be properly adjusted by inserting a suitable tool through an opening 25 in the screw-shell 10. After adjustment this opening may be closed with a drop of solder if desired.

The leading-in wires 22, 23 and 24 may be insulated from the thermostat 15, 16 in any suitable manner. Preferably however, the leading-in wires or the thermostat or both or all of them are covered with an insulating layer of lacquer or varnish or the leading-in wires could, if desired, be covered with insulating sleeves or jackets.

Numerous changes could be made in the construction and arrangement of the invention without departure from the essentials thereof.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent is:—

1. An automatically flashing, electric incandescent lamp comprising an exhausting globe, a filament therein, a cap mounted on said globe and provided with terminals for the reception of current, and a thermostatic switch mounted within said cap and extending within the neck of said globe, said switch being interposed between said terminals and said filament and exposed to and operated by the heat of said filament to modify the flow of current therethrough, whereby said filament is alternately heated and cooled, substantially as described.

2. An electric, incandescent lamp having two filaments of different candle power connected in series and a thermostatic switch exposed to and operated by the heat of said filaments and arranged to automatically open and close the short circuit around the low power filament, substantially as described.

3. An electric incandescent lamp having two filaments of different candle power connected in series and a thermostatic switch mounted within the neck of the lamp, exposed to and operated by the heat of said filaments and arranged to automatically open and close a short circuit around the low-power filament.

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Witnesses:

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