J. H. COGGINS.

INCANDESCENT ELECTRIC LAMP.

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1,298,179.

Patented Mar. 25, 1919.

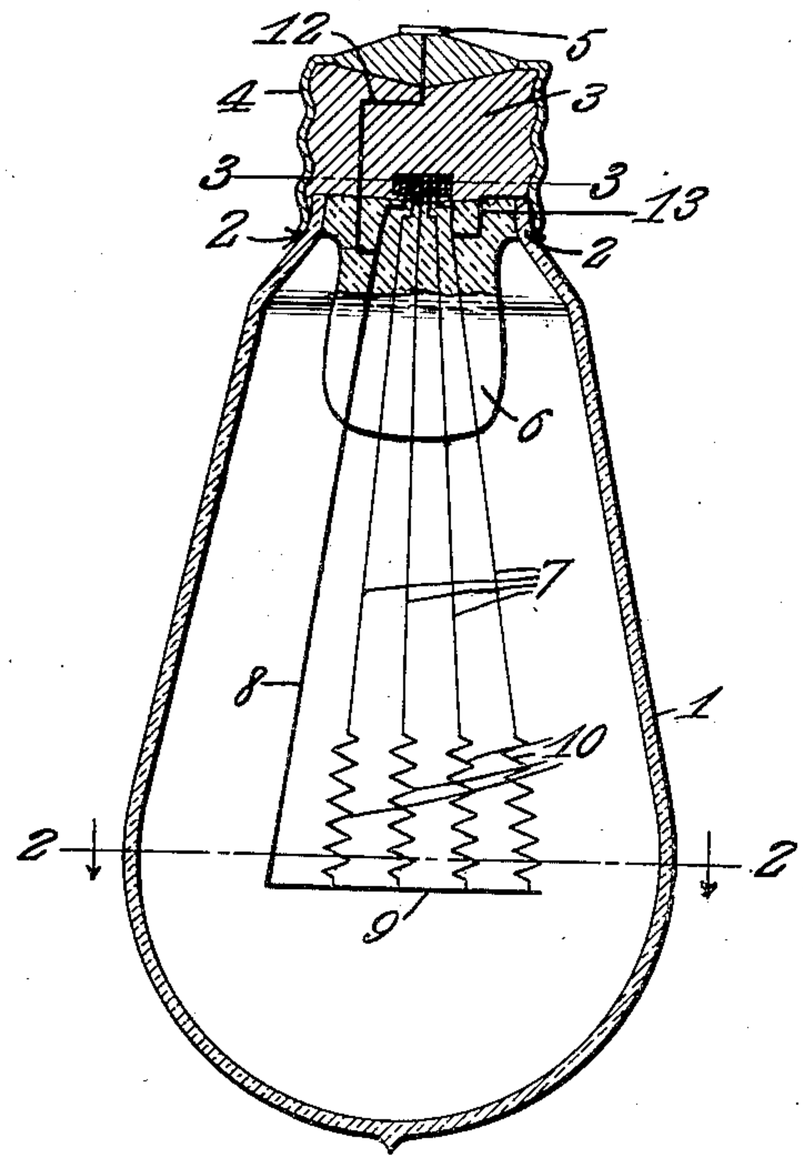


Fig. 1.

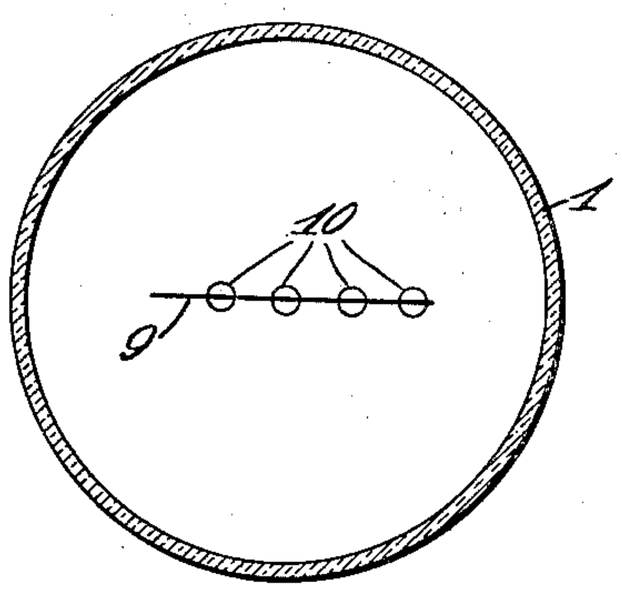
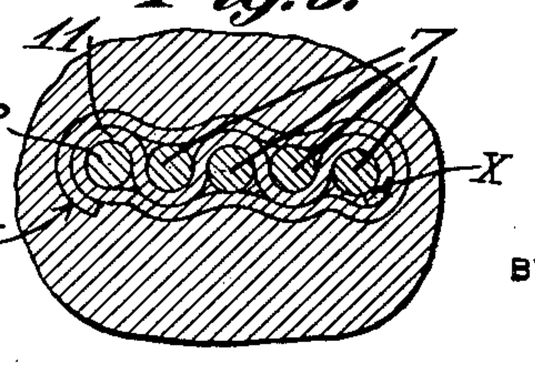


Fig. 2.

Fig. 3.



WITNESSES

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INCANDESCENT ELECTRIC LAMP.

1,298,179. Specification of Letters Patent. Patented Mar. 25, 1919.

Application filed January 22, 1917, Serial No. 143,790. Renewed October 5, 1918. Serial No. 257,064.

To all whom it may concern:

Be it known that I, JACOB H. COGGINS, a citizen of the United States, residing at Talladega, in the county of Talladega and State of Alabama, have invented certain new and useful Improvements in Incandescent Electric Lamps, of which the following is a specification.

My invention relates to improvements in incandescent electric lamps used in series systems, and it consists in the constructions, combinations and arrangements herein described and claimed.

An object of my invention is to provide an incandescent lamp to be used in a series with currents of high electromotive force having a plurality of independently arranged filaments therein, whereby, should one of the filaments become fractured or burnt out, another filament will be instantly connected with the current supplying wire, and the illumination of the lamp remain uninterrupted.

Another object of the invention is to provide an incandescent electric lamp used in a series system having a plurality of independently arranged filaments, one of which upon burning out, will instantly connect the next one into the circuit, and thus eliminate the necessity of frequent lamp renewals.

Other objects and advantages will appear from the following specification, reference being had to the accompanying drawing, in which:

Figure 1 is a vertical section of a lamp embodying the elements of my invention,

Fig. 2 is a cross section on the line 2—2 of Fig. 1, and

Fig. 3 is an enlarged section on the line 3—3 of Fig. 1.

In the preferred embodiment of the present invention about to be described, it should be understood at the outset that the lamp is designed to be used in a series system with currents of high electromotive force, and comprises a lamp globe 1. The smaller end 2 of the globe 1 is seated in the base 3 which may be of any suitable dielectric material such for instance as porcelain. In constructing the lamp the globe 1 is embedded in the base 3 in any suitable manner, and the air from within the globe is exhausted as is common in practice.

A screw threaded metallic sleeve 4 is affixed about the base 3 and forms one terminal of the electric circuit of the lamp connectible with the external lighting circuit. The companion terminal 5 is arranged centrally of the base 3 and connects with the other end of the external lighting circuit. It will be readily understood that the connection of the external circuit with the lamp is had by screwing the lamp in the conventional form of lamp receiving base.

Supported within the lamp and secured to the base 3 in any suitable manner, is a glass filament support 6. The upper portions of a plurality of filament strands 7 are embedded in the glass support 6 in a manner somewhat as shown in Fig. 1. A combined feeder and filament bracket 8 is similarly embedded in the support 6, and is bent at its outer end into a transversely disposed branch 9. The filaments 7 are provided with spiral portions 10 which when heated to incandescence form the light radiating elements of the lamp. It will be seen that the filaments 7 are attached to the branch 9 of the feeder at places adjacent the spirals 10, whereat current is supplied to certain ones of the filaments in a manner presently to be explained.

The upper ends of the filaments 7 as well as the upper end of the feeder 8, terminate in the base 3. The ends of these members are gathered in a cluster somewhat as shown in Fig. 1 and as more particularly shown in Fig. 3. In order to insulate the adjacent filament ends from one another, a strip of thin dielectric material 11, such for instance as tissue paper, is wound around these ends. The winding of this strip of dielectric material 11 is started as at *x* in Fig. 3 and threaded first over and then under the adjacent and successive filament ends and finally brought around the entire cluster where it terminates as at *y*. Under ordinary conditions the current will not pass through the strip 11 but will leave the feeder 8 after entering one of the filaments 7.

The current is led from the feeder 8 by a conductor member 12 which is embedded in the base 3 and is connected to the cap 5 and to the feeder 8. The metallic sleeve 4 is connected with the filament 7 located farthest from the feeder 8, by a conducting member 13 which is similarly embedded in the base.

In the operation and use of the lamp, it is screwed into the conventional type of lamp socket. The current upon being turned on, enters the lamp through the connection 13

and traverses the filament 7 farthest from the feeder 8. The current then traverses the feeder 8, the connection 12, and returns to the external circuit through the cap 5. The current in passing through the filament 7 and particularly the spiral portion 10, heats the filament to incandescence which thus serves as the illuminant.

Upon continued use of the lamp, the filament 7 will eventually burn out. Instantaneously upon the burning out of the end filament 7, the potential of the lighting being very high will cause the dielectric strip 11 to be punctured between the first and second filament ends, the dielectric property of the strip 11 is thus destroyed and the current from the wire 13 will then enter the second filament 7 which it traverses and leaves the lamp through the feeder 8, wire 12 and cap 5.

The same automatic cutting-in action of the successive filaments, occurs upon the burning out of the successive filaments and it will readily be apparent that the light and usefulness of a lamp having an arrangement of a plurality of filaments as illustrated and described, will be increased fourfold. When the last filament is finally burned out, the lamp must of course be replaced with a new one.

While the construction and arrangement of the lamp base and filaments is that of a preferred one, obviously variations may be made without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In an incandescent electric lamp to be used in a series system, the combination of a base, a plurality of filaments independently embedded in the base, a feeder supporting the opposite ends of the filaments, a source of current supply connected to the feeder and one of the filaments, and a dielectric wound between the adjacent ends of the filaments and said feeder being embedded in the base.

2. In an incandescent electric lamp to be used in a series system, the combination of a base having a filament support, a filament bracket embedded in the base, a plurality of independent filaments embedded in the base in proximity with the bracket the opposite ends of the filaments being attached to the opposite end of the filament bracket, a source of current supply connected with the end of the embedded bracket and the filament farthest therefrom, and a dielectric strip wound around and between the adjacent ends of the filaments and the bracket embedded in the base, said dielectric being adapted to be fractured between one of the filaments upon breakage thereof and the succeeding filament whereby the current will enter said succeeding filament.

3. In an incandescent electric lamp to be used in a series system, the combination of a feeder, filaments connected to said feeder, a source of current supply connected to said feeder and one of said filaments, and a dielectric wound between the adjacent ends of the filaments.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB H. COGGINS.

Witnesses:
E. M. MANNING,
H. F. HENDERSON.