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O. H. CORVINGTON ET AL

2,076,527

MULTIPLE FILAMENT LAMP

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Fig. 1

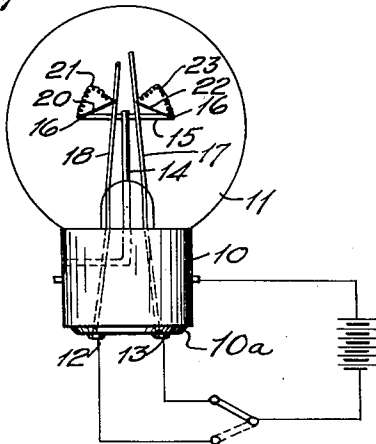


Fig. 2.

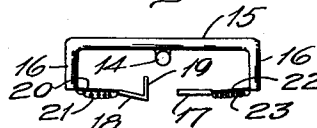


Fig. 3.

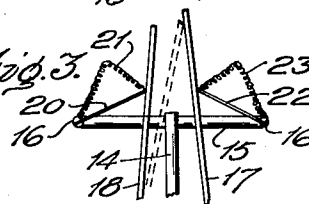


Fig. 4.

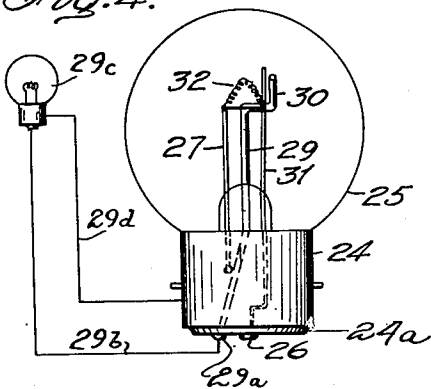


Fig. 5.

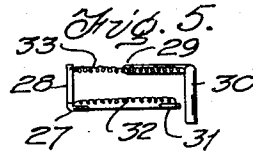


Fig. 6.

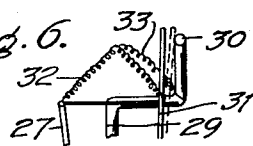


Fig. 7

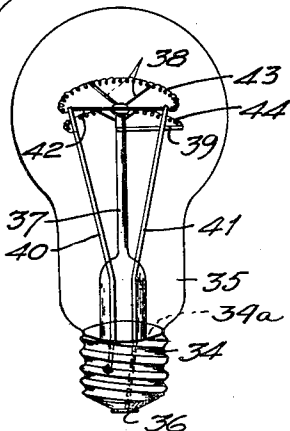
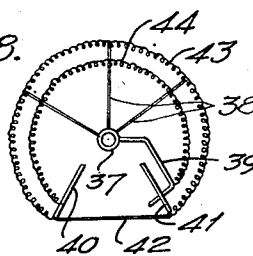


Fig. 8.



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MULTIPLE FILAMENT LAMP

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8 Claims. (Cl. 176—27)

This invention relates to incandescent lamps. In the use of such lamps the life of the lamp as ordinarily constructed depends on the life of the filament.

One important object of the invention is to provide a novel construction of incandescent lamp having two filaments adapted for alternative use, as in the use of tilt-ray headlamps, wherein either filament automatically will be brought in operation upon failure of the other filament.

A second important object of the invention is to accomplish the aforesaid object in a novel manner by means within the lamp.

A third important object of the invention is to provide a novel construction of double filament lamp especially adapted for use in the headlights of automobiles and other places where there is need of unfailing illumination.

With the above and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawing and particularly pointed out in the claims.

In the accompanying drawing like characters of reference indicate like parts in the several views, and:—

Figure 1 is a front elevation of a lamp embodying one form of the invention.

Figure 2 is an enlarged plan view of the filament supports and conductors in this form.

Figure 3 is a front elevation of the disclosure of Figure 2.

Figure 4 is a view similar to Figure 1 but showing a second form.

Figure 5 is an enlarged plan view similar to Figure 2 but of the second form.

Figure 6 is a front elevation of the disclosure of Figure 5.

Figure 7 is a view similar to Figure 1 but showing a third form.

Figure 8 is a view similar to Figure 2 but showing the third form.

In the form of the invention shown in Figures 1 to 3 there is provided a lamp having a metal conductor sleeve 10 mounted upon the usual dielectric base 10a and carrying the usual glass bulb 11. The lamp is of the type having two contacts 12 and 13 projecting from the base 10a to engage corresponding contacts (not shown) in the lamp socket. Projecting up from the base 10a and electrically connected to sleeve 10 is a conductive post or stiff wire 14. On top of the post 14 is fixed a cross bar 15 bent to provide lateral ends 16 parallel with each other. Fixed

in the base 10a is a conductor wire 17 which is formed of spring material and is connected to the contact 13. Also fixed in the base 10a and connected to contact 12 is a second spring conductor wire 18 which has its upper end bent at right angles to form an arm 19 disposed transversely of the upper end of the wire 17. The spring wires 17, 18 are so arranged that they are normally urged toward each other at all times by their own resiliency. Connecting the wire 18 and adjacent arm 16 is a resistance wire or filament 20 the ends of which have connected thereto an inverted V-shaped coil of resistance wire or filament 21. The wires 20 and 21 thus form a triangular filament, these wires being so proportioned that the coil filament 21 normally carries most of the current and glows when current passes between the conductors 18 and 15. Similarly, a triangular filament having a straight base filament 22 and coiled filament sides 23 connects the wire 17 and the other arm 16. The wire 17 is normally held from engagement with the arm 19 by the filament 22. The wires 17, 18 alternatively carry the current to the respective filaments 20, 21 and 22, 23 when both filaments are in operative condition.

In the operation of this embodiment of the invention, assuming current to be passing through filament 23 causing it to glow, breakage of this filament causes the entire current load to be taken by the filament 22 which is so proportioned that it cannot carry this load but will fuse and thus release the spring wire 17 from restraint. The wire 17 will instantly move into contact with the arm 19 and the filament 21 will be cut into circuit and glow. In like manner, upon failure of filaments 20, 21, wire 18 will be released and move into contact with wire 17, as indicated in broken lines in Figure 3, to cause filament 23 to glow.

In the form of the invention shown in Figures 4 to 6 there is provided a lamp having a metal sleeve 24 mounted upon a dielectric base 24a, and a bulb 25, said sleeve forming one terminal contact and the base being provided with a centrally disposed second contact 26. Connected to sleeve 24 is a conductor wire or post 27 of stiff material which extends up from the sleeve 24. The upper end of said wire 27 extending from sleeve 24 is bent at a right angle to form a lateral arm 28. Extending up from the base 24a and insulated from sleeve 24 is a post 29 made of stiff wire having an offset end 30. A spring wire 31 is connected to the contact 26 and extends up from the base between the arm 28 and end 30, this wire being constantly urged by its resiliency toward the end

30. Similar to the first form, a triangular filament 32 connects the wires 27 and 31 and normally holds the latter from engagement with the end 30. Likewise, a second triangular filament 33 connects the wire 27 and post 29. As before, when the first filament 32 burns out, the spring wire 31 is released and automatically moves to engage arm 30 to establish a circuit through the second filament 33.

10 In the form of the invention shown in Figures 7 and 8 the construction, while somewhat different from the prior forms, operates upon the same general principles.

In this form there is provided a lamp having 15 a dielectric base 34a and bulb 35. The base has a metal sleeve 34 forming one terminal contact and is provided with a centrally disposed second terminal contact 36. Extending up from the base is a glass post 37 provided with filament supports 38 and from this post extends a conductive arm 39. A stiff conductor wire 40 is connected to the sleeve 34. A spring conductor wire 41 is connected to the contact 36 and extends up near the arm 39 but is held out of contact therewith 20 by a filament 42 which extends between the wires 40 and 41. Also a coiled filament 43 extends arcuately between the wires 40 and 41 in parallel with the filament 42. A second coiled filament 44 extends parallel to the filament 43 between the wire 40 and arm 39. Upon failure of the coiled filament 43 the wire 41 springs into engagement with the arm 39 and brings the coiled filament 44 into circuit as in the other forms.

Also in the form shown in Figure 4 the wire 29 35 may be connected to a contact 29a on the base 24a and from this contact a wire 29b may lead to a signal lamp 29c carried on the dash board or other convenient place where it may be observed by the operator of the car. From the lamp 29c extends a wire 29d which is connected to the casing 24 to which is also connected the wire 27. Thus, when the circuit is closed between the wires 29 and 31 a circuit will also be closed through the lamp 29c and the operator will be notified 40 that the first or normally glowing filament is burnt out. It will be noted that the lamp 29c is connected in shunt to the second filament.

There has thus been provided a simple and efficient device that achieves the several advantages set out in the foregoing statement of objects.

It is obvious that minor changes may be made in the forms and constructions of the invention without departing from the material principles involved. It is not therefore desired to confine 55 the invention to the exact form herein shown and described but it is desired to include all such forms as properly come within the scope of the appended claims.

Having described our invention, we claim:

60 1. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a conductor wire supporting one end of each filament, a second wire supporting the remaining end of one filament and normally out of circuit, a spring conductor wire supporting the remaining end of the second filament and urged by its resiliency into engagement with the second wire, and fusible means normally holding the spring wire out of contact with the second wire, 70 said means being arranged to fuse upon breaking of the second filament, said filaments being arranged on opposite sides of the axis of the lamp.

2. In an incandescent lamp having a base, a 75 bulb and a pair of terminal contacts, a pair of

filaments, a conductor wire supporting one end of each filament, a second wire supporting the remaining end of one filament, a spring conductor wire supporting the remaining end of the second filament, said second wire being normally inactive and urged by its resiliency into engagement with the second wire, and fusible means normally holding the spring wire out of contact with the second wire, said means being arranged to fuse upon breaking of the second filament, said fusible means and second filament being connected in parallel between the first and spring conductor wires, said filaments being arranged on opposite sides of the axis of the lamp.

3. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a conductor wire supporting one end of each filament, a second wire supporting the remaining end of one filament and normally out of circuit, a spring conductor wire supporting the remaining end of the second filament and urged by its resiliency into engagement with the second wire, and fusible means normally holding the spring wire out of contact with the second wire, said means being arranged to fuse upon breaking of the second filament, said filaments being arranged on opposite sides of the axis of the lamp, side by side in close parallel relation.

4. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a conductor wire supporting one end of each filament, a second wire supporting the remaining end of one filament and normally out of circuit, a spring conductor wire supporting the remaining end of the second filament and urged by its resiliency into engagement with the second wire, and fusible means normally holding the spring wire out of contact with the second wire, said means being arranged to fuse upon breaking of the second filament, said fusible means and second filament being connected in parallel between the first and spring conductor wires, said filaments being arranged on opposite sides of the axis of the lamp side by side in close parallel relation.

5. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a conductor wire supporting one end of each filament, a normally dead wire supporting the remaining end of one filament, a spring conductor wire supporting the remaining end of the second filament and urged by its resiliency into engagement with the dead wire, fusible means normally holding the spring wire out of contact with the dead wire, said means being arranged to fuse upon breaking of the second filament, and a signal light connected in shunt to the second filament circuit.

6. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a common support having right and left branches for supporting one end of each of said filaments, a pair of spring conductors supporting the other end of each of said filaments, said spring conductors urged by the resiliency toward each other, and fusible means normally holding said spring conductors out of engagement with each other, said means being arranged to fuse upon breaking of any one of said filaments, said filaments being arranged on opposite sides of the axis of the lamp.

7. In an incandescent lamp having a base, a bulb and a pair of terminal contacts, a pair of filaments, a common support having right and left branches for supporting one end of each of 75

said filaments, a pair of spring conductors supporting the other end of each of said filaments, said spring conductors urged by the resiliency toward each other, and fusible means normally
5 holding said spring conductors out of engagement with each other, said means being arranged to fuse upon breaking of any one of said filaments, each of said filaments and its associated
10 spring conductor being arranged in parallel with the other filament and its associated spring conductor, said filaments being arranged on opposite sides of the axis of the lamp.

8. In an incandescent lamp having a base, a bulb and a plurality of terminal contacts, a pair
15 of triangular filaments in said bulb arranged to have the basal sides constituting fuses and normally holding the remaining sides from spread-

ing, conductive supporting means for one basal angle of each triangle, a second conductive supporting means carrying the remaining basal angle of one triangle, said second conductive means
5 being normally out of circuit, and a third conductive supporting means carrying the remaining basal angle of the second triangle, said third supporting means being resiliently urged into contact with the second conductive means and being
10 normally restrained from such contact by the basal portion of the second triangle, said supporting means being all carried by the base with the first and third means connected to the
terminal contacts.

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