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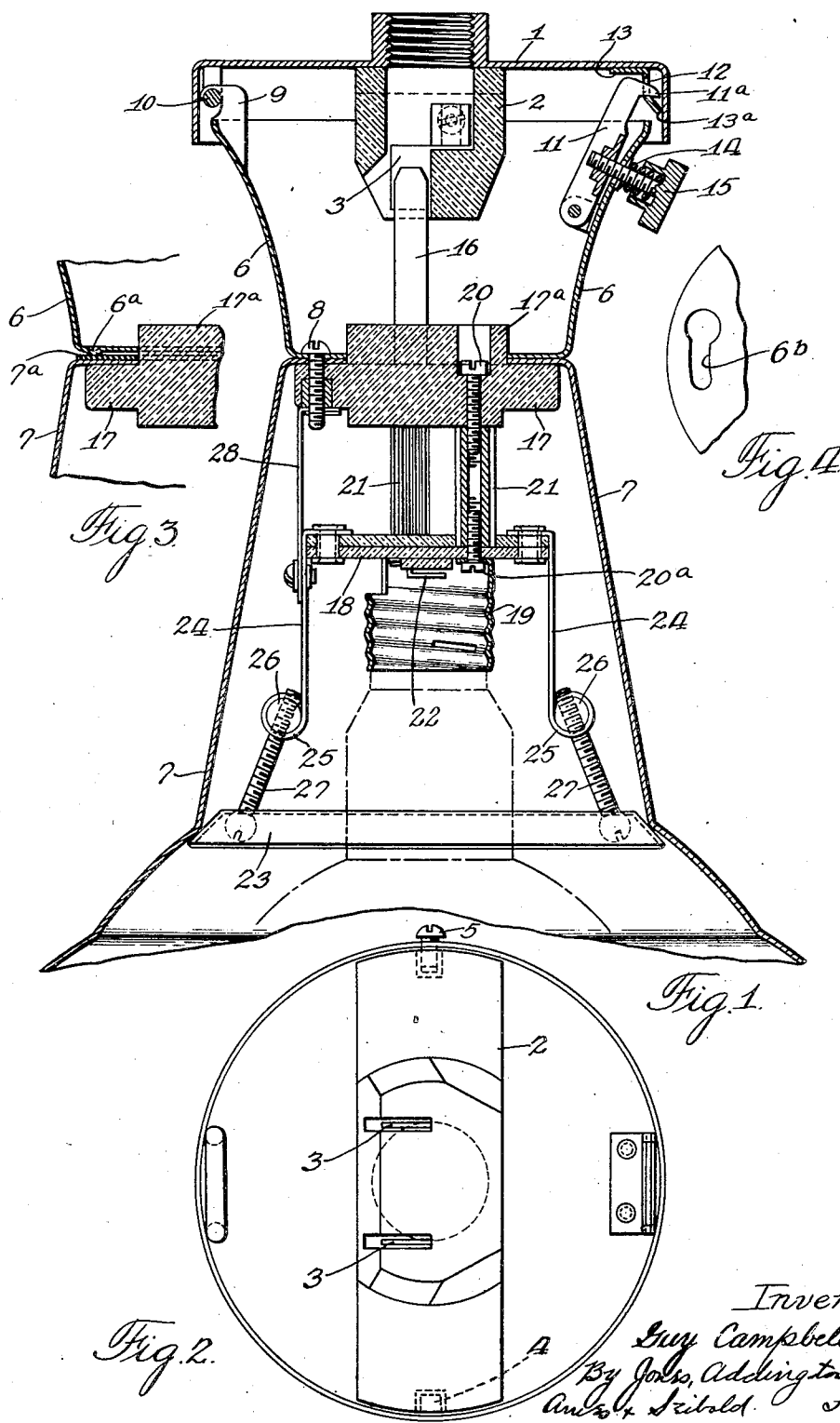
G. CAMPBELL

1,987,464

LIGHTING FITTINGS

Filed Nov. 18, 1933

2 Sheets-Sheet 1



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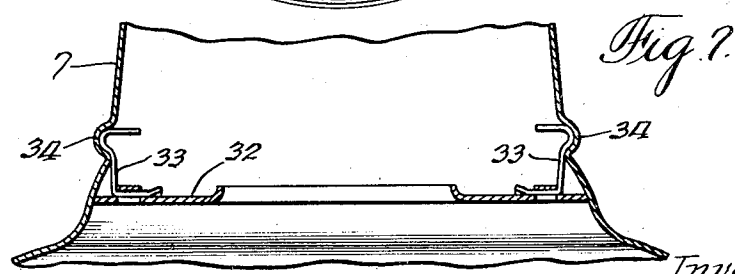
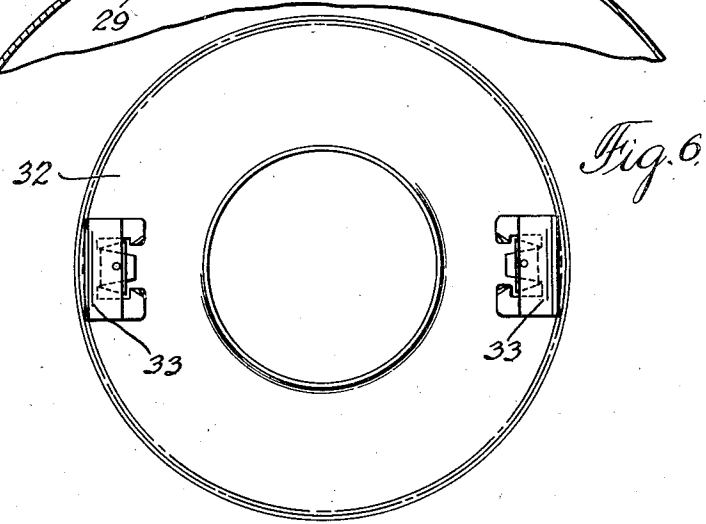
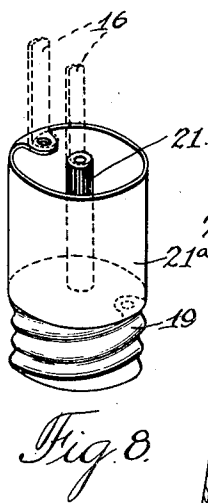
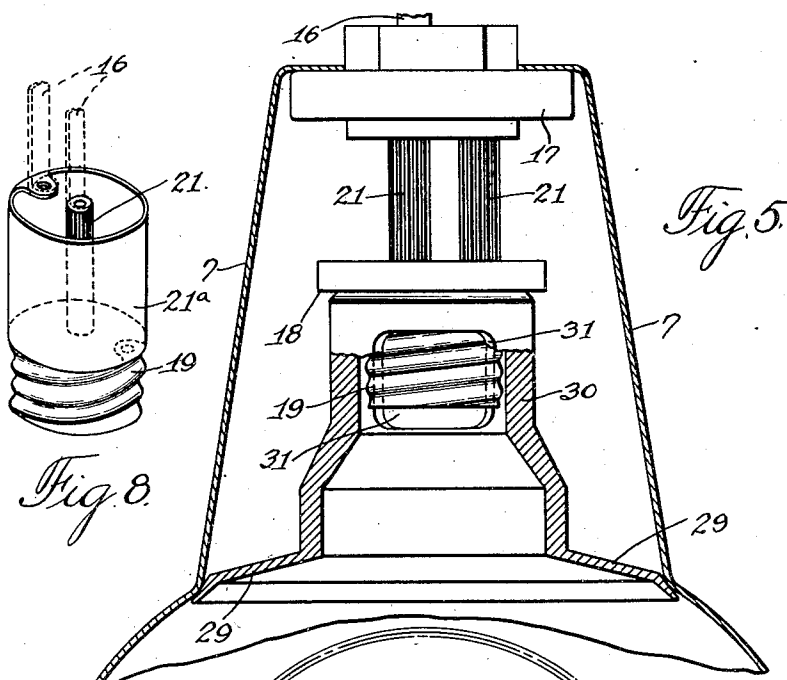
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LIGHTING FITTINGS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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LIGHTING FITTINGS

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5 Claims. (Cl. 240-78)

This invention relates to electric lighting fittings and has reference particularly to fittings having a neck portion in which the lamp holder is housed and a reflector portion.

The invention has for its object an improved construction of fitting designed to ensure a maximum of reflected light and satisfactory heat dissipation and further to ensure that users of the lamp shall be adequately protected from electric shocks when manipulating the lamp bulb or other elements.

The primary feature of the invention is the provision of a supplementary annular reflector detachably secured in and closing the annular neck opening between the lamp fitting and the reflector. This supplementary reflector may vary both in its form and its manner of attachment and support and fulfills the functions of increasing to its maximum the available reflecting surface, protecting the internal fittings and conductors from excessive heating and protecting the user from any danger of shock.

The invention further comprises the provision of special heat dissipating elements and features of construction hereinafter more specifically defined and specifically claimed.

In order that the invention may be more readily understood and carried into effect, reference is hereby made to the accompanying drawings, which illustrate examples of lamp fittings constructed and arranged in accordance with the invention.

In these drawings,—

Figure 1 is a longitudinal section of one form of the improved lamp fitting;

Fig. 2 is an underplan view of the upper or top end or crown of the fitting;

Fig. 3 is a sectional view of a detail;

Fig. 4 is a fragmentary plan view of another detail;

Fig. 5 is a sectional elevation of a modified construction wherein the supplementary reflector is integral with the skirt of the lamp holder;

Figs. 6 and 7 are a plan and a sectional elevation respectively of a further modification of the means for detachably securing the supplementary reflector in position; and

Fig. 8 shows an alternative arrangement for effecting the desired heat dissipation.

Referring to these drawings, and particularly to Figs. 1-4, the numeral 1 designates the top or crown of the fitting, bridging which is an insulating block 2 carrying the electrical spring contacts 3. This block is detachably secured in position by having a depression at one end en-

gaged by a stud 4 fixed in the flange of the crown 1 and its other end secured by a screw stud 5, the size or form of the two studs differing so that correct positioning is ensured. Depending from the crown 1 a detachable cup shaped housing 6 is provided and depending from the lower end of this housing the main reflector 7 is arranged. This main reflector 7 is detachably connected to the lower wall of the housing 6 by means of the screw studs 8 which co-operate with key hole slots 6^b so that by slackening the screw studs 8 until the parts 6 and 7 can be lifted clear of the boss 17^a and then giving a slight turning movement to the housing 6, the parts 6 and 7 can be separated. To ensure a good joint between the housing 6 and the reflector 7 a cork or like washer or gasket 7^a can be employed and the lower wall of the housing 6 given an annular bead 6^a which when the screws 8 are screwed up will bite into the washer or gasket 7^a as indicated by Figure 3.

The housing 6 is detachably connected to the crown 1 by means of a hook member 9, which engages with a fixed bar 10, on one side of the top or crown 1 and a spring latching device located diametrically opposite. This latching device consists of a pivoted latch 11, the free end 11^a of which engages in an opening 12 provided in a fitment 13 fixed within the crown 1. The latch 11 is biased to locking position by the spring 14. When the housing is to be connected to the crown, the hook member 9 is anchored to the bar 10 and the other side of the housing is pushed up until the nose 11^a of the latch 11 rides over the inclined surface 13^a of the fitment 13 when the latch will snap into locked position under the influence of the spring 14 and can then be positively locked by screwing up the locking screw 15. When in this position the blade contacts 16 leading to the lamp holder engage the spring contacts 3 before referred to and establish electrical connection to the lamp holder. To ensure correct positioning of the blade contacts 16, relative to the cooperating contacts 3, the block 17 from which the blade contacts 16 proceed is provided with a boss 17^a of irregular hexagonal or other form so that this block will only fit the registering holes in the bottom wall of the housing 6 and the top wall of the reflector 7 when the blade contacts 16 are in correct position for engaging the contacts 3.

The lamp holder 19 is carried by the mounting plate 18, which consists of sheets of insulating material eyeletted together. This mounting plate

is secured to the block 17 by the screws 20 and 20^a which engage tapped holes in current conducting heat dissipating elements 21, which are cut from what is known as "pinion rod" and thus are provided with longitudinal ribs which serve to dissipate heat. Preferably three of these conducting and heat dissipating elements are provided and, as before indicated, they also act as current conductors, two of them being connected to the shell of the lamp holder 19 while the other is electrically connected to the centre contact 22. It may, however, be advantageous to provide in addition to the elements 21, or in lieu of some of them, a heat dissipating surrounding shield. Such an arrangement is indicated by Fig. 8 wherein 21^a designates the heat dissipating shield. In order to assist in locating these heat dissipating and conducting elements 21 their lower ends are made a good fit in holes punched only in the upper of the two sheets of insulation which constitute the lamp holder mounting plate 18.

The supplementary reflector 23 is adjustably connected to side straps 24 attached to the mounting plate 18. These side straps 24 are rolled at their free ends 25 which carry tapped filling blocks 26 and the supplementary reflector is adjusted by screwing up the screw threaded rods 27 from which it is suspended.

The contour of the supplementary reflector is made to correspond with the inner contour of the main reflector 7, so that the supplementary reflector seats itself firmly within the main reflector. Thus the supplementary reflector operates as a light reflector and also prevents heated air and gases passing upwardly to the interior of the reflector proper which contains the lamp holder and its connections. A grounding strip 28 is preferably provided.

In Figure 5 there is illustrated a modification wherein the supplementary reflector 29 is formed integral with the skirt 30 of the lamp holder which in the example shown is of ordinary form except that holes 31 are provided in the skirt to further facilitate cooling. By reason, however, of the existence of a supplementary reflector the lamp holders employed in connection with any of the forms of the invention may be of skeleton form unprotected by any surrounding insulation as the supplementary reflector obviates any danger of accidental contact with the live parts. In Figs. 6 and 7 the supplementary reflector is shown as a separate detachable member and consists of an annular disc 32 carrying resilient clip devices 33 which snap into an annular groove 34 formed in the wall of the main reflector 7.

I have ascertained from practical tests, using lamps of various wattages, that with the arrangements described, even though the temperature of the lamp is well above the limits recommended for rubber covered conductors in a lamp holder, the temperature at the upper terminal end of the cooling and conductor members is well below the maximum recommended limits. Generally we would say a temperature reduction of at least 65% may be looked for.

It will be understood that various modifications can be made in applying the invention to different types of lighting fitting.

The supplementary reflector is in all cases insulated from all the live parts of the lamp holder and effectively prevents a person from touching any such parts when inserting or removing a lamp from the holder.

Having now particularly described and ascer-

tained the nature of the invention and in what manner the same is to be performed, what is claimed is:

1. A lighting construction comprising a reflector having a hood portion, an insulating base adjacent the upper end of said hood portion, electrical connection members on the upper side of said base, a lamp receptacle in said hood below said base and spaced therefrom comprising an insulating base and lamp contacts mounted thereon, and heat-dissipating conductors exposed to the air within said hood extending between said bases for electrically connecting said lamp contacts with said electrical connection members.

2. A lighting construction comprising a reflector having a hood portion, an insulating base adjacent the upper end of said hood portion, electrical connection members on the upper side of said base, a lamp receptacle in said hood below said base and spaced therefrom comprising an insulating base and lamp contacts mounted thereon, heat-dissipating conductors exposed to the air within said hood extending between said bases for electrically connecting said lamp contacts with said electrical connection members, and an annular shield surrounding the lamp bulb and extending between the bulb and hood for preventing the air heated by the bulb from entering the hood.

3. A lighting construction comprising a reflector having a hood portion, an insulating base adjacent the upper end of said hood portion, electrical connection members on the upper side of said base, a lamp receptacle in said hood below said base and spaced therefrom comprising an insulating base and lamp contacts mounted thereon, and heat-dissipating conductors exposed to the air within said hood extending between said bases for electrically connecting said lamp contacts with said electrical connection members, said hood being supported by said upper insulating base.

4. A lighting construction comprising a reflector having a hood portion, an insulating base adjacent the upper end of said hood portion, electrical connection members on the upper side of said base, a lamp receptacle in said hood below said base and spaced therefrom comprising an insulating base and lamp contacts mounted thereon, heat-dissipating conductors exposed to the air within said hood extending between said bases for electrically connecting said lamp contacts with said electrical connection members, electrical connection members above said first connection members, and means for detachably supporting said reflector in position to hold said connection members in engagement with each other.

5. A lighting construction comprising a reflector having a hood portion, an insulating base adjacent the upper end of said hood portion, electrical connection members on the upper side of said base, a lamp receptacle in said hood below said base and spaced therefrom comprising an insulating base and lamp contacts mounted thereon, heat-dissipating conductors exposed to the air within said hood extending between said bases for electrically connecting said lamp contacts with said electrical connection members, an annular shield surrounding the lamp bulb and extending between the bulb and hood for preventing the air heated by the bulb from entering the hood, and means for supporting said shield from said lamp receptacle.

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