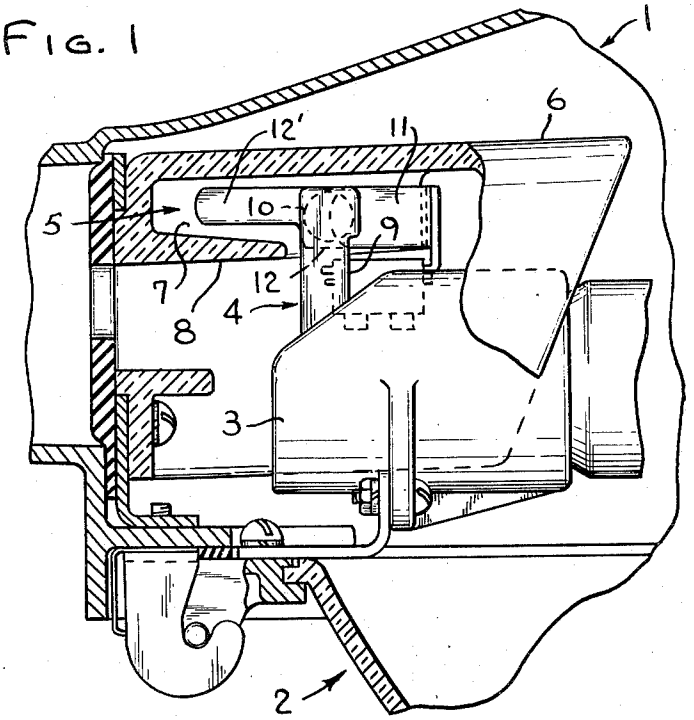
July 9, 1957 H. A. VAN DUSEN, JR 2,798,941

LUMINAIRES

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FIG. 1



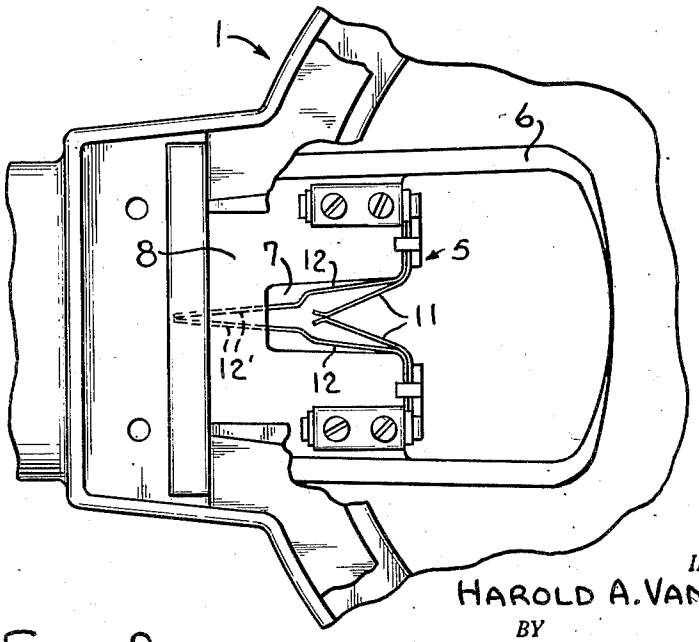


FIG. 2

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LUMINAIRES

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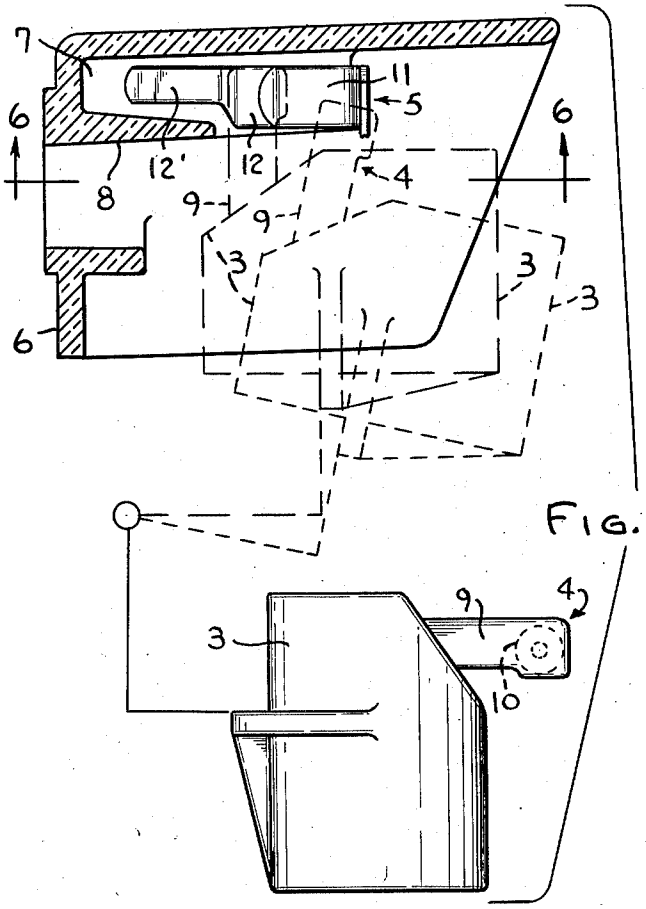


FIG. 3

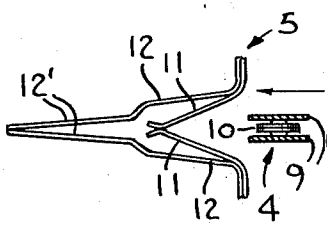


FIG. 4

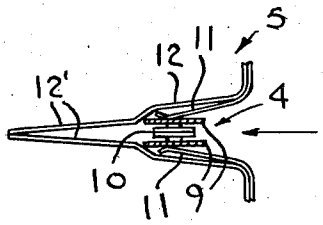


FIG. 5

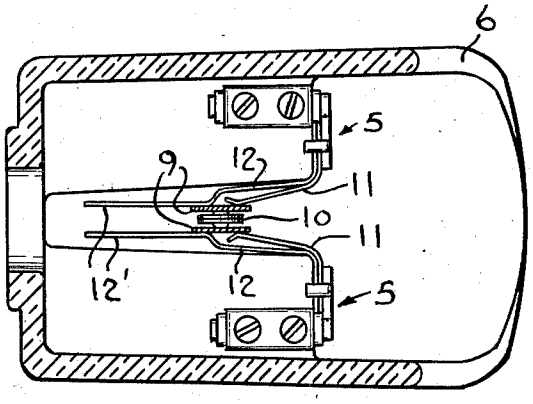


FIG. 6

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2,798,941

LUMINAIRES

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Application June 7, 1955, Serial No. 513,800

3 Claims. (Cl. 240—11.2)

This invention relates to luminaires and is particularly directed to luminaires for series circuit operation.

In luminaires which are used for series circuit operation, considerable difficulty has been encountered in removing and replacing lamps while the circuit is energized. The primary reason for such difficulty is due to the fact that the series circuit is a high voltage circuit and therefore, there is great danger of arcing, burning, or pitting or otherwise damaging either or both the stationary and movable contact means which are carried, respectively by the stationary housing assembly and the movable globe assembly.

The primary object of this invention is to provide a luminaire construction which is so made that the movable globe assembly can be rocked into and out of service position while the circuit is energized without any danger of arcing and burning or pitting of either the stationary or movable contact means.

A further important object is to completely disconnect the lamp socket of the globe assembly from the high voltage circuit on opening the globe assembly with reference to the housing assembly to thereby secure safety for the lineman when changing the lamps or performing other maintenance operations.

In greater detail, objects of this invention are to provide contact means for a luminaire which is so made that the movable contact means when being rocked into service position engages a first pair of resilient contact fingers which are normally in engagement with each other and thereby separate the fingers and connects the lamp in series between such fingers, and thereafter engages a second pair of resilient stationary contact fingers which are normally in engagement with each other and thus places the lamp in the series circuit after the lamp has first been securely connected to the first pair of resilient stationary contact fingers thus insuring a good, firm, and secure connection of the movable contact means of the globe assembly with the stationary contact means of the housing assembly before the lamp is connected in the series circuit, the second pair of stationary resilient fingers constituting a temporary by-pass for the lamp during the first portion of the operation of connecting the lamp in the series circuit.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a fragmentary view of the luminaire with parts broken away and parts in section showing the luminaire in operative position.

Figure 2 is a fragmentary view looking upwardly from beneath the stationary housing assembly with the movable globe assembly removed.

Figure 3 is a somewhat diagrammatic and partially sectional view showing the relative position of the parts in full lines when the globe assembly is in open position and showing in dotted lines the successive position of the movable contact means with reference to the stationary contact means as the globe assembly is rocked into closed position.

Figure 4 is a fragmentary view partly in section of the stationary and movable contact means just before engagement is established between the movable and stationary contact means.

Figure 5 is a view similar to Figure 4 showing the relative position of the movable and stationary contact means at an intermediate stage of the closing motion of the globe assembly.

Figure 6 is a fragmentary sectional view partly broken away showing the final position of the movable and stationary contact means.

Referring to the drawings it will be seen that the luminaire comprises a stationary housing assembly indicated generally by the reference character 1. This housing assembly hingedly supports a globe assembly indicated generally by the reference character 2. The globe assembly carries an insulating lamp receiving socket 3 for the reception of any type of lamp. The lamp receiving socket is provided with knife blade contact means indicated generally by the reference character 4. This knife blade contact means constitutes the movable contact means which is arranged to engage the stationary contact means 5 of the housing assembly 1 as shown in Figures 1 and 6 when the globe assembly is rocked into closed position with reference to the housing assembly as shown in Figure 1. The stationary contact means 5 of the stationary housing assembly is carried by an insulating terminal block 6. This insulating terminal block is provided with a cavity 7 within which the stationary contact means 5 is positioned. It is provided with a lower projecting portion or baffle 8 which is slotted to allow the passage of the movable knife blade contact means 4 of the globe assembly 2 into operative position in engagement with the stationary contact means 5.

The knife blade movable contact means 4 comprises a pair of resilient fingers 9 which are urged towards each other by their resiliency and which removably clamp and hold between themselves a cutout 10, such as a film cutout. The fingers 9 of the movable knife blade contact means 4 are electrically connected to the contacts, not shown, of the lamp socket 3 and are thus connected electrically to the lamp in the well known manner.

The stationary contact means 5 comprising a first pair of resilient fingers 11 which are normally in contact with each other as shown in Figure 4 when the globe assembly is in open position with reference to the stationary housing assembly. The stationary contact means 5 is also provided with a second pair of resilient contact fingers 12 which by their inherent resiliency are normally held in engagement with each other as shown in Figures 4 and 5 until the movable knife blade contact means 4 has been moved into final position as shown in Figure 6, which final position occurs when the globe assembly is in fully closed position with reference to the housing assembly.

It is to be noted particularly that in the initial position of the stationary contact means 5 before engagement by the movable contact means 4 that the first pair of fingers 11 are in engagement with each other and the second pair of fingers 12 are also in engagement with each other. These fingers are connected in the series circuit. In the intermediate position during the closing motion of the globe assembly, the movable contact means 4 first engages and separates the first pair of resilient fingers 11 and thus establishes a secure and firm electrical contact or connection with the lamp of the globe assembly. However, the lamp is bridged or shunted by the second pair of resilient contact fingers 12 of the stationary contact means 5 and the series circuit is not interrupted. This condition of affairs is shown in Figure 5 of the drawings. When the globe assembly is in fully closed position it will be seen that the movable contact

means 4, though still in contact with the first pair of resilient fingers 11, engages the cam-like portions 12' of the second pair of resilient contact fingers 12 and thus places the lamp in series in the series circuit.

It is to be noted that there can be no burning, pitting or other damaging of either the stationary or movable contact means during the closing or opening motion of the globe assembly.

For example, as pointed out above, during the closing motion, the movable knife blade contact means 4 first is firmly electrically connected to the first pair of stationary resilient fingers 11 and this connection is never broken during the succeeding or final motion of the globe assembly. No current is passed through the lamp at this time as it is by-passed or shunted by the second pair of resilient fingers 12 of the stationary contact means 5. However, though this engagement is maintained, nevertheless the second pair of resilient contact fingers 12 are separated on further closing motion and are electrically connected to the movable knife blade contact means 4.

During the opening motion of the globe assembly with reference to the stationary housing assembly it is apparent that re-engagement between the second pair of resilient contact fingers 12 is established before contact of the first pair of resilient fingers 11 with the movable contact means 4 is broken. Thus the series circuit is re-established independently of the lamp, before the lamp is disconnected from the stationary contact means. As the opening motion of the globe assembly is continued, the movable contact means 4 is completely withdrawn from engagement with the first pair of contact fingers 11.

The globe assembly may be hingedly supported from the stationary housing assembly at one end and removably latched to the stationary housing assembly at the other end, and may be generally of the construction as shown in the application of Donald W. Harling for Latches, Serial No. 507,612, filed May 11, 1955, and assigned to the same assignee as the present invention.

It will be seen that a novel form of contact means for a luminaire has been provided by this invention which is so made that there is no danger of arcing, burning, or pitting or otherwise damaging the contact means of either the globe assembly or the stationary housing assembly during closing and opening of the globe assembly.

Although this invention has been described in considerable detail, it is to be understood that such description is intended to be illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A luminaire comprising a stationary housing assembly and a movable globe assembly hingedly joined thereto, said stationary housing assembly having an insulating terminal block provided with stationary contact means, said globe assembly having an insulating, lamp-receiving socket provided with knife blade contact means for electrical connection to the stationary contact means when said globe assembly is in closed position with reference to said housing assembly, said stationary contact means comprising two pairs of resilient fingers, the fingers of each pair of resilient fingers being urged towards each other and normally held in contact with each other when said globe assembly is in open position with reference to said housing assembly, the contact points of the respective pairs of fingers being spaced apart, said knife blade contact means successively spreading the resilient fingers of said housing assembly apart to separate said fingers in sequence when said globe assembly is rocked into closed position, whereby at no time during either the opening or closing movement of the globe assembly is the circuit interrupted.

2. A luminaire comprising a stationary housing assembly and a movable globe assembly hingedly joined thereto, said stationary housing assembly having an insulating terminal block provided with stationary contact means, said globe assembly having an insulating, lamp-receiving socket provided with knife blade contact means for electrical connection to the stationary contact means when said globe assembly is in closed position with reference to said housing assembly, said stationary contact means comprising two pairs of resilient fingers, the fingers of each pair of resilient fingers being urged towards each other and normally held in contact with each other when said globe assembly is in open position with reference to said housing assembly, said knife blade contact means successively spreading the resilient fingers of said housing assembly apart to separate said fingers in sequence when said globe assembly is rocked into closed position, whereby the fingers of one pair of contact fingers of the stationary housing assembly are in contact with each other while the knife blade contact means is in contact with, and has spread the other pair of contact fingers of the housing assembly during either opening or closing motion of globe assembly with reference to the housing assembly.

3. A luminaire comprising a stationary housing assembly and a movable globe assembly hingedly joined thereto, said stationary housing assembly having an insulating terminal block provided with stationary contact means, said globe assembly having an insulating, lamp-receiving socket provided with knife blade contact means for electrical connection to the stationary contact means when said globe assembly is in closed position with reference to said housing assembly, said stationary contact means comprising two pairs of resilient fingers, the fingers of each pair of resilient fingers being urged towards each other and normally held in contact with each other when said globe assembly is in open position with reference to said housing assembly, the contact points of the respective pairs of fingers being spaced apart, said knife blade contact means successively spreading the resilient fingers of said housing assembly apart to separate said fingers in sequence when said globe assembly is rocked into closed position, whereby the fingers of one pair of contact fingers of the stationary housing assembly are in contact with each other while the knife blade contact means is in contact with, and has spread the other pair of contact fingers of the housing assembly during either opening or closing motion of the globe assembly with reference to the housing assembly, said knife blade contact means consisting of a pair of resilient fingers urged towards each other, and a cutout held between the resilient fingers of said knife blade contact means.

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