March 22, 1949. C. W. FLOOD, JR 2,464,971

LUMINAIRE AND TRANSFORMER HOUSING

Filed April 26, 1946

Fig. 1.

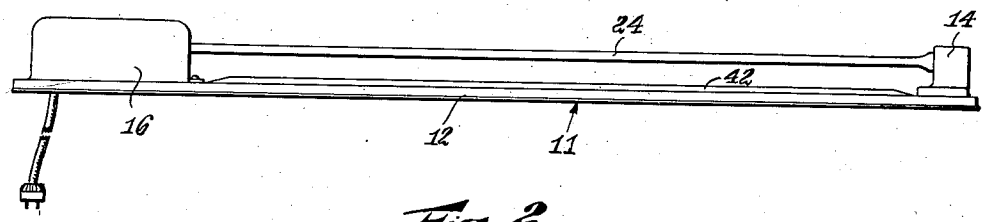
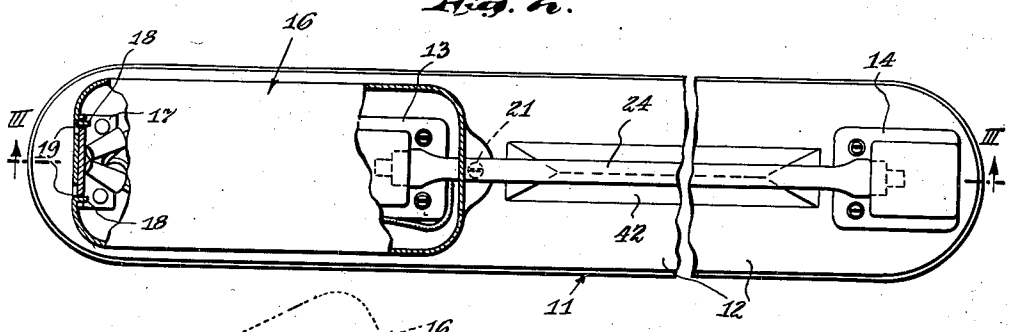


Fig. 2.



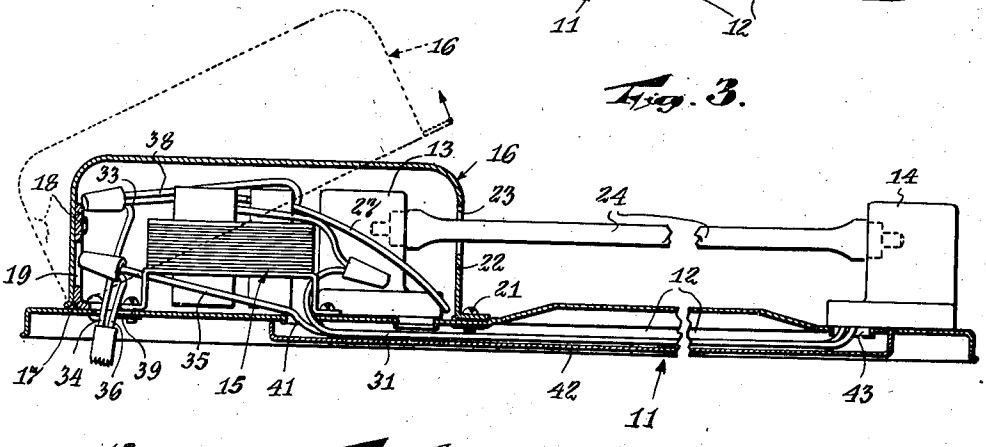
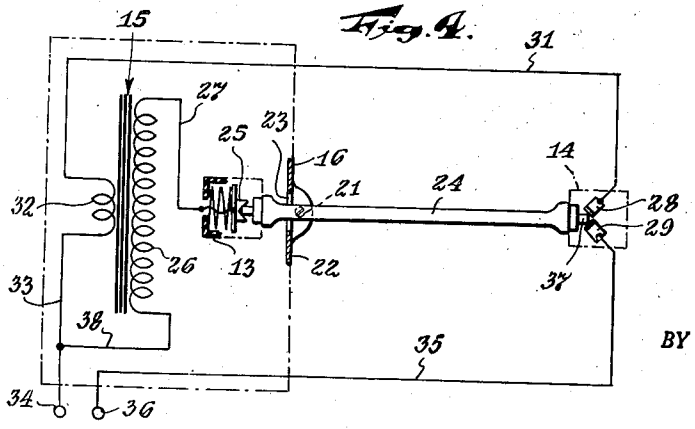


Fig. 3.

Fig. 4.



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LUMINAIRE AND TRANSFORMER HOUSING

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7 Claims. (Cl. 315—57)

1

This invention relates to discharge devices and, more particularly, to a luminaire and transformer housing, for such devices and including safety features.

The principal object of my invention, generally considered, is to provide a luminaire and transformer housing for discharge devices so designed that the housing encloses one lamp holder and is provided with a hole to permit insertion of the lamp, whereby when the lamp is in place the secondary circuit is completed and it is necessary to remove the lamp before the transformer housing can be lifted, thereby providing for automatically breaking the primary circuit.

Another object of my invention is to provide a luminaire for discharge devices formed with a single resiliently mounted contact in a socket enclosed in a transformer housing, and a rigid double-contact socket acting as a switch in the primary circuit to be closed by a discharge device contact.

A further object of my invention is to provide such a housing for high voltage transformers on a discharge lamp luminaire, that the primary circuit must be broken if the housing is to be removed.

A still further object of my invention is to avoid exposing open core and coil transformers and lead splices of discharge device luminaires, while having a housing enclosing one socket of the device with a hole in one wall thereof for insertion of said device, the latter completing both primary and secondary circuits when in position.

Other objects and advantages of the invention, relating to the particular arrangement and construction of the various parts, will become apparent as the description proceeds.

Referring to the drawing:

Fig. 1 is an elevational view of a luminaire and transformer housing holding a discharge lamp.

Fig. 2 is a fragmentary plan of the apparatus illustrated in Fig. 1 with portions of the housing in horizontal section.

Fig. 3 is a fragmentary vertical sectional view of the luminaire and housing assembly, on the line III—III of Fig. 2, in the direction of the arrows.

Fig. 4 is a wiring diagram.

Luminaires for discharge devices, such as germicidal ultra-violet-generating tubes manufactured by the assignee of the present application, have in the past been unprovided with means whereby the secondary circuit is de-activated when the transformer housing is removed. This involves a hazard in the case of open core and coil transformers which would be exposed, as would splices between the transformer and leads.

2

In accordance with my invention, the transformer housing is designed so as to also enclose one lamp socket or holder, with a hole in the transformer housing to permit insertion of one end and contact terminal of the lamp. When the lamp is in place the secondary circuit is completed and it is necessary to remove the lamp before the transformer housing can be lifted, the other contact terminal of the lamp functioning as a switch, automatically breaking the primary circuit upon lamp removal.

Referring to the drawing in detail, like parts being designated by like reference characters, there is shown in Figs. 1, 2 and 3 a luminaire and transformer housing generally designated 11, and comprising a base 12, desirably formed of sheet metal and on which are mounted sockets 13 and 14. Adjacent the socket 13 is mounted a high voltage transformer 15. Enclosing said transformer, as well as the socket 13 and the splices between the transformer and leads, is a housing 16, also desirably formed of sheet metal, one end of which may interlock with bracket 17, upstanding from the base 12, as by having projections 18 fitting slots 19 therein, and the other end of which may be secured to the base as by means of a set screw 21.

The wall 22 of the housing 16, adjacent the socket 14, is apertured, as indicated at 23, to receive one end portion of an elongated discharge device or "Sterilamp" 24, the socket 13 being, as diagrammatically illustrated in Fig. 4, provided with a resilient or spring mounted contact 25 connected to one terminal of the transformer secondary winding 26 by means of conductor 27, whereby the contact 25 may be pushed in sufficiently that the other end of the device 24 may clear the exterior of the socket 14, adapting the end contact thereof to be inserted to bridge the fixed and spaced contacts 28 and 29 therein. The contact 28 is connected by conductor 31 to one terminal of the primary winding 32, the other terminal of which is connected by conductor 33

to one terminal 34 to a source of power. The other contact 29 is connected by conductor 35 to the other terminal 36 to said source of power. In this way, the contact terminal 37 on the device 24 acts as a switch in the primary circuit to the transformer 15. The circuit is completed as by connecting the other terminal of the secondary winding 26 to the terminal 34 by conductor 38.

As will be seen particularly from Fig. 3, the conductors to the terminals 34 and 36 may pass out through an aperture 39 in the base of the luminaire, while the conductors 31 and 35 may pass to the spaced contacts 28 and 29, respectively, first through an aperture 41 in said base and then through a preferably sheet metal housing or conduit 42, secured to the lower surface of the base, and finally up through aperture 43 in said base to the contacts of said socket 14.

From the foregoing disclosure, it will be seen that the transformer housing 16 cannot be removed while the device is in place, because the latter passes through a wall thereof. This, of course, means that the device 24 must first be entirely removed, thereby necessarily not only breaking the primary circuit through contacts 28 and 29, but breaking the secondary circuit through the device itself. This insures that the parts enclosed by the housing are de-energized prior to housing removal, thereby complying with the requirements of the fire underwriters, and generally providing a safe fixture.

Although a preferred embodiment of my invention has been disclosed, it will be understood that modifications may be made within the spirit and scope of the appended claims.

I claim:

1. A luminaire and transformer housing comprising complementary discharge lamp sockets, a transformer mounted adjacent one of said sockets and comprising primary and secondary windings, said socket having a contact, a transformer housing to cover said socket and formed with a wall aperture through which one end portion of a lamp passes on its way to said contact, a conductor connecting one terminal of said secondary winding to said contact, the other socket having a pair of contacts adapted to be bridged by a lamp contact terminal, and conductors connecting one terminal of said primary winding and the other terminal of said secondary winding to one terminal to a source of power, one of said other socket contacts to the other terminal to said source of power, and the other contact of said other socket to the other terminal of said primary winding.

2. A luminaire and transformer housing comprising a base, discharge lamp sockets Nos. 1 and 2 mounted thereon, a transformer mounted adjacent socket No. 1 and comprising primary and secondary windings, socket No. 1 having a resiliently mounted contact, a transformer housing to cover said socket and formed with a wall aperture through which one end portion of a lamp passes on its way to said contact, one terminal of said secondary winding being connected to said contact, socket No. 2 having a pair of fixed contacts adapted to be bridged by a discharge lamp contact terminal, and conductors connecting one terminal of said primary winding and the other terminal of said secondary winding to one terminal to a source of power, one of said fixed contacts to the other terminal to said source of power, and the other fixed contact to the other terminal of said primary winding.

3. A luminaire and transformer housing comprising complementary discharge lamp sockets, one of which has a resiliently mounted contact and the other a pair of fixed spaced contacts, a transformer mounted adjacent the socket with the resiliently mounted contact, and comprising primary and secondary windings, a transformer housing to cover said socket and formed with a wall aperture through which one end portion of a lamp passes on its way to said contact, a conductor connecting one terminal of said secondary winding to said contact, a contact terminal of the lamp when in place bridging the spaced contacts of the other socket, and conductors connecting one terminal of said primary winding and the other terminal of said secondary winding to one terminal to a source of power, one of said other socket contacts to the other terminal to said source of power, and the other contact to the other terminal of said primary winding.

4. A luminaire and transformer housing comprising complementary discharge lamp sockets, a high voltage transformer mounted adjacent one of said sockets and comprising primary and secondary windings, said socket having a contact, a housing for said socket and transformer, said housing having an aperture in a side wall through which an end portion of an associated discharge lamp passes, a conductor connecting one terminal of said secondary winding to said contact, the other socket having a pair of contacts to be bridged by a contact terminal of said lamp, and conductors connecting one terminal of said primary winding and the other terminal of said secondary winding to one terminal to a source of power, one of said other socket contacts to the other terminal to said source of power, and the other of said pair of contacts to the other terminal of said primary winding, whereby said housing cannot be taken off without removing the discharge lamp and breaking the circuit to the primary winding.

5. In a luminaire assembly, an electrical discharge device comprising an elongated tube, a contact at each end of said tube, and a socket for each contact, one of said sockets comprising a pair of spaced contacts bridged by one of the contacts of said tube, a transformer adjacent the other socket, and a housing for said transformer, said tube passing through a hole in a wall of said housing, and the spaced contacts being in the power circuit to the primary winding of said transformer, whereby the housing can be taken off only after the discharge device has been removed, breaking said power circuit.

6. In a luminaire assembly, an electrical discharge device comprising an elongated tube, a contact at each end of said tube, and a pair of sockets, one for each contact, one of said sockets being unenclosed and comprising a pair of contacts bridged by a tube contact, a transformer adjacent the other socket, and a housing for said transformer, said tube passing through a hole in a wall of said housing, and the bridged contacts being in the power circuit to the primary winding of said transformer, whereby the housing can be taken off only after the discharge device has been removed, breaking said power circuit.

7. In a luminaire assembly, an electrical discharge device comprising an elongated tube, a contact at each end of said tube, and a socket for each contact, one of said sockets comprising a pair of spaced contacts bridged by one of the

contacts of said tube, a transformer adjacent the other socket, and a housing for said transformer, said other socket having a single contact resiliently mounted, and the housing having a hole in a side wall, so that the tube may be positioned by passing it through said hole to engage and push inward said resiliently mounted contact until the other end of said tube can be fitted into said other socket with the end contact of said tube bridging said spaced contacts, and said spaced contacts being in the power circuit to the primary winding of said transformer, whereby said socket acts as a switch breaking the power circuit when the discharge device is removed and the housing can be taken off only after removal of said device.

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