Sept. 28, 1937. C. H. BISSELL 2,094,394

EXPLOSIONPROOF LIGHTING FIXTURE

Filed Nov. 5, 1936

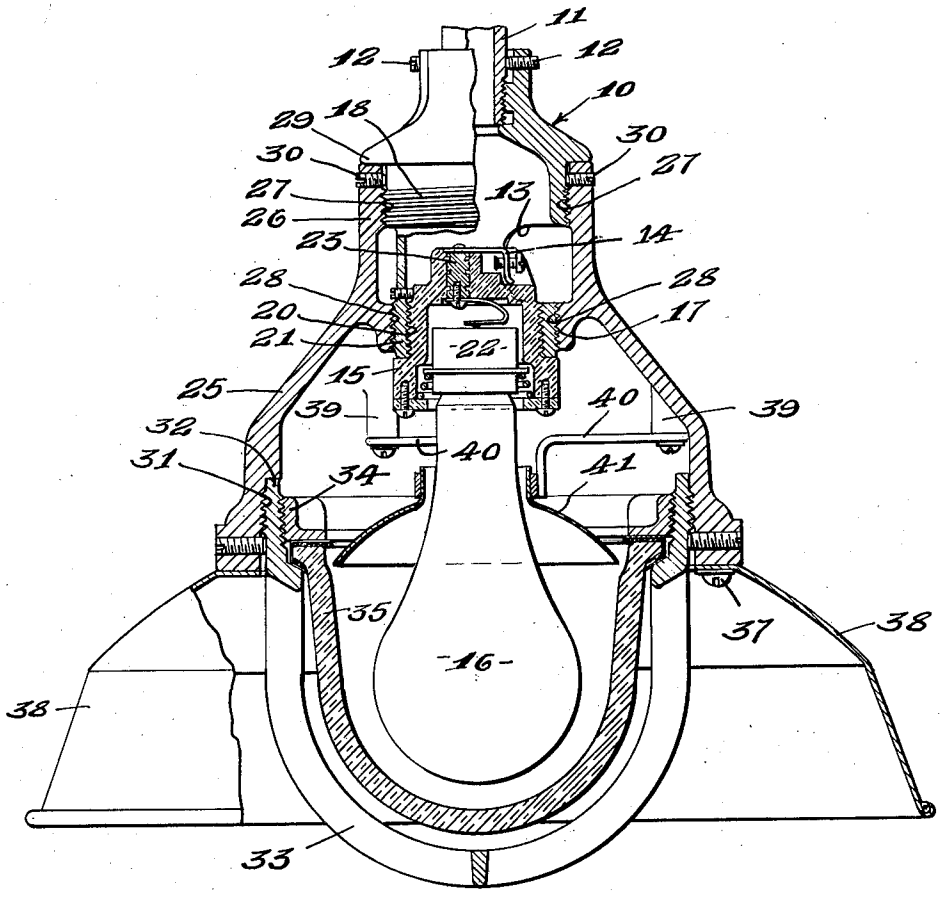


Fig-1

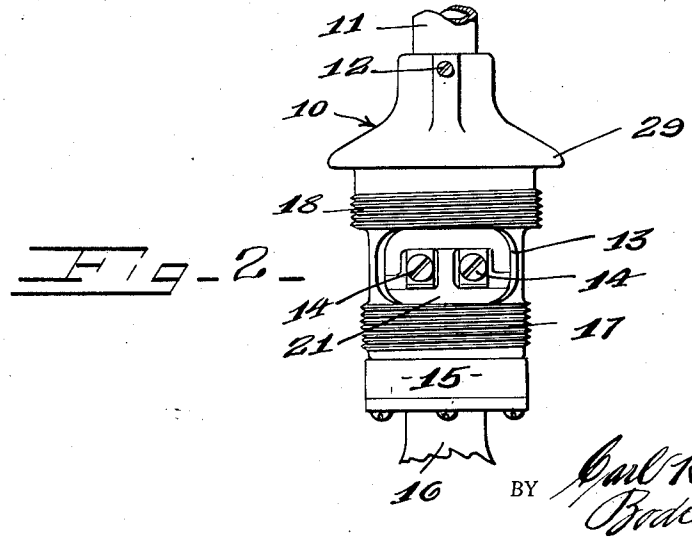


Fig-2

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Patented Sept. 28, 1937

2,094,394

UNITED STATES PATENT OFFICE

2,094,394

EXPLOSIONPROOF LIGHTING FIXTURE

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Application November 5, 1936, Serial No. 109,340

5 Claims. (Cl. 240—11.2)

This invention relates to explosion proof lighting fixtures, and has as an object a particularly economical and efficient construction whereby the fixture may be conveniently installed and the various elements thereof assembled in flame tight relationship, without the necessity of using sealing compound, or special tools.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a vertical, sectional view of the lighting fixture with parts shown in elevation.

Figure 2 is a side elevational view of the supporting member of the fixture.

The invention comprises generally, a tubular supporting member formed at one end to receive the feed wires for the fixture, and preferably provided with means for attachment to a conduit enclosing the wires. This tubular supporting member is provided with a side opening to permit access to the interior of the tubular supporting member essentially for the purpose of connecting the feed wires to the terminals of the lamp receptacle, which is detachably secured to the lower end of the tubular support.

The fixture further includes a bell shaped body, the upper end of which is provided with an internal surface complemental to the external surface on the supporting member and which, when the body is attached to the supporting member, overlaps and forms a flame tight closure for the opening in the side wall thereof. The fixture is completed by a globe detachably secured in the open end of the body in flame tight relationship thereto. The fixture may be supplied with a suitable guard and shade, if desired.

Universally, the construction of explosion proof lighting fixtures is such that the lamp receptacle divides the fitting into two compartments, an upper compartment in which the lead wires are brought in and attached to the terminals of the receptacle, and a large lower compartment in which the lamp is arranged. These compartments are usually sealed off from each other by the use of a sealing compound inserted in the upper compartment in the molten state.

Inasmuch as lighting fixtures, including those of the explosion proof type, are usually suspended at appreciable heights, any construction which tends to convenience of installation, assembly and disassembly for repairs, is of great importance and advantageous. It will be observed, as the description proceeds, that a lighting fixture constructed in accordance with my invention can be most conveniently and readily installed and assembled in flame tight relationship by any electrical worker not particularly versed in technicalities of explosion proof fittings.

The fixture is suspended, or supported, by a supporting member 10 which is of general tubular formation. The upper end of the supporting member 10 is of reduced diameter, and as here shown is provided with an internally threaded bore for attachment to the end of the conduit 11 enclosing the feed wires to the fixture. One or more set screws 12 may be employed to prevent the supporting member from becoming loosened on the end of the conduit. In the embodiment here shown, the supporting member is provided in one side with an opening 13, the purpose of which is to provide access to the interior of the supporting member for the purpose of attaching or connecting the feed wires to the terminals 14 on lamp receptacle 15. The lamp receptacle may be of any suitable form or construction, and is detachably secured to the lower end of the supporting member in flame tight relationship thereto and arranged to position the lamp 16 in the open end of the body of the fixture.

The body and the supporting member are provided with complemental surfaces coacting to form flame tight joints between the body and the supporting member with the upper end of the body overlapping the opening 13 and forming a flame tight closure for the same.

In the embodiment here shown, the major portion of the supporting member 10 is threaded externally. This may be a continuously threaded surface, or a running thread interrupted from a lower externally threaded portion 17 arranged below the opening 13 and an upper threaded portion 18 arranged above the opening.

As here shown, the lower end of the supporting member 10 is threaded internally, as at 20, and the lamp receptacle comprises a body 21 formed of insulating material and provided with complemental external threads, whereby the lamp receptacle 15 may be screwed into the lower end of the tubular support member 10, and is thus detachably secured to the same in flame tight relationship thereto. The lamp receptacle 15 is provided with a screw shell 22 and a central contact, both of which are connected to the terminals 14 through studs 23 inserted in the body 21 when the same is cast. The particular lamp receptacle here shown forms, per se, no part of this

invention. As previously stated, any suitable lamp receptacle may be employed in so long as it is mounted in, or at the lower end of, the supporting member 10 and forms a flame tight closure for the interior of the same.

It will be observed from the description thus far that the tubular supporting member 10 constitutes a comparatively small portion of the fixture, and is conveniently attached to the end of the conduit 11. The lamp receptacle 15 may be attached to the supporting member previously, or after the attachment of the support to the conduit, and the fixture is conveniently wired, and the feed wires conveniently connected to the receptacle terminals 14 through the opening 13.

The body 25 is substantially bell shaped and the upper end portion 26 of the same is formed with internal threads complemental to the external threads on the supporting member 10, and the top portion 26 is of such length that it overlaps and forms a flame tight closure for the opening 13 when the body 25 is screwed onto the supporting member.

As here shown, the inner surface of the upper end portion 26 is provided with upper and lower internally threaded portions 27, 28, which are spaced apart axially in proportion to the spacing of the externally threaded portions 17, 18, on the supporting member 10, and these complemental threaded portions 17, 28, 18, 27 form flame tight joints between the interior of the supporting member and the interior of the lamp chamber of the fitting, and also with the outer atmosphere.

With this particular construction, it will be understood that the threads 17, 18 and 27, 28, are of the same pitch, and are in pitch. Or, in other words, the external threads on the supporting member and the internal threads in the end portion 26 of the body are of the same pitch and constitute a continuously running thread, whereby the body is threaded onto the supporting member, as indicated in Figure 1.

In order to minimize the time required to thread the body onto the supporting member, the upper portion of the support and the body is of slightly greater diameter than the complemental lower portions. Or, in other words, the internally threaded upper end of the body clears the externally lower threaded portion 17 of the supporting member, whereby the threaded portions 17, 28, engage at the same time as the threaded portions 18, 27, and accordingly, it is only necessary to rotate the body relative to the support member approximately six revolutions to secure the body to the support member. Means cooperable with the body and the tubular support to maintain the complemental surfaces between the same in flame tight relationship is here shown in the nature of one or more set screws 30.

As here shown, the lower or open end of the body is threaded internally as at 31 to receive the externally threaded flange 32 of the guard 33. The flange 32 is also threaded internally to receive a retaining ring 34 which, when screwed in place, clamps the gasketed flange of the glass globe 35 to the frame 32, and the globe and guard unit thus forms a flame tight closure for the open end of the body.

The lower edge of the body 25 may be tapped to receive a plurality of screws 37 employed to attach a suitable shade 38. The interior of the body may be formed with one or more bosses 39 to which radially extending supports 40 are secured, and which support an auxiliary reflector 41.

The supporting member 10 is preferably provided with a radially extending flange 29 arranged above the upper threaded portion 18 and against which the upper edge of the body member coacts when the body is threaded onto the support. Inasmuch as the complemental threaded surfaces are provided with a thread in pitch, both sets of threads are thus tightened rendering the partitions formed thereby particularly flame tight.

What I claim is:

1. An explosion proof lighting fixture comprising a tubular supporting member formed at its upper end to receive the feed wires, a lamp receptacle secured in the lower end of said supporting member and forming a flame tight closure therefor, said supporting member being provided with an opening in one side thereof to permit access to the interior thereof, a body provided at its upper end with an internal surface coacting with the peripheral surface of said supporting member above and below said opening and forming a flame tight closure for the same, means cooperable with the body and said supporting member for maintaining said surfaces in such coacting relationship, and a globe detachably secured to the open end of the body and forming a flame tight closure therefor.

2. An explosion proof lighting fixture comprising a tubular supporting member provided with means at its upper end for attachment to a conduit, a lamp receptacle secured to the lower end of said member in flame tight relationship thereto and said member being formed with an opening in the side to provide access to the interior thereof, a housing carried by said member, said housing and supporting member being provided with complemental faces arranged below said opening and coacting to form a flame tight partition between the lamp chamber of the body and said opening in the supporting member, and said body and supporting member being provided with additional complemental surfaces arranged above said opening and coacting to form a flame tight partition between said opening and the outer atmosphere, means cooperable with the body and said supporting member for maintaining said complemental surfaces in flame tight relationship, and a globe detachably secured to the lower open end of the body in flame tight relationship thereto.

3. An explosion proof lighting fixture comprising an externally threaded tubular supporting member provided at its upper end with means to receive the feed wires, a lamp receptacle secured in the lower end of said member in flame tight relationship thereto, said supporting member being formed with an opening in one side thereof to permit access to the interior thereof, a body provided at its upper end with an internally threaded bore of greater length than the width of said opening, the threads thereof being complemental with the external threads on said supporting member, whereby said body is threaded upon said supporting member with the upper end of the body overlapping said opening in the supporting member and forming a flame tight closure therefor, and a globe detachably secured in the open end of the body in flame tight relationship thereto.

4. An explosion proof lighting fixture comprising a tubular supporting member provided at its upper end with means for attachment to a con-

duit and being formed with externally threaded portions spaced apart axially and with an opening formed in one side and arranged intermediate said threaded portions, a bell shaped body formed at its upper end with an internally threaded bore, the threads thereof being complemental with the external threads on said supporting member, and said top portion of the body overlapping and forming a flame tight closure for said opening when the body is screwed on said supporting member, a lamp receptacle detachably secured to the lower end of said supporting member and arranged to position the lamp in the body when the same is screwed onto the supporting member, and a globe detachably secured in the open end of the body and in flame tight relationship thereto.

5. An explosion proof lighting fixture comprising a tubular supporting member provided at its upper end with means for attachment to a conduit, and being formed with internal and external screw threads at its lower end, said supporting member being also threaded externally adjacent its upper end and being provided with an opening in one side intermediate said externally threaded portions to permit access to the interior of the member, a bell shaped body formed at its upper end with axially spaced apart concentric bores provided with threads complemental with the externally threaded portions of the supporting member, a guard and globe unit detachably secured to the open end of the housing and forming a flame tight closure therefor, and a lamp receptacle threaded into the internally threaded lower end of said supporting member.

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