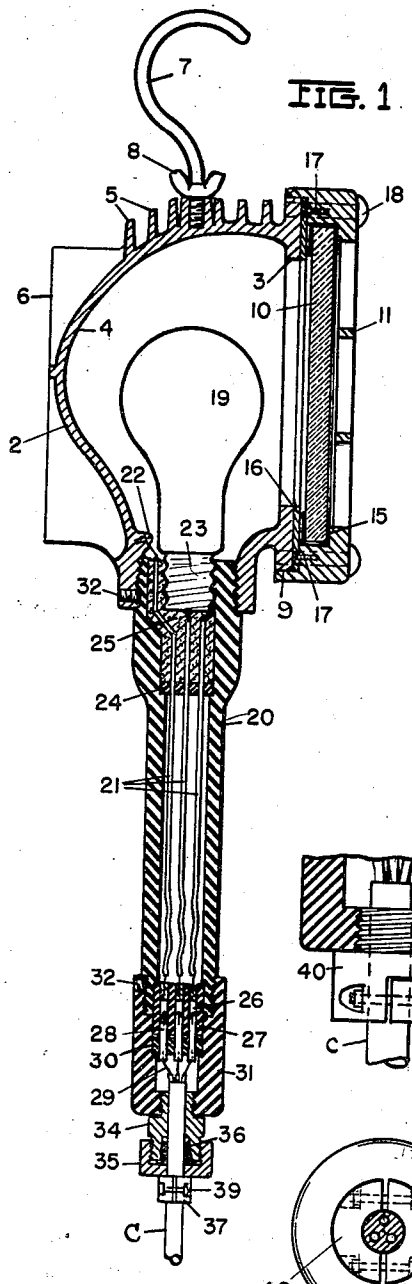
Sept. 8, 1942. E. O. ERICSON 2,295,339

EXPLOSION-PROOF LAMP

Filed Sept. 12, 1940

FIG. 1



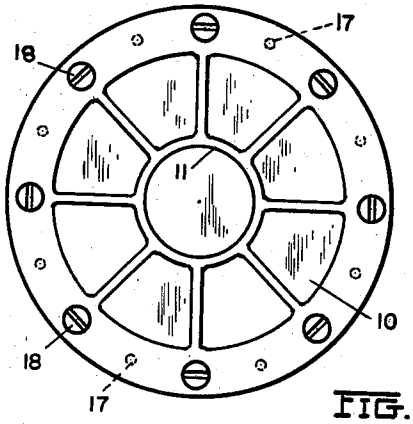


FIG. 5

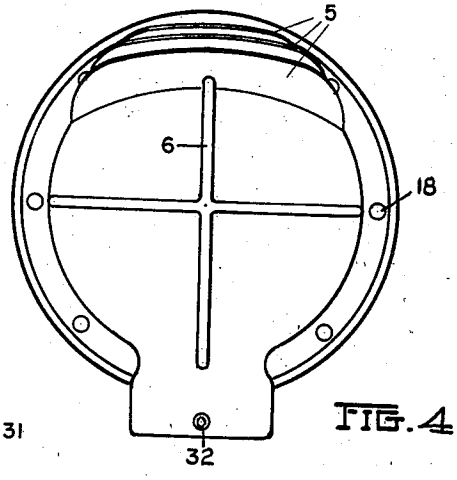


FIG. 4.

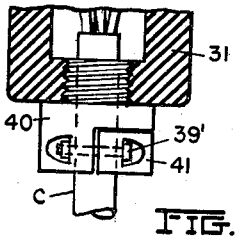


FIG. 2

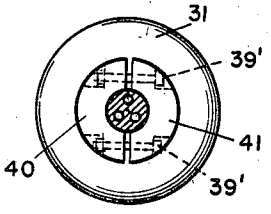


FIG. 3

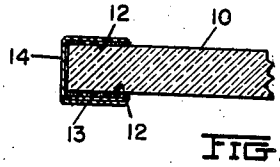


FIG. 6

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Patented Sept. 8, 1942

2,295,339

UNITED STATES PATENT OFFICE

2,295,339

EXPLOSIONPROOF LAMP

Edward O. Ericson, Cleveland Heights, Ohio

Application September 12, 1940, Serial No. 356,514

3 Claims. (Cl. 240—11.2)

Electric lamps of portable character are sometimes required to be used in locations hazardous with explosive vapors, dusts, etc., and with the customary constructions there is a risk involved which cannot always be safety undertaken. In accordance with the present invention however, a construction may be had which is safe and explosion-proof under the most drastic conditions. Efficiency of lighting is also at the same time high.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described, and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is an axial sectional view of an embodiment of the invention; Fig. 2 is a similar view on enlarged scale of a slight modification of the end of the handle; Fig. 3 is an end view of the same; Fig. 4 is a rear elevational view of the housing; Fig. 5 is a front elevational view of the light-emitting window; and Fig. 6 is an enlarged fragmentary sectional detail of the margin of the glass and the sealing means.

Referring more particularly to the drawing, there is shown a housing 2, which is of non-sparking metal, as for instance aluminum, brass, etc., and having a window 3 opening at one side, and a polished or reflector surface 4 opposite thereto. The housing is provided with projections or heat-dissipating ribs 5 whose detail form and extent may be as desired in any given case, and in common therewith the ribs at the rear are of such form, Fig. 4, as to also provide a non-rolling stable support 6 when the lamp is laid down against the floor for instance. Suspending means is provided, as a hook 7, and this is mounted with respect to the housing such as to adjustably permit orienting of the latter to focus the light in any desired direction, and thus a shank or hook may be screw-threaded into the housing and a set nut 8 on the shank permits loosening to adjust the orientation, and then tightening to hold that adjustment.

The window 3 is closed by a sealed glass 10 and a protective grid 11. For sealing, the glass may be provided with soft ring gaskets 12, Fig. 6, as of asbestos, outside and inside, and a soft metal ring gasket 13, as copper, aluminum, etc., inside, and spun over the edges to enclose such assembly of gaskets is a metal sheath 14, for example of aluminum. The glass with the metal sheath is seated in a recess 15 of the grid member 11, and is tightened into place thereagainst by a holding ring 16 secured by suitable means, as screws 17. The assembly of the grid and the glass thus sealed together, is held in turn in tight engagement with the housing, as by the ring face of the latter seating in the recess 9 of the grid member 11 and being held by suitable means, as screw threads in the engaging cylindrical walls at 9 or by face-wise cap screws 18. The glass is thus sealed in the carrying grid member, without possibility of misplacement of the sealing means thereof when removal is necessary for replacement of a lamp bulb 19 for instance. Inexpert opening and closing of the housing accordingly does not prevent the maintenance of an effective seal.

Secured to the housing is a tubular handle 20, hollow to receive conducting wires 21 for the lamp, and a ground connection 22 is also provided on the housing. The wires 21 connecting to the terminals of the lamp socket 23 and the ground pass through a spacing member 24, and the lamp socket and adjacent portions of the wires are backed up with suitable sealing material 25.

The wires 21 have sleeve terminals 26 in an insulative member 27 secured in the end of the handle 20. Adapted to coact with the sleeve terminals 26 are pin terminals 28 secured to the supply wires 29, such that the connection of the latter to the conductors of the lamp assembly may be conveniently made by pushing the pins into the sleeves. An insulative member 30 carries the pin terminals 28, and by suitable orientation-spacing of the pins and the sleeves respectively, mis-matching or making wrong connections is impossible. The connections are covered by a cap 31 of insulative material, and this, as well as the handle may be secured in assembly by set screws 32. A stuffing box between the supply conductor carrying the wires 29 and the cap 31 may be provided, as by members 34, 35 with suitable packing 36 therebetween. A clamp 37 is provided against the conductor C, and this may be of separable members tightened by screws 39. Where desired, the stuffing box may be omitted, and the clamp, Figs. 2 and 3, be abutted directly against the cap 31, the one clamp member 40 being screw-threadedly engaged for instance, and the other clamp member 41 being held by the screws 39'.

Other modes of applying the principle of the invention may be employed, change being made

as regards the details described, provided the features stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. An explosion-proof lamp, comprising a housing of non-sparking metal having a lateral window and a reflector surface opposite, heat radiating fins on said housing, including fins forming also a rear support preventive of rolling, a glass and protective grid on the window of the housing, said glass being sealed by gasket means not disturbed on removal of the glass from the window and including soft gaskets at the inside and outside and metal spun over the edges of the glass and an additional metal ring gasket on one side, a glass-holding ring, screw-threaded means for securing said ring to the grid, screw-threaded means for securing the glass and grid assembly to the housing, an insulating handle secured to said housing, a lamp socket sealed in the inner end of said handle, conductor wires extending in said handle, a ground connection on said housing, sleeve terminals for said conductor wires, feed conductor wires having pin terminals insertable into said sleeves, locating means preventing mis-matching of said terminals, a cap enclosing said terminals, a stuffing box between said cap and the feed conductors, and a clamp about the conductors against the stuffing box.

2. An explosion-proof lamp, comprising a housing having a window and a reflector surface opposite, heat radiating fins on said housing, including fins forming also a rear support preventive of rolling, a glass and protective grid on the window of the housing, said glass being sealed by gasket means not disturbed on removal of the glass from the window and including soft gaskets at the inside and outside and metal spun over the edges of the glass and an additional metal ring gasket on one side, a glass-holding ring, screws for securing said ring to the grid, screws for securing the glass and grid assembly to the housing, an insulating handle secured to said housing, a lamp socket sealed in the inner end of said handle, conductor wires in said handle, feed conductors extending into said handle, slip pin and sleeve connectors between said conductor wires and said feed conductors, a cap enclosing said slip connectors, and a clamp against said cap and the feed conductors.

3. An explosion-proof lamp, comprising a housing of non-sparking metal having a lateral window and an integral reflector surface opposite, combined means for positioning the light beam therefrom in optional vertical or lateral positions and for eliminating heat, embodying integral heat radiating fins extending outwardly from said housing, including intersecting fins on the back that terminate in a plane to form a rear support, a glass and protective grid on the window of the housing, said glass being sealed by gasket means not disturbed on removal of the glass from the window, a glass-holding ring, an insulating handle screw-threadedly secured to said housing, and a set-screw preventing turning thereof.

EDWARD O. ERICSON.