Feb. 10, 1948. H. L. GOEBEL 2,435,678

LIGHTING FIXTURE

Filed Jan. 24, 1944 2 Sheets-Sheet 1

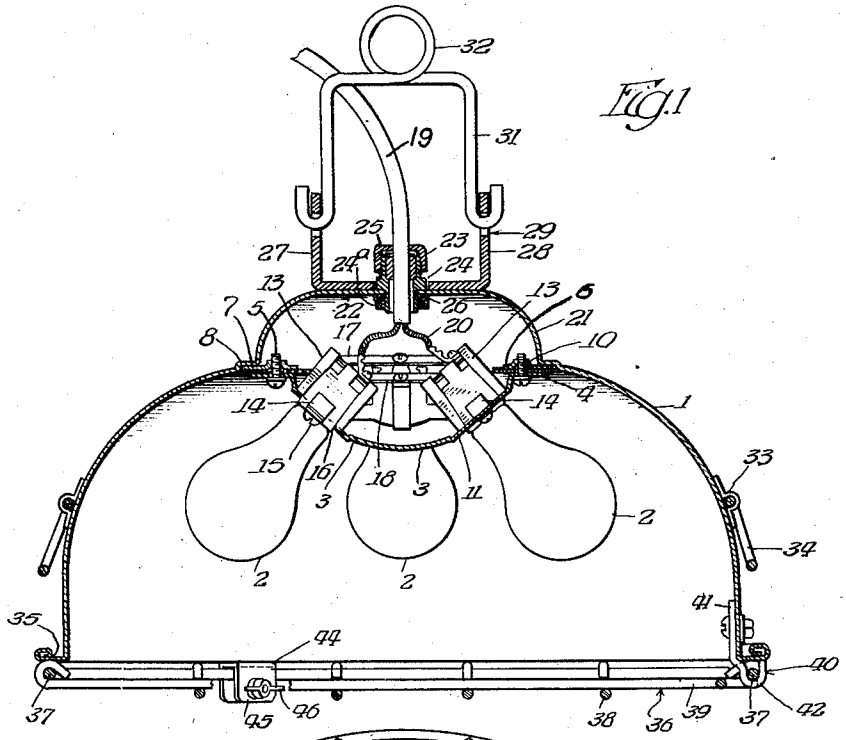


Fig. 1

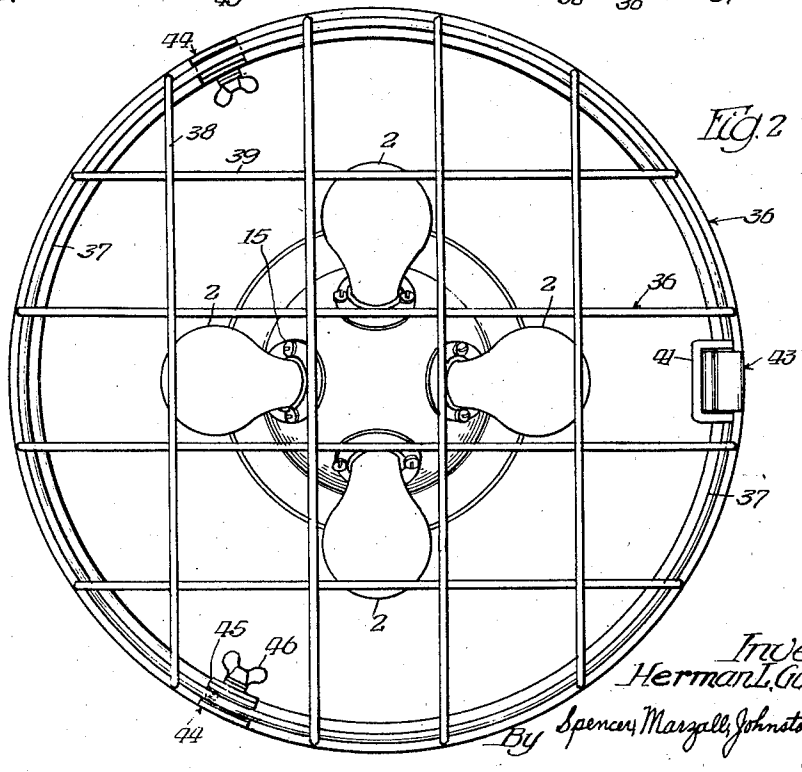


Fig. 2

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Fig. 3

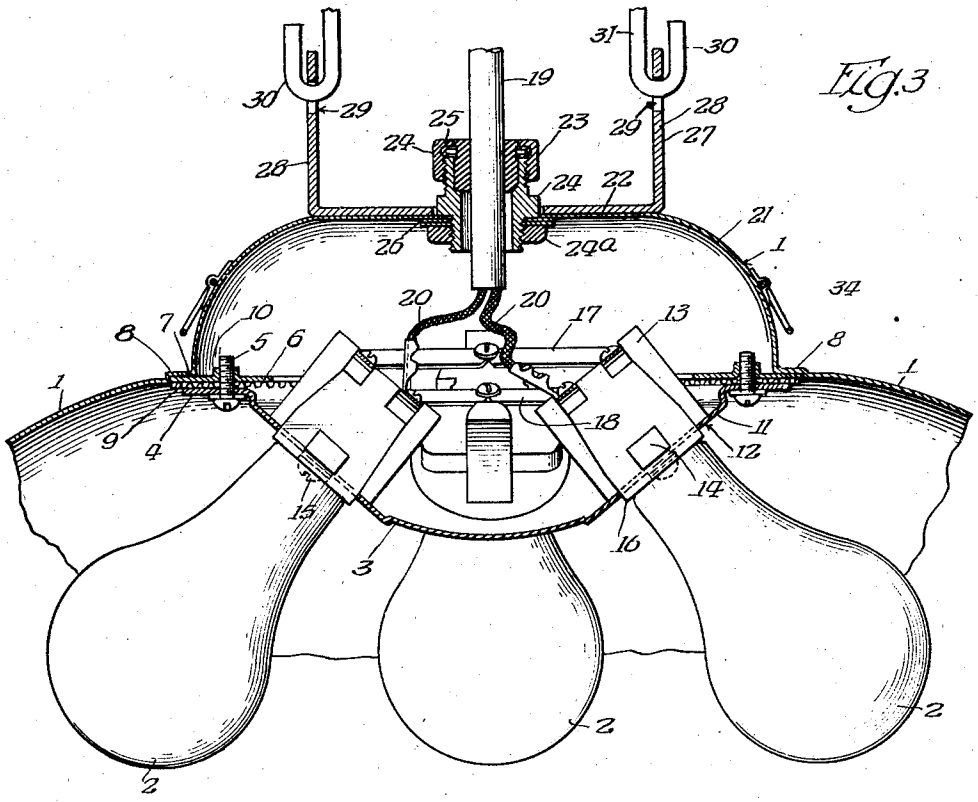


Fig. 5

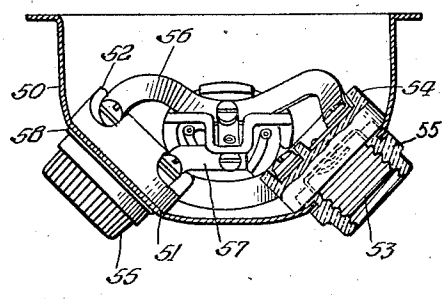
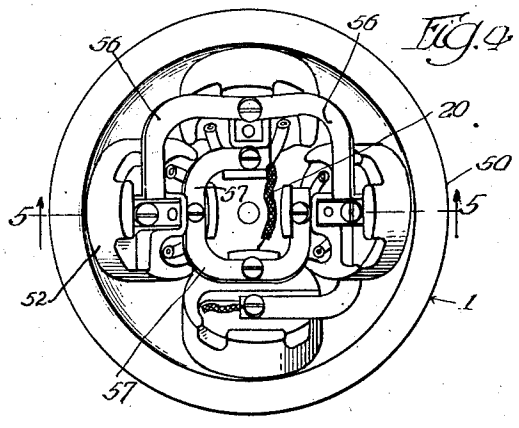


Fig. 4



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LIGHTING FIXTURE

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This invention relates to a light fixture which is all-inclusive and may be regularly moved from one position to another, and is particularly adaptable for use on ships and boats for loading and unloading cargo in the holds of ships and on the dock. The fixture, of course, may be used advantageously at other places and for other uses.

The primary object of the present invention is to provide a strong, rugged lighting fixture of the cluster type whereby the electric contacts are properly sealed against the weather, are strong and durable, and which can be readily moved or shifted from one position to another, as well as being adapted for hanging vertically, or in a horizontal position.

Another important object of the invention is to provide a light for the uses and purposes set forth whereby there is a light cluster secured in a tight, weatherproof manner to the shade or reflector in which the cluster is mounted.

A further object of the invention resides in a light fixture of the cluster type wherein the parts are attached and arranged securely in a predetermined position to effect universal application of the fixture and to protect the lamps and the electrical connections.

A still further object is the provision of a new and improved lighting fixture particularly adaptable for use in connection with cargo ships or the like whereby a strong, durable lighting fixture is provided to withstand rough usage without affecting or damaging the various parts.

Other important objects of the invention reside in the provision of the particular adaptation, construction and arrangement of the parts, the manner of securing the parts in position with respect to a reflector, a new and improved guard to protect the lamps, new and improved hingedly mounted hanger supports to permit the fixture to be hung in various positions, as well as the particular arrangement and construction of the lighting cluster itself.

Numerous other objects and advantages will be apparent throughout the progress of the following specification.

The accompanying drawings illustrate a selected embodiment of the invention and the views therein are as follows:

Fig. 1 is a detail sectional view of the improved lighting fixture and embodying the invention;

Fig. 2 is a detail bottom plan view;

Fig. 3 is a detail sectional view similar to Fig. 1 but on a greatly enlarged scale to show the electrical connections to the light cluster;

Fig. 4 is a detail top plan view of a modified

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form of light cluster showing the manner in which lamp sockets may be secured to the support; and

Fig. 5 is a detail sectional view on the line 5—5 of Fig. 4, showing the manner in which the individual light sockets are electrically connected.

The particular lighting fixture herein disclosed for the purpose of illustrating the invention comprises a reflector 1 which is so constructed and arranged to diffuse properly the light rays emitted from the lamps 2. The lamps 2 are arranged in a cluster, that is, attached to a unitary element so that the cluster as a whole may be electrically connected and secured properly to the reflector 1. The lamps 2 which form the cluster are operatively supported by a concaved dish-shaped support or housing 3 which is provided with an annular flange 4 for application by means of screws or other fastening means 5 to a ring 6. The ring 6 is spot welded at 7 to an annular offset portion 8 formed on the reflector 1. A gasket 9 is interposed between the annular flange 4 and the ring 6, as clearly shown in Fig. 3. The ring 6 may be punched to provide a struck-out portion 10 which is threaded to receive threadedly the holding means 5.

The dish-shaped element 3 is provided with a plurality of flattened surfaces 11 having openings 12 provided therein, there being as many openings 12 as there are to be lamps 2. While the drawings show four lamps 2, it is to be understood that the construction may be varied to include a greater or lesser number of lamps. Within the dish-shaped housing or support 3 there are mounted a plurality of sockets 13, and these sockets are arranged to engage the inside of the flat surfaces 11, there being attaching ears 14 provided on the sockets to receive screws or other fastening means 15 for locking the individual sockets to their respective flat portions 11 of the dish-shaped member 3. Each socket 13 is provided with a neck 16 which is adapted to extend through its respective opening 12 a slight distance so that when each socket 13 is locked in place by the fastening means 15, the outer face of the socket is fitted tightly and securely to the flat part 11 with a small part of the socket member extending a short distance beyond the outer edge of the flattened surface 11, as indicated at 16, Fig. 3. The sockets are therefore securely and tightly connected to the member 3 with the outer faces of the socket tightly and snugly engaging the inside of the flat surfaces 11, the screws or fastening means 15 having their heads extending exteriorly of the dish-shaped member 3 so that

they may be readily tightened in place from the outside of the member.

The sockets 13 are electrically connected by means of bars or strips 17 and 18. A bar or strip 17 is electrically connected to the screw threaded shell of each socket member 13, Fig. 3, and the other bar or strip 18 is electrically connected to the central contact of each socket member 13.

An electric cable 19, Fig. 3, preferably having an outer rubber sheath and containing the electrical conductors 20, is electrically connected to the bars or strips 17 and 18 so as to supply electric current to each of the sockets 13 and their co-operating lamps 2.

The shade or reflector 1 includes an upper bell-shaped portion 21, Fig. 3, which is preferably an integral part of the reflector 1 and extends inwardly of the integral flange 8. The bell-shaped portion 21 and the dish-shaped portion 3 provide a compartment of considerable space in which the sockets 13 are mounted and in which all the electrical connections are made.

The cable 19 is connected in a weatherproof manner to the upper flat surface 22, Fig. 3, of the bell-shaped part 21 of the reflector, there being a locking element 23 to engage snugly the cable 19 and the flat part 22 so as to make a weatherproof connection between the light fixture and the conductor carrying cable 19. The member 23 may comprise a plurality of interlocking and interfitting screw members including a hexagonal part 24 and weatherproof tightening glands 25 and washers 26. The member 23 is also so constructed and arranged so that tightening thereof securely locks the cable in position and acts as a strain relief, so that when there is any pull on the cable 19 it will not be transmitted to the conductors 20.

A U-shaped bracket or strap 27 is fastened to the upper flat surface 22 of the bell-shaped member 21 in any convenient manner, such as by welding. This U-shaped member 27 provides oppositely disposed upstanding ears 28, each having a hole 29 through which the ends 30 of a support 31 extend. The ends of the support 31 are bent upwardly as they protrude through the holes 29 so as to provide a swinging or pivotal connection between the support 31 and the U-shaped bracket or strap 27, whereby the lighting fixture may be supported or hung. The support 31 may comprise a single piece of heavy wire or rod material which is bent to provide a circular eye 32. The circular eye 32 is adapted to receive any suitable support for hanging or suspending the fixture. The U-shaped member 27 is provided with a hexagonal cut-out to form a socket into which the hexagonal part 24 of the member 23 is received, whereby a locking nut 24a may be tightened without causing rotation of the various component parts of the member 23.

Oppositely disposed straps 33 may be mounted exteriorly of the body of the shade 1, and these straps 33 support a ring 34, whereby the fixture may be supported or suspended in a horizontal position.

The lower edge of the shade 1 may be flattened to provide a relatively flat integral annular ring or rim 35 entirely about its lower periphery to co-operate with a lamp guard 36. The lamp guard 36 comprises a circular ring 37 made of relatively heavy wire or thin round bar stock with a plurality of cross wires 38 and 39 welded at their intersection, Fig. 2. The ends of the wires 38 and 39 may be bent around the circular wire 37, as clearly shown in Fig. 1. This guard 36 is so constructed that the circular wire 37 will lie against the flat annular surface 35 of the reflector. The guard 36 is hingedly mounted at 40 to the reflector 1. This hinged mounting 40 comprises a U-shaped member 41 having its ends bent in the form of hooks 42 to receive the circular wire 37. A member 43, Fig. 2, is secured to the circular wire 37 and fits in between the legs of the member 41 so as to prevent creeping movement of the guard with respect to the lamp shade. By the use of the hinged member 41 the guard 36 is hingedly connected to the bottom of the shade 1. The guard 36 is locked to the shade by means of locking members 44 spaced 120 degrees apart.

Each locking member 44 comprises a U-shaped member 45 having its legs extending downwardly, the U-shaped member being rigidly connected to the flattened annular rim portion 35 of the shade. The downwardly extending legs of the U-shaped member 45 are adapted to straddle the circular wire 37, and a set screw 46 passes through the legs of the U-shaped member below the lower edge of the circular wire 37 so as to lock the circular wire 37 between the thumb screw 46 and the attached U-shaped member 45. The thumb nut and its engagement with the spaced legs of the member 45 is such that upon loosening the thumb screw a sufficient distance the guard 36 may be swung outwardly on its hinge 40. It is desirable that the wing screw 46 extend inwardly so as to prevent any parts extending beyond the periphery of the shade.

In the modification shown in Figs. 4 and 5 the cluster assembly may comprise a dish-shaped member 50 having spaced flat portions 51 for the socket members 52. The socket members may be of a two-part construction whereby the threaded shell 53 is secured to the inner part 54 of the socket member. The exteriorly threaded shell 53 extends outwardly through the openings provided in the member 50, and an exterior, internally threaded member 55 has threaded engagement with the outside of the shell 53 so that when the member 55 is screwed on the outside of the shell it will lock the two parts 54 and 55 together against the member 50, as clearly shown in Fig. 5. The socket members 52 are electrically connected by rods or bars 56 and 57, Fig. 5. Electrical conductors, not shown, are electrically connected to the bars 56 and 57 for supplying electric current to the socket members in which light globes 2 threadedly engage. A washer element 58 may be inserted between the two parts 54 and 55, as shown in Fig. 5, so as to provide a tight joint between each socket member and its supporting dish-shaped member 50, Figs. 4 and 5.

The invention provides an efficient and rugged light element adapted for rough usage, and particularly to provide light for loading and unloading cargo on ships and boats. The device is adapted to be readily assembled and economically manufactured. The parts are so constructed that they will withstand rough usage without becoming damaged, and all the parts are properly protected. Also, the cluster element in connection with the shade is so constructed and proportioned so as to dissipate heat readily.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention or sacrificing any of its advantages, and the right is hereby reserved to make all such changes as fairly fall within the scope of the following claims.

The invention is hereby claimed as follows:

1. An electric light fixture comprising a reflector member at its lower end and a bell-like member at its upper end, the two members being integrally connected by an annular flange, a ring welded to the said flange, a dish-shaped member having a peripheral flange located below the said ring, fastening means passing through said flanges and ring to make a watertight connection, said bell-like member and said dish-shaped member providing an interior chamber, socket members arranged in said chamber and fastened to the dish-shaped member, a conduit carrying cable passing through the bell-like member and electrically connected to the sockets, and a waterproof strain relief member connected to the upper end of the bell-like member and clampingly engaging the cable.

2. An electric light fixture comprising a reflector portion at its lower end and a bell-like portion at its upper end, the two portions being integrally connected by an annular flange, a ring welded to the said flange, a dish-shaped member having a peripheral flange located below the said ring, fastening means passing through said flanges and ring to make a watertight connection, said bell-like portion and said dish-shaped member providing an interior chamber, socket members arranged in said chamber and fastened to the dish-shaped member, a conduit carrying cable passing through the bell-like

portion and electrically connected to the sockets, a waterproof strain relief member connected to the upper end of the bell-like portion and clampingly engaging the cable, a bracket mounted on the bell-like portion, and a swinging support connected to the bracket, said bracket having a multi-sided recess formed therein, and said strain relief having a corresponding shaped part receivable in said recess.

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