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ILLUMINATING DEVICE FOR TANK TRUCKS

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5 Claims. (Cl. 240-12)

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This invention is a device primarily intended for the illumination of the interior of tanks of tank trucks, cars and trailers used for the transportation of milk in bulk. These tanks are commonly constructed of or lined with stainless steel or some other non-corrosive material and between trips it is the practice for a washer to enter through a manhole at the top thereof and scrub and thoroughly clean the interior of the tank in order to maintain it clean and sterile.

In order to carry on this work, it is necessary that the interior of the tank be thoroughly illuminated and it has generally been the practice in the past for the workman to carry into the tank with him a lamp supplied with current from an extension cord. These lamps have simply hung by the cord. In every case they constitute a distinct hazard for, in the washing of the tank and the rinsing thereof with a hose as is usual, the cord and lamp become wet so that the operator touching the same may receive serious electrical shock or even be electrocuted. Furthermore, the lamp, to satisfactorily illuminate the interior of the tank, must produce a strong light and the resulting glare of an uncovered bulb is very tiring to the eyes of the workman and tends to give him a headache or severe eyestrain.

In an application filed on December 20, 1949, by me and one John Vincent Sherlock, as joint inventors, under Serial No. 133,974, there is disclosed a system of illuminating the interior of tanks of the character described, wherein the source of illumination is entirely without the tank and is in the form of a series of lamps, the rays of which are impinged upon a reflector positioned within the tank, the whole structure being supported on the ceiling of the wash room. This structure operates with high efficiency in the performance of its intended function, but it is expensive and there are cases wherein it cannot be satisfactorily used as, for example, out of doors where there is no means of support for the device.

The object of the present invention is to provide a simple economical construction which may be supported on the edge of the manhole of the tank and which will not only furnish adequate illumination, but will be perfectly safe to the operator, both from the standpoint of glare and electrical shock.

In its preferred form, the illuminating device of this invention consists of a holder having an elongated tube provided at one end with an enlarged hood having a flared end and in which is positioned a sealed beam lamp, such as a projector, spot or flood lamp, so supported that the

axis of its beam is coaxial with the tube. The tube is provided intermediate its ends with a hook adapted to engage with the upstanding flange around the manhole of the tank, to support the tube in upright position with the hood within the tank, so as to project a beam of light downwardly in a substantially vertical direction upon a semi-spherical reflector positioned horizontally below and co-axial with the hood and mounted thereon by a plurality of supporting rods. With this arrangement, the light from the lamp is projected downwardly upon the semi-spherical reflector and is reflected from the latter to all portions of the interior of the tank with a substantially uniform illumination of all parts of such interior and without serious glare. Current is fed to the lamp through wiring extending downwardly through the tube from the upper end thereof to the lamp socket in which lamp is supported.

Features of the invention, other than those adverted to, will be apparent from the hereinafter detailed description and appended claims, when read in conjunction with the accompanying drawings.

The accompanying drawings illustrate one practical embodiment of the invention, but the construction therein shown is to be understood as illustrative, only, and not as defining the limits of the invention.

Figure 1 is a central vertical longitudinal section of an illuminating device according to the present invention with certain parts shown in elevation.

Figure 2 is a section through a tank car or trailer showing the illuminating device of this invention positioned therein.

Figure 3 is an enlarged fragmental section showing clearly the manner in which the device is supported on the flange extending around the manhole of the tank.

Referring to the drawings, 1 designates an elongated tube, the lower portion of which is enlarged to form a hood 2 the lower end of which is outwardly flared and in this flared end is a mounting 3 for a lamp socket 4. This mounting may be conveniently held in place by screws 5, although any other appropriate method of mounting will suffice. The socket 4 is secured within the mounting 3 by a bracket 6 and screws 7, or in any other manner, to receive the screw shell 8 of a sealed beam lamp 9. When screwed into the socket 4 this lamp engages with a heat-resisting gasket 10 which cushions the lamp against breakage and also precludes the entrance of water into the interior of the mounting 3.

Secured around the periphery of the flared

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portion of the hood 2 is a plurality of rods 11. These may be secured to the portion 2, by welding brazing or in any other suitable manner and any appropriate number of these rods may be used, although four are preferably employed. These rods extend downwardly to support a semi-spherical reflector 12, being secured to said reflector in any appropriate manner as by turning in the ends 13 of said rods, threading them, and applying nuts 14, as shown in Figure 1. The reflector is positioned horizontally and coaxially with and below the lamp 9, so that the rays from the lamp impinge upon said reflector and are reflected in all directions.

The tube 1 is provided intermediate its ends with a hook 15 which is shown as welded or brazed to the exterior of the tube, although it may be longitudinally adjustable with respect thereto. This hook is adapted to be engaged with the edge of the flange 16 which extends around the manhole 17 of tanks of the character described. When thus supported, the device will occupy the position shown in Figure 2.

Electric current for energizing the lamp is supplied through a cable 18 entering into the upper end of the tube and passing downwardly through rubber bushings 19 and 20, which excludes entrance of water, to the lamp socket 4 where said cable has the usual connections with the lamp 9. When thus illuminated, the beam from the lamp will be reflected from the reflector 12, as indicated by rays *r*, a few of which are shown in Figure 2, although, in practice, these rays will be innumerable and will illuminate the most remote portions of the tank with a soft light imparting a high degree of illumination without glare.

With the construction described, the device is perfectly safe for workmen, the electrical connections to the lamp, including the lamp socket are completely sealed within the confines of the lamp mounting, so that it is utterly impossible for water to get into the lamp mounting and cause short circuiting which would render workmen liable to electric shock upon contact with the device. In practice, it is found that a stream of water may be directed from a hose all over the device without any short circuiting or damage to any of the parts. It is quite common in practice for a stream of water to strike the lamp during its use. During the washing of the interior of the tank, the semi-spherical reflector will of course become wet, experience has shown that this does not materially affect its ability to properly reflect light to the most remote parts of the tank and provide adequate illumination for the workmen therein.

The light is so hooded as to not only protect it from damage by wetting with water, but to protect it from damage by contact with extraneous objects. The tube is, in practice, fairly long so that heat generated by the lamp will rise through the tube and be radiated from the tube and thus the parts do not overheat. A workman cannot possibly obtain an electric shock from the lamp of this construction, no matter how wet the parts of the device in the tank may become. Such a workman may shift the device around the flange of the tank as he walks past it and the device may be readily raised and lowered into the tank as the workman leaves or enters it.

This invention was particularly conceived for the illumination of the interior of milk trans-

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porting tanks. I am aware, however, that it has uses in other environs and the present invention is therefore to be understood as fully commensurate with the appended claims.

Having thus fully described the invention, what I claim as new and desire to secure by Letters Patent is:

1. An illuminating device comprising: an elongated tube, one end of which is enlarged to form a hood the free end of which is flared, a sealed beam lamp supported within the flared end of the hood with its axis parallel to the axis of the tube, rods extending from said flared end and supporting a semi-spherical reflector coaxial with and in spaced relation to the lamp, an electric cable passing from the lamp longitudinally through the hood and tube and through the distant end of the latter, and means for supporting the tube in upright position.

2. An illuminating device comprising: an elongated tube one end of which is provided with a hood the free end of which is flared, a lamp mounting positioned within the hood and having an open end provided internally with a heat resisting gasket, a socket positioned within said mounting and supported thereby, a lamp engaging with said lamp socket with a portion of the lamp seated against the gasket of the mounting to seal the mounting against the entrance of water at this point, an electric cable passing longitudinally through the tube and hood and into the interior of the mounting and connected to the lamp socket, an impervious gasket surrounding the cable to preclude the entrance of water into the mounting about the cable, and rods extending from the flared end of the hood and supporting a semi-spherical reflector in spaced relation to the end of the hood and coaxial with the lamp.

3. An illuminating device as claimed in claim 2, wherein the free end of the tube is provided with a rubber bushing to seal said end of the tube and cushion the cable against wear.

4. An illuminating device as claimed in claim 2, wherein the lamp is a sealed beam lamp.

5. An illuminating device comprising: a tube provided at one end with a hood having therein a lamp mounting for a sealed beam lamp, a socket within said mounting, a current carrying cable leading to the socket and said mounting being sealed by gaskets about the cable and the lamp against the passage of water into the mounting, rods secured to the hood and supporting a semi-spherical reflector coaxial with the lamp and in spaced relation to the latter, and means for supporting the hood in upright position.

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