ELECTRIC HAND LAMP

Fig. 1

Fig. 2

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This invention relates to hand electric lamps of the type having a handle or shank through which the wires extend to the terminals of the lamp socket and has for its object generally a portable electric hand lamp consisting of a handle, body and a socket, which members are convenient to assemble and manipulate and are combined so as to produce a safety lamp both in respect to grounding and use in hazardous places such as garages, chemical plants etc.

More specifically, the invention has for an object a hand lamp of the portable type having a heat resisting or insulated handle of resilient or yielding material, which provides a vapor proof covering for the wires and lamp socket terminals and also provides a vapor proof connection between the globe, if the lamp is equipped with one, and the socket with its related electrical connections.

A further object of the invention is a particularly simple and efficient method of grounding the body of the lamp so that in the event of any electrical defect, the potential of the body will be reduced to that of the person using the lamp, or in other words, zero, thus preventing any element of danger from the user of the lamp receiving an electrical shock or from sparking when the lamp is used in hazardous places.

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 longitudinal elevation, partly in section, of a lamp embodying this invention.

Figure 2 is an end view, partly in section, looking upwardly in Figure 1.

Figure 3 is a plan view of the lamp socket.

Heretofore, the handles of this type of lamps have been made of rigid material, such as metal or wood, and made separate from the body and integral with the body. When the lamps were intended for use in hazardous places, separate gaskets were provided to render the joints between the various members tight. Lamps of this type are used extensively in factories, garages, oil refineries and commercial institutions generally and are accordingly subject to extremely rough usage and are oftentimes dropped on cement floors or machinery or otherwise damaged or broken by being stepped on or run over while lying on the floor, which heretofore has resulted in the handle being broken with the resulting danger of explosion from the exposure of the electrical contacts or ends of the cable. In hazardous places, the lamps are, of course, supplied with a one-piece transparent globe which completely surrounds the electrical bulb. In lamps of this type, the heat generated by the electric bulb is comparatively high and inasmuch as it is confined within the globe, the lamps with metallic and like handles become so hot, that they can not be handled without burning the hands.

The lamp of my invention is provided with a handle of yielding resilient material, such as rubber, which affords insulation against excessive heat and is not breakable through rough usage.

Also, because of the yielding handle, the lamp is remarkably more comfortable to handle and retain in the hand.

This electric lamp comprises, generally, a handle of yielding, more or less flexible, insulating material, the handle being tubular for the passage of electric wires and for the seating of the lamp socket, a cup-shaped metallic body mounted on the handle, a lamp socket including a base seated in the handle at the inner end thereof, and means for securing the lamp socket and the body to the handle, the handle acting as a yielding separator or gasket for the lamp socket and the metal body and also as a gasket between the globe enclosing the lamp bulb and the body of the lamp and the socket.

1 designates a cup-shaped metal body having an opening in its bottom. 2 is a tubular handle of rubber having more or less resiliency and flexibility, this having a head portion 3 extending through the opening in the bottom of the cup-shaped body 1, and an integral annular flange 4 lying on the bottom of the body 1 and forming a gasket as will be hereinafter described.

The body 1 and the handle 2 have means for preventing relative turning, and as here shown, the head 3 is provided with lengthwise grooves 5 adjacent the flange 4, and the bottom of the body 1 is formed with lugs 6 extending into the grooves.

7 designates the base of a lamp socket, this having a shank portion extending into, or seating in, the passage of the head 3 and snugly fitting the same. This shank portion is provided with recesses opening through its perimeter in which the wire terminals are located. These recesses provide partitions as 8 between them, the edge walls of which dig into, or distort, the walls of the passage of the head 3 as at 9. Also, the shank snugly fits and distorts the walls of 110
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the passage of the head as at 10, thus holding the lamp socket base assembled in the handle. The lamp socket base is also provided with an annular flange 11 overlying the flange or gasket 4 of handle 2, and preferably, fastening means, as screws 12, extend through the flange 11, gasket 4 and thread into the bottom of the cup-shaped body 1 or the lugs 6 thereof, to clamp the body to the handle and the lamp socket to the body with the flange of the handle between them.

The lamp socket is also provided with the usual wire terminals and also with a grounding terminal 13 for connection to a grounding wire. This terminal is connected through the screw 14 and conductor 15 to one of the screws 12 so that the body 1 is grounded to the ground wire through one of the screws 12, conductor 15, screw 14, and grounded terminal 13.

When it is desired to use the lamp in a hazardous place, such as oil refinery, the lamp is rendered vapor-proof by enclosing the exposed screw shell end of the socket and the electric bulb with a glass globe.

18 designates this globe carried by the cup-shaped body here shown as threading thereinto. This globe thrusts at its end over the cup socket 4 of the handle. Owing to the interlocking of the handle with the body 1, the handle and the body are held from relative turning movement, while the globe is being screwed against the gasket or removed from the body 1.

17 designates a case or guard of any suitable construction, this having a split ring 18 at one end which is clamped about the body 1 by a clamping screw 19. The case is also provided with a suitable hook 20, by means of which the lamp can be held, if desired, on any convenient support. The feed and the ground wires extend through the outer end of the handle into the same where they are connected to the wire terminals and the ground terminal 13. The handle is provided with a suitable bushing 21 which threads into a sleeve 22 of composition snugly fitted in the outer end of the handle and carrying an inner bushing 23 of rubber or yielding material, this bushing 23 being provided with a bore or passage of substantially the same dimension as the electric cable. Its outer surface is formed with other than a circular cross section, one of which is formed with a greater length and which coaxes with a complementary bore of the composition insert 22, the other taper being of a greater angle and mating with a complementary taper on the inner end of the bushing 21.

In assembling the lamp, the handle 1 is first placed in the cup-shaped body with its flange 4 seating against the bottom of the body. The bushing 21 is loosen and removed and the electric cable is passed through the bushings 21, 23 through the passage of the handle and the wires connected to the lamp socket terminals and the ground terminal respectively. The socket is then forced into position in the inner end of the handle and the parts secured together by the screws 12. The bushing 21 is then screwed tightly into place, compressing the composition snugly between the bushing and body. The terminals of the lamp socket are now tightly enclosed with no possibility of vapor or liquid getting into the handle 2 and causing any defect in the wiring of the lamp. After the electric bulb has been screwed into the socket, the guard 17 is secured to the body 1. If it is desired to render the lamp vapor-proof tight, the globe 16 is tightly screwed into the body 1 seating against the flange 4 of the handle, and the guard 17 then placed over the globe. It is to be noted that the flange 4 of the handle serves as a head for the lamp socket and the globe 16, thereby preventing any inflammable vapors from seeping into the globe and about the screw shell of the socket.

This portable lamp is particularly advantageous in that it consists of a minimum of easily assembled and disassembled parts, thereby rendering the lamp very easy to wire and rewind and exceptionally easy to relamp. Because of the peculiar structure of the handle, it serves as a heat insulator and a gasket for the parts of the lamp.

What I claim is:

1. In an electric hand lamp, the combination of a handle of yielding insulating material, the handle having a lengthwise passage for electric wires, a lamp socket including a base mounted at one end of the handle and having a portion fitting into the same, wire terminals on said portion for connection to the wires, a metallic body mounted on the handle, a globe carried by said body, a portion of the handle extending between one end of the globe and the body and clamped between the same, means for securing the lamp socket and the body to the handle.

2. In an electric hand lamp, the combination of a handle of yielding insulating material, the handle having a lengthwise passage for electric wires, a lamp socket including a base mounted at one end of the handle and having a portion fitting into the same, wire terminals on said portion for connection to the wires, a metallic body mounted on the handle, a globe carried by said body, a portion of the handle extending between one end of the globe and the body and clamped between the same, means for securing the lamp socket and the body to the handle, one of said terminals being a ground terminal, and means for electrically connecting the body and the ground terminal.

3. In an electric hand lamp, the combination of a handle of yielding insulating material, the handle being tubular for providing a passage for the electric wires and having an annular flange at one end overlying the bottom of the cup-shaped body, a lamp socket comprising a base extending into one end of the handle, the annular flange of the handle, fastening members extending through the flange of the lamp socket base, the flange of the handle and into the bottom of the cup-shaped body and a globe carried by the cup-shaped body and passing at its edge against the flange of the handle.

4. In an electric hand lamp, the combination of a cup-shaped body having an opening in the bottom, a tubular handle of resilient insulating material having a head portion extending through said opening and an annular flange in the bottom thereof, the body having means for interlocking with the head of the handle for preventing relative turning thereof, the handle being tubular for permitting the passage of electric wires, a lamp socket having a portion extending through said opening and a portion extending from the bottom of the handle, and a globe carried by the body and thrusting against said flange, the flange forming a gasket integral with the handle against which the globe and the body seat.

5. In an electric hand lamp, the combination of a cup-shaped body having an opening in the bottom, a tubular handle of resilient insulating material having a head portion extending through所述文档中的文本内容。
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said opening and an annular flange in the body overlying the bottom thereof, the body having means for interlocking with the head of the handle to prevent relative turning thereof, the handle being tubular for permitting the passage of electric wires, a lamp socket having a portion seating and fitting in the head of the handle and a globe threading in the body and thrusting against said flange, the flange forming a gasket integral with the handle against which the globe and the body seat, the lamp socket also having a flange overlying the flange of the handle and fastening members extending through said flanges and into the bottom of the body.

6. In an electric hand lamp, the combination of a metal cup-shaped body having an opening in its bottom, a handle of resilient insulating material having a head extending through said opening and a flange in the body overlying the bottom thereof, the head being formed with a lengthwise groove and the body being formed with a lug on the bottom thereof interlocking in the groove to hold the body and the handle from relative turning movement, the handle being tubular for permitting the passage of electric wires, a lamp socket including a base having a portion fitting and seating in the head and terminals in the passage of the head for connection to the electric wires, a globe threading into the body and thrusting at its inner edge against the flange, and means for securing the lamp socket to the body through said flange.

7. In an electric hand lamp, the combination of a metal cup-shaped body having an opening in its bottom, a handle of resilient insulating material having a head extending through said opening and a flange in the body overlying the bottom thereof, the handle being tubular for permitting the passage of electric wires, a lamp socket including a base having a portion fitting and seating in the head and terminals in the passage of the head for connection to the electric wires, a globe carried by the body and thrusting at its inner edge against the flange and screws for securing the lamp socket to the body through said flange, one of the terminals of the lamp socket being a grounding terminal for connection to a grounded wire and a conductor connecting said grounded terminal and one of said screws for grounding the body.

8. In an electric hand lamp, the combination of a cup-shaped metallic body, having a passage through the bottom thereof, a tubular handle of yieldingly resilient material formed with an integral radially extending flange at one end thereof, the handle passing through the opening in the bottom wall of the body, and the flange of the handle resting upon the bottom of the body and overlapping the same, a lamp socket mounted on the end of the handle within the body and having a flange overlapping the flange of the handle, and means for detachably securing the lamp socket to the bottom of the body, a globe detachably secured at one end within the body and carried thereby, the end of the globe within the body surrounding the lamp socket and seating against the flange of the handle.

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