April 6, 1965 D. L. SUTTIE 3,177,358

LIGHT FIXTURE

Filed Feb. 9, 1962

Fig 1

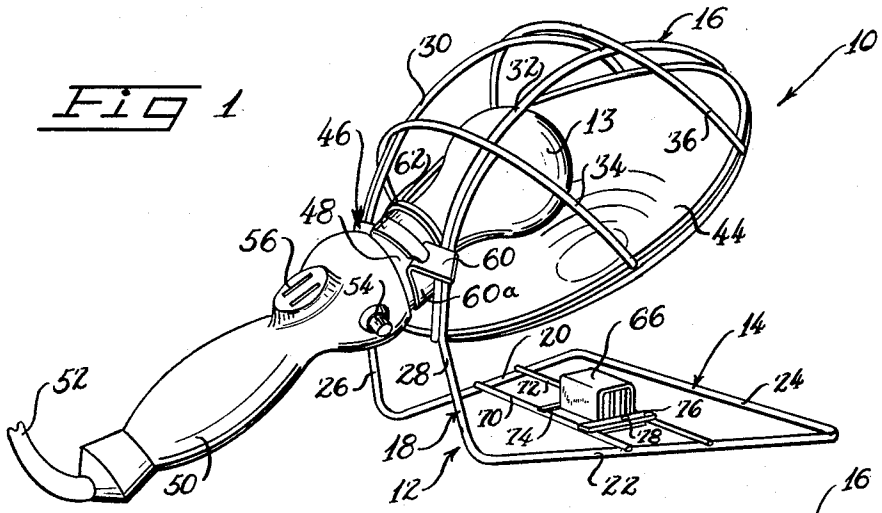
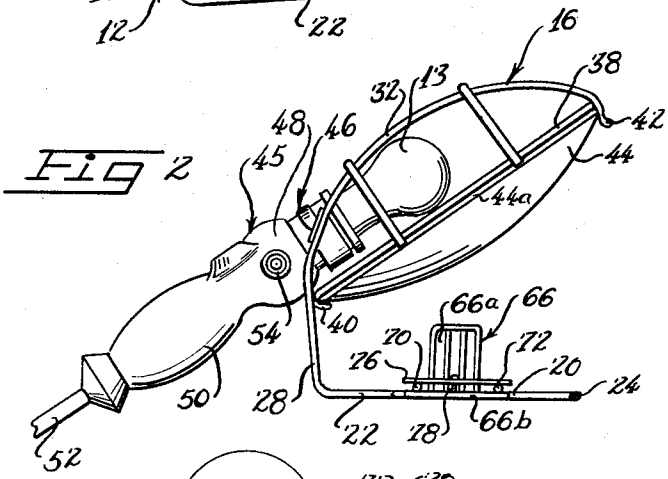


Fig 2



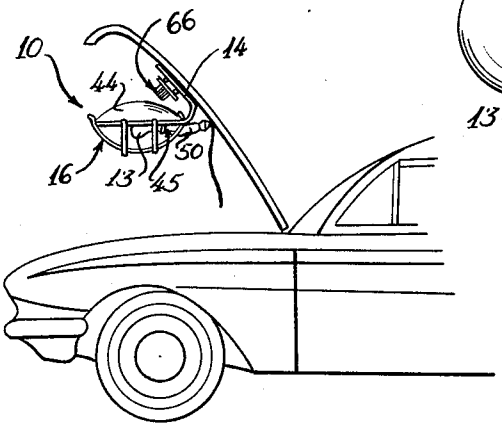


Fig 4

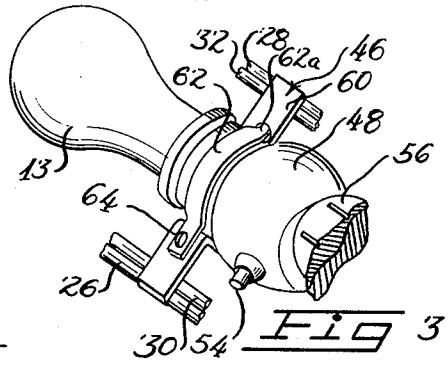


Fig 3

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LIGHT FIXTURE

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This invention relates to a trouble or work light fixture of the type which will protect the light bulb from damage and which may be attached to or positioned upon a supporting structure or surface in such a manner that the light may be directed toward the desired work area. The fixture has features which render it particularly advantageous for use in connection with automobile repair work as well as other work where it is often difficult to mount a fixture and direct the light at the proper angle.

Trouble light fixtures in common use today have a handle with a lamp socket at one end and a cord extending through the handle to the socket. The socket end of the handle may be clamped between two half sections of a wire, cagelike guard which extends about and protects the lamp or bulb mounted within the socket. A threaded fastener is usually employed to tightly clamp the two sections of the guard together about the socket end of the handle; and the three parts are, thus, usually separated when servicing the bulb. A hook or hanger provided at the top of the guard permits the fixture to be hung from various supporting structures. Unfortunately, when such a fixture is hooked to an overhanging structure, as is usually the case, it hangs from the structure at such an angle that most of the light is actually directed away from the underlying area where it is most needed. Moreover, in some instances, as for example, during repair work under the hood of an automobile, there is no convenient place to hook or even properly rest the trouble light. During tire changing or work performed from below the automobile where the light fixture often must rest on the ground, trouble light fixtures of present design tend to roll and to direct the light into the repairman's eyes. In addition, in order to replace the lamp or bulb in fixtures of previous design, it is necessary to manipulate the threaded fastener holding the three separate pieces of the fixture together. This is sometimes difficult and time-consuming, particularly, if done in the absence of supplementary lighting.

It is, therefore, one object of this invention to provide a portable trouble light fixture which will effectively guard the lamp or light bulb and which may be easily manipulated and mounted to direct light at an advantageous angle.

It is another object of this invention to provide an inexpensive trouble light fixture which is adapted for many uses and may rest upon or be attached to a wide variety of supporting structures without benefit or necessity of hooks, hangers, clamps or the like.

It is still a further object of this invention to provide a portable trouble light fixture which may rest upon a horizontal surface and yet cast light at an advantageous angle.

It is another object of this invention to provide a trouble light fixture which permits the light bulb to be quickly and easily changed without manipulation of a threaded fastener and without removal of the guard.

It is an additional object of this invention to provide an inexpensive trouble light fixture which may be firmly attached to a magnetically attractable supporting structure and may direct the light at an advantageous angle.

Other objects may be seen, and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawing.

In accordance with one embodiment of this invention,

the fixture comprises a wire frame having a base portion, a convex cagelike guard portion which is obliquely disposed with respect to the base portion and an upstanding intermediate portion interconnecting the base and guard portions. A shallow concave reflector is releasably attached to the back side of the guard portion, and a lamp socket means having an elongate handle is removably attached to the guard portion of the frame by means of a clamp. The handle of the lamp socket means extends from the bottom of the guard portion, that is, from approximately the junction of the guard portion and the intermediate portion, and the handle and the guard portion are preferably disposed at the same oblique angle (preferably between about 30 and 50 degrees) with respect to the plane of the base portion. Thus, when the base portion is resting on a horizontal surface, the handle extends forwardly and downwardly for convenient manipulation of the fixture.

A lamp mounted in the socket will extend into the space between the convex guard portion and the concave reflector. Means in the form of a permanent magnet attached to and extending through the base portion of the frame permits the frame to be releasably attached to any desired magnetically attractable support.

In the drawing:

FIGURE 1 is a perspective view of a trouble light fixture constructed in accordance with this invention;

FIG. 2 is a side elevation view of the fixture;

FIG. 3 is a view of a portion of the clamp which is used to attach the lamp socket means to the frame; and

FIG. 4 is a side elevation view of the fixture showing the manner in which the fixture may be magnetically attached to and suspended from a magnetically attractable support such as the underside of an automobile hood.

With further reference to the drawing, and particularly to FIGS. 1 and 2, the light fixture 10 constructed in accordance with this invention has a cagelike frame 12 which is preferably constructed of heavy gauge wire, such as for example, 12 gauge wire. This frame, if desired, may be formed of equivalent strip or even thin sheet material, the important consideration being the cagelike construction which protects the lamp or bulb 13 but does not unduly block the light from the bulb.

The frame 10 has a base portion 14, a guard portion 16 and an intermediate portion 18. In the illustrated embodiment the base portion 14 and the intermediate portion 18 are formed integrally of a single wire. The base portion 14 is preferably planar and includes a pair of diverging legs 20 and 22 and a transverse connecting back portion 24. The intermediate portion 18 includes two upstanding elements 26 and 28 which are extensions of legs 20 and 22, respectively, of the frame base portion.

The guard portion 16 of the frame includes a first pair of parallel curved frame wires 30 and 32 which are connected to the upstanding elements 26 and 28, respectively, of the frame portion 18. A similar second pair of curved parallel frame wires 34 and 36 are transversely disposed with respect to the first pair of frame wires 30 and 32, and a circular frame wire 38 connects the pairs of frame wires 30–32 and 34–36 adjacent their ends to in effect define the periphery of the cagelike guard portion 16 of the frame.

The lower ends of the frame wires 30 and 32 extend beyond the circular peripheral frame wire 38 and are curved inwardly to form reflector-engaging fingers 40, as best illustrated in FIG. 2. The opposite ends of frame wires 30 and 32 also overextend the circular peripheral frame wire 38 and are curved first inwardly and then flared outwardly to form a pair of resilient latching formations 42 adjacent the top of the guard portion 16.

A shallow concave reflector 44 formed of sheet metal

(preferably 8 gauge) having an outwardly extending peripheral flange 44*a* is releasably attached to the guard portion 16 of the frame by means of the fingers 40 and the latching formations 42. As best illustrated in FIG. 2, the inwardly curving fingers 40 at the bottom of the guard portion are adapted to receive the peripheral flange 44*a* of the reflector; and with the bottom of the reflector thus held in place, the top of the reflector may be easily swung upwardly into engagement with the latching formations 42 at the top of the guard portion. Closing pressure on the reflector causes the formations 42 to be cammed open, and as soon as the flange of the reflector has passed the flared tips of these formations, the formations will snap closed behind the flange to releasably lock the reflector in place. The formations 42 may be held open by finger applied pressure to effect disengagement of the reflector flange and permit servicing of the lamp 13.

A lamp socket means 45 is adapted to be attached to the frame 16 by means of a clamp 46. The lamp socket means 45 includes a socket housing 48 having a handle 50 integral therewith. An electric cord 52 extends through the handle 50 and into the housing 48 where it is electrically connected to the socket (not shown). The connection is through a switch 54 which controls the application of electric power through the cord 52 to the light bulb 13 in the usual and well-known manner. A convenience receptacle 56 is preferably provided on the housing 48 and is connected within the housing to the electric cord 52. Auxiliary equipment, such as electric drills, saws, soldering irons, or the like, may be plugged into this receptacle, if desired.

The clamp 46 for attaching the socket housing 48 to the frame 16 is best illustrated in FIG. 3 and includes a pair of clamping elements 60 and 62 and a threaded fastener 64. Clamping element 60 is connected between the parallel wire frame members 30 and 32 of the guard portion, and this clamping element is centrally recessed to accommodate the neck of the socket housing 48. The clamping element 60 is apertured on either side of the recess, and clamping element 62 has a tongue 62*a* at one end which is adapted for insertion within one of the apertures in clamping element 60. Clamping element 62 may also be centrally recessed to accommodate the curved neck portion of the socket housing 48, and the end of the clamping element 62 opposite the tongue 62*a* is apertured. The threaded fastener 64 extends through the aperture in the clamping element 62 and threadedly engages in the remaining aperture of the underlying clamping element 60. The two elements may, thus, be forcibly drawn together by means of the threaded fastener 64 to effect clamping of the socket housing 48 therebetween.

It will be noted that the socket housing 48 is clamped in such a position that the light bulb 13 will be disposed within the space between the convex guard portion 16 of the frame and the concave reflector 44, and the handle 50 will extend forwardly and downwardly from the guard portion and substantially parallel to the plane and the circular peripheral frame wire 38 thereof. The handle 50 is, thus, presented for easy access in front of the frame. This handle and the guard portion of the frame are thus disposed at approximately the same oblique angle with respect to the base portion 14 of the frame, which may vary from between about 30 degrees and about 50 degrees and is preferably about 35 degrees. The length of the handle 50 and the angle of the disposition thereof are preferably such that the bottom end of the handle will lie approximately in the plane of the base 14, and the handle will thus cooperate with the base 14 to support the fixture 10 when the latter is resting on the ground or other generally horizontal surface. As a practical matter, however, the user may bend the upright elements 26 and 28 to secure any desired angle between the guard 16 and the base 14.

Attached to the base portion 14 of the frame is a permanent magnet 66 having a central body 66*a* and an outwardly extending peripheral flange 66*b*, the thickness of the flange being preferably approximately the same as that of the wire forming the base portion 14. The magnet 66 is attached to two parallel wires 70 and 72 which extend between the rearwardly diverging legs 20 and 22 of the base portion. For this purpose, two narrow plates 74 and 76 extend across and rest upon the top of the parallel wires 70 and 72. These plates are apertured to accommodate threaded fasteners 78, and the flange 66*b* of the magnet is similarly apertured at both ends. The body 66*a* of the magnet is positioned between the wires 70 and 72, and the magnet flange 66*b* is disposed below these wires. Threaded fasteners 78 which extend through the overlying apertured plates 74–76 engage the underlying flange of the magnet 66. The wires 70 and 72 are, thus, tightly clamped between the plates 74 and 76 and the magnet flange.

The permanent magnet 66 permits the base portion 14 of the fixture to be firmly attached to any magnetically attractable surface such as the underside of an automobile hood, as best illustrated in FIG. 4. The angular disposition of the guard portion 16 and the reflector 44 with respect to the base portion 14 permits the light to be directed at the proper angle into the motor area of the automobile. The base 14 will also firmly rest upon a flat surface such as the ground, and the light from the fixture will be directed upwardly at a convenient angle for such work, for example, as tire changing or repairs under the car, where it is desirable to have the light directed upwardly at an angle.

It may be seen that the light fixture constructed in accordance with this invention is extremely versatile and adapted for many different uses including the use as a trouble light for maintenance and repair of automobiles. The permanent magnet attached to the base permits the fixture to be releasably mounted on any magnetically attractable surface, and the light from the fixture will be directed at a convenient angle. The light bulb 13 may be easily serviced by snapping the reflector 40 out of engagement with the clamping portions of the guard, and the fixture may be easily manipulated by means of the convenient forwardly protruding handle.

Although the invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that many modifications and changes in various details may be resorted to without departing from the spirit and scope of the invention, as hereinafter claimed.

What is claimed is:

1. A portable fixture for an electrically energized lamp, said fixture comprising a wire frame having a substantially planar fixture supporting base portion, a guard portion obliquely disposed with respect to said base portion, and an intermediate portion connecting said base and guard portions, a reflector, means for releasably attaching said reflector to said guard portion intermediate said base and guard portions, lamp socket means having an elongate handle portion, clamp means releasably attaching said lamp socket means to said frame with said handle portion extending from approximately the juncture of said guard and intermediate portions at an oblique angle with respect to the plane of said base portion, whereby a lamp mounted within said lamp socket means will extend between said guard portion and said reflector, and magnetic means substantially smaller than said base portion for releasably attaching said base portion to a magnetically attractable support.

2. The fixture recited in claim 1 wherein said attaching means includes a first pair of spaced finger formations extending generally inwardly of the peripheral portions of said guard portion at one side thereof for engagement with the peripheral portions at one side of said reflector, and a second pair of spaced finger formations extending generally inwardly of the peripheral portions of said guard portions at the opposite side thereof for engage-

ment with the peripheral portions at the opposite side of said reflector, whereby said reflector may be releasably held in operative postion relative to said frame.

3. A portable fixture for an electrically energized lamp, said fixture comprising a frame having a fixture-supporting base portion defining a plane upon which said fixture is adapted to rest, a guard portion obliquely disposed with respect to said base portion and an intermediate portion connecting said base and said guard portions, a reflector, means for attaching said reflector to said guard portion, intermediate said base and guard portions, lamp socket means having an elongate handle portion, clamp means releasably attaching said lamp socket to said frame with said handle portion extending from approximately the juncture of said guard and intermediate portions at an oblique angle with respect to the plane of said base portion, whereby a lamp mounted within said lamp socket means will extend between said guard portion and said reflector, and magnetic means attached to said base portion and disposed in spaced relationship with respect to the peripheral parts of said base portion, said magnetic means extending through said base portion for releasably attaching said base portion to a magnetically attractable support.

4. A portable fixture for an electrically energized lamp, said fixture comprising a frame having a fixture-supporting base portion defining a plane upon which said fixture is adapted to rest, a guard portion obliquely disposed with respect to said base portion and overlying said base when said base is resting upon a horizontal surface

and an intermediate portion connecting said base and said guard portions, a reflector, means for attaching said reflector to said guard portion intermediate said base and guard portions, lamp socket means having an elongate handle portion, clamp means releasably attaching said lamp socket to said frame with said handle portion extending from approximately the juncture of said guard and intermediate portions at an oblique angle with respect to the plane of said base portion, whereby a lamp mounted within said lamp socket means will extend between said guard portion and said reflector, and a permanent magnet attached to said base portion and disposed in spaced relation with respect to the sides and ends of said base portion, said magnet extending through said base portion for releasably attaching said base portion to a magnetically attractable support.

References Cited in the file of this patent

UNITED STATES PATENTS

1,932,143	Piercy	Oct. 24, 1933
2,570,329	Dunkelberger	Oct. 9, 1951
2,580,359	Moineau	Dec. 25, 1951
2,608,643	Day	Aug. 26, 1952
2,723,343	Wasselle	Nov. 8, 1955
2,853,597	Hartman	Sept. 23, 1958
2,987,612	Haulter	June 6, 1961

FOREIGN PATENTS

17,067	Great Britain	Sept. 26, 1907