May 29, 1951 F. M. FIKE 2,554,565

ELECTRIC LAMP GUARD WITH ADJUSTABLE REFLECTOR

Filed April 22, 1949

FIG. 1.

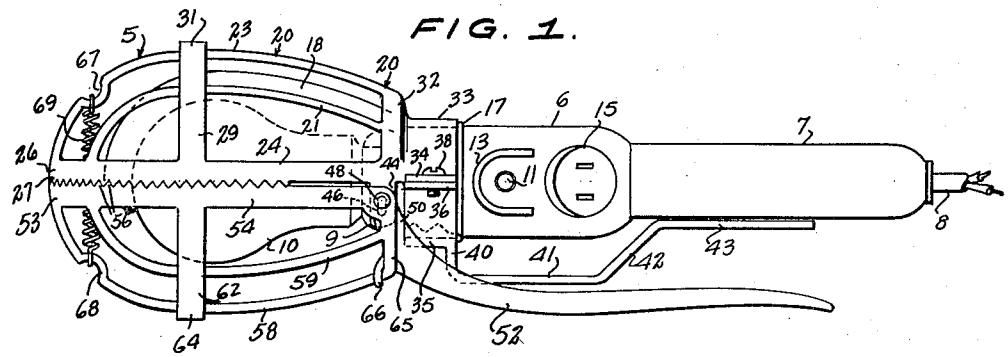


FIG. 2.

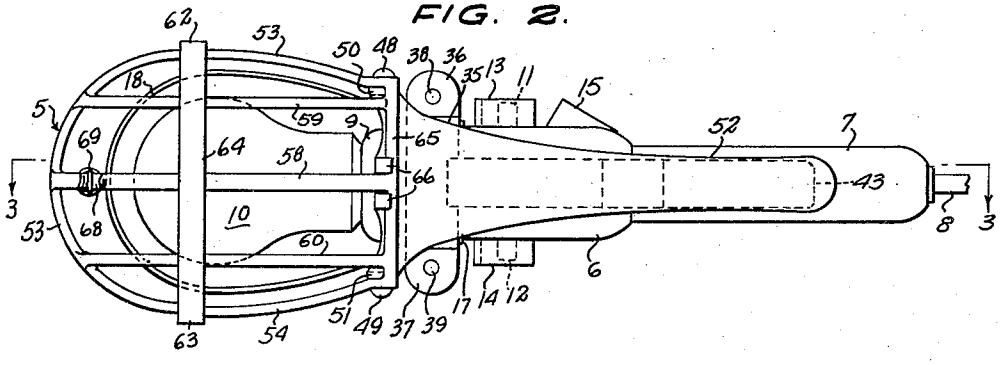


FIG. 3.

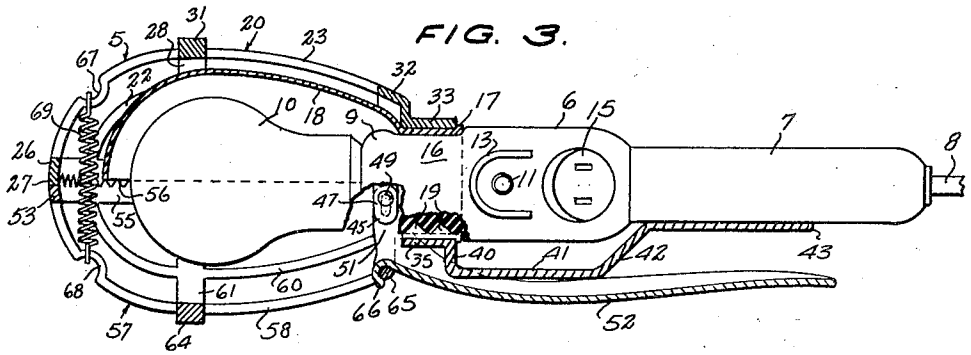
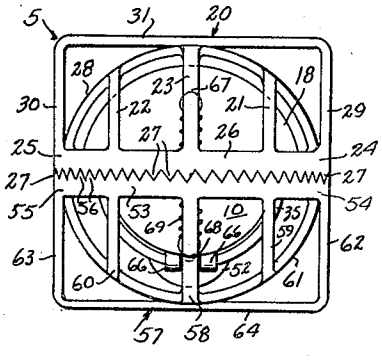


FIG. 4.



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ELECTRIC LAMP GUARD WITH ADJUSTABLE REFLECTOR

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2 Claims. (Cl. 240—54)

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This invention relates to protectors and guards for manually-handled trouble lights and the like, and particularly to a special electric lamp guard.

The main object of my invention is to facilitate hooking an electric lamp on various objects and controlling the position of the lamp and a reflector included in the structure.

Another object is to provide a lamp guard as indicated which may be manually operated in convenient manner for causing portions at the forward end of the guard to clamp upon a projecting object in order to locate the lamp in a desired working position.

A further object is to have such a lamp guard provided with a reflector and means for manually retaining the guard in stationary position while allowing the reflector to be partly rotated to various positions in order to direct the light rays in a desired direction at will.

It is also an object to make a lamp guard of the type indicated in a rugged form capable of withstanding rough usage and to mount the reflector in a protected position within the guard, and in general so to construct the guard throughout that it will be a well equipped and serviceable device.

Other objects and advantages of the invention will appear in further detail as the specification proceeds.

In order to facilitate ready comprehension of this invention for a proper appreciation of the salient features thereof, the invention is illustrated on the accompanying drawing forming part hereof, and in which:

Figure 1 is a side elevation of an electric lamp guard made according to the invention and embodying the same in a practical form;

Figure 2 is a bottom plan view of the same electric lamp guard as seen from below in Figure 1;

Figure 3 is a longitudinal section taken on line 3—3 in Figure 2;

Figure 4 is an end elevation as seen from the left in Figure 1.

Throughout the views, the same reference numerals indicate the same or like parts.

In work shops and particularly repair shops where automotive repairs are made, it is quite customary to use manually-handled trouble lights, especially when a workman gets down on a creeper and intends to inspect a car from beneath. When a workman is thus occupied, he usually finds it necessary to place the lamp involved on the floor or precariously perch it on some jutting portion of a part beneath the car being inspected, but as a rule he suffers from two

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disadvantages when thus using the trouble light. The first is that at any moment the lamp may drop to the floor or perhaps into his face, and the other is that the lamp usually shines directly in his eyes and largely prevents him from viewing the parts to be inspected at any advantage. When a trouble light is used which has a reflector substantially forming a part of the guard thereon, it is frequently difficult to place the light in such a position that the reflected light will only be directed toward the parts to be inspected and repaired, and if means are present for attaching the trouble light to any object under a car, the same is usually limited to some position which nonetheless directs some of the light into the eyes of the mechanic, and thus trouble lights while necessary are coupled with disadvantages that amount to a problem apparently not yet solved by any means generally adopted.

Upon considering this problem, it has occurred to me that a trouble light should have a guard capable of being clamped upon some projecting object, a part of a fender or the head of a bolt, or any other available means, and particularly should have a reflector which is sufficiently independent of the guard to allow the same to be directed in a desired direction despite the position of the guard on the trouble light. As a result of such consideration, I have succeeded in producing a special lamp guard for a trouble light which will now be more fully described.

Hence, in the practice of my invention, and referring again to the drawing, an electric lamp guard, generally indicated at 5, is mounted on a more or less conventional handle 6 preferably made of rubber or plastic, with a rearwardly-extending hollow handle portion 7 by which said handle member as a whole may be manipulated and into which a cable extends at 8 adapted for connection to a current source. On the forward end of handle 6 is a socket 9 into which a lamp bulb 10 is screwed in a conventional manner, the current from cable 8 being controlled by a switch having the two end buttons 11 and 12 within the guards 13 and 14 for protecting the buttons involved. The handle also is provided with a projecting outlet 15 by which connection may be made to a further extension or additional light, if desired. The main intermediate portion 6 of the handle which carries the guards 13 and 14 and the button members 11 and 12 forming the switch, as well as outlet 15, is of greater transverse dimension than the diameter of the forwardly-extending socket 9 or the rearwardly-

extending relatively narrower handle 7. Thus far described, the handle with the switches and socket with the lamp therein, while entirely conventional, nonetheless form the basis for applying the guard of the invention thereto.

Upon the rear cylindrical portion 16 of socket 9 is fixedly mounted a rear split ring 17 of a forwardly-extending concave reflector 18 which normally covers the upper half of the light bulb 10 longitudinally considered. The split ring or collar 17 is formed at the lower end thereof with inturned or upwardly-directed teeth 19 embedded in the outer rubber wall of the cylindrical portion 16 of socket 9. As reflector 18 is thus retained upon the socket against rotation relative to handle 6, the handle portion 7 may thus be used to turn or direct the reflector 18 in any desired direction, as will also develop more fully from the following.

An upper half-guard frame 20 includes a plurality of generally arcuate and forwardly-extending frame members 21 and 22, the central frame member 23 and two side members 24 and 25 which are united at the forward end 26 forming a jaw having downwardly-directed teeth 27, the upper jaw or guard member intermediate the ends thereof having an inner semi-circular reinforcing frame or ring 28, and immediately outside the latter the upper half of the rectangular frame formed by sides 29 and 30 and top 31. The mentioned vertical sides 29 and 30 and the upper horizontal portion 31 are attached to the semicircular ring 28 at the tangent points adjacent to the side members 24 and 25 and the upper central guard member 23, thus forming a strong reinforcement about the lamp 10 as well as reflector 18. Rearwardly the various arcuate guard members 21 to 25 are joined to semicircular or arcuate shoulder 32 integral with the reduced semicircular shell or half-ring 33 conforming to and fitting upon the rear ring mounting 17 of reflector 18, and at the sides provided with a pair of lugs 34 (one shown in Figure 1). Upon the rear split ring 17 of reflector 18 is mounted a bottom half-ring or collar 35 having a pair of upper horizontal lugs 36 and 37 mating with lugs 34 and secured thereto by means of screws 38 and 39 in such fashion that the resulting annulus is rotatable upon ring 17. From the lower semicircular collar member 35 just described extends a rear reinforcing member 40 which a short distance exteriorly of the intermediate handle portion 6 is bent rearwardly to form a spaced longitudinal intermediate section 41 which rearwardly of the intermediate section 6 of the handle is inclined upwardly at 42 toward the rear handle portion 7 and then directed rearwardly substantially in parallelism to and in contact with the mentioned handle portion 7 along the rear end 43 of said reinforcing member. The purpose of the mentioned reinforcing member will presently be disclosed in connection with the description and operation of the lower jaw or guard portion which completes the guard structure as a whole.

Upon the rear portions of the side members 24 and 25 which forwardly form the jaw 26, a pair of depending lugs 44 and 45 are provided forwardly of the side lugs 36 and 37, having vertically-elongated pivot slots 46 and 47 into which project a pair of pivot pins or pintles 48 and 49 directed inwardly toward each other and mounted upon the upper forward lugs 50 and 51 integral with a rearwardly-extending handle 52 spaced exteriorly of the intermediate handle portion 6 and the rear handle member 7.

However, exteriorly of the upwardly-projecting forward lugs 50 and 51 of handle 52, the pivot pins 48 and 49 extend through the upper rear corners of a lower jaw 53, that is through the rear ends of the side members 54 and 55 of said jaw member. The latter has a row of teeth 56 cooperating with the previously-mentioned teeth 27 of the upper jaw 26, and in similar fashion with the upper guard 20 forming a lower half-guard 57 including a forwardly-directed arcuate intermediate member 58, a pair of further members 59 and 60, an enveloping semicircular ring portion 61 and the lower half of the rectangular frame including the sides 62 and 63, and a horizontal bottom frame member 64 exteriorly secured upon the ring portion 61 at the side tangent points and the bottom where the side members 54 and 55 and the lower intermediate member 58 merge with the mentioned ring portion 61. Rearwardly the mentioned side members 54 and 55 of jaw 53 as well as the rear ends of frame members 58, 59 and 60 merge with the semicircular end portion 65 enveloping the forward end of handle 52.

On the intermediate portion of the rear semicircular ring or frame member 65 and at both sides of the forwardly-extending intermediate frame member 58 a pair of downwardly-directed hooked lugs 66 upon the forward end of handle 52 engage in such fashion as to be capable of causing the entire lower half 57 of the guard to pivot downwardly on pivot pins 48 and 49 when handle 52 is manually shifted upwardly toward the handle portion 7, the mentioned handle or lever 52 pivoting upon the same pivot pins so that for all practical purposes this lever and the lower guard 57 including jaw 53 with its teeth 56 form a pivoting unit operated by the mentioned lever. In order to maintain the two guard members 20 and 57, and particularly the jaws 26 and 53 thereof engaged and otherwise bias them toward each other in such fashion that the teeth 27 and 56 thereof may engage upon some object serving to support the guard and the lamp as a whole, both the central forwardly-extending upper and lower members 23 and 58 of the upper and lower half-guards are provided at the forward portions thereof with a pair of corresponding notch portions 67 and 68, respectively, virtually forming inwardly-arched recess members between which is mounted a helical tension spring 69 in such fashion as to apply closing tension directly to said recess members.

The arrangement is such that when the trouble light comprising the entire assembly heretofore described is to be used, it being assumed that cable 8 is connected to a source of current, pressing the proper button 11 or 12 for turning the current on to energize lamp 10, will cause the lamp to be instantly ready for use. Then seizing the handle portion 7 and also clasping lever 52 with the hand, lever 52 is squeezed, opening the lower jaw 53 and thus separating the forward portion of the lower half-guard 57 from the upper half-guard 20 sufficiently to allow the teeth 27 and 56 of the two jaws 26 and 53 to bite upon the edge of a fender or the end of a bolt or the head of a screw or the like, the reinforcing member 43 in the meantime preventing handle portion 7 from bending and thus forming a reinforcement for the same. When the object upon which the guard 5 as a whole is to be attached is properly engaged by the jaws, the handle or lever 52 is released and

spring 69 will hold the jaws clamped upon the mentioned object or projection thereof. However, when the device is thus mounted, it is very likely that the reflector 18 is disposed in some position in which the light is allowed to shine into the eyes of the mechanic using the trouble light, and if so, it is a simple matter for him to seize the handle portion 7 between the fingers and rotate the same which simultaneously rotates the reflector until the latter conceals the lamp 10 from the eyes of the mechanic and directs the light in the proper direction at the object or part which is to be attended to, so that it becomes properly illuminated. Due to the spaced position of the longitudinal section 41 of reinforcing member 43, the intermediate handle portion 6 with its guards 13 and 14, switch buttons 11 and 12, as well as outlet 15, will clear the reinforcement member during such turning of handle member 7. Such turning movement is thus possible due to the mounting of reinforcing member 43 and its forwardly-located semicircular ring portion 35 connected to the rear semicircular ring portion 33 of upper half-guard 28 integral with the upper jaw 26 being rotatably mounted on split collar 17 forming the rear end of reflector 18. This construction allows the reflector to be turned in any position desired irrespective of the position in which the guard as a whole is clamped upon the object from which it is suspended, and simultaneously the guard protects the reflector so that it is not exposed to damage, but disposed with lamp 10 within the guard.

The device thus far described need not necessarily be attached to any projecting member, but if laid down on the floor or upon a bench or the like, the substantially rectangular frame formed by the upper horizontal member 31, the bottom horizontal member 64, the sides 29 and 62 on the one hand and the sides 30 and 63 on the other hand allowing the lamp to be laid in any one of four positions without danger of rolling or displacement from a position in which it has been put by the mechanic using the same.

The guard as a whole may be made of plastic or metal or any suitable material desired which will serve the purpose and hold its shape.

Manifestly, variations may be resorted to and parts and features may be modified or used without others within the scope of the appended claims.

Having now fully described my invention, I claim:

1. The combination with a portable electric light including a socket having a bulb in one end and a handle secured to the other end thereof, of a reflector extending from said socket toward said bulb and partially enclosing the latter, means secured to the end of said reflector adjacent said socket for fixedly securing said reflector to the latter, a first guard frame extending from said socket toward said bulb and partially enclosing the latter, a second guard frame arranged in a mating relation with respect to said first frame and enclosing the remaining portion of said bulb, the ends of said frames adjacent said socket being pivotally interconnected and operatively mounted on said means for rotatable movement relative to the latter, resilient means connecting the opposite ends of said frames together for normally urging the latter toward each other, and a handle operatively attached to one of said guard frames adjacent said socket for selectively causing divergent and convergent movements of said opposite ends relative to each other.

2. The combination with a portable electric light including a socket having a bulb in one end and a handle secured to the other end thereof, of a reflector extending from said socket toward said bulb and partially enclosing the latter, means secured to the end of said reflector adjacent said socket for fixedly securing said reflector to the latter, a first guard frame extending from said socket toward said bulb and partially enclosing the latter, a second guard frame arranged in a mating relation with respect to said first frame and enclosing the remaining portion of said bulb, said means including a split ring circumposing said socket and having inwardly turned teeth for engagement with the latter, the ends of said frames adjacent said socket being pivotally interconnected and operatively mounted on said ring for rotatable movement relative to the latter, resilient means connecting the opposite ends of said frames together for normally urging the latter toward each other, and a handle operatively attached to one of said guard frames adjacent said socket for selectively causing divergent and convergent movements of said opposite ends relative to each other.

FLOYD M. FIKE.

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