Feb. 3, 1925. 1,525,374

W. R. CRAIG ET AL

MECHANIC'S TROUBLE LAMP

Filed Feb. 10, 1923

Fig. 1.

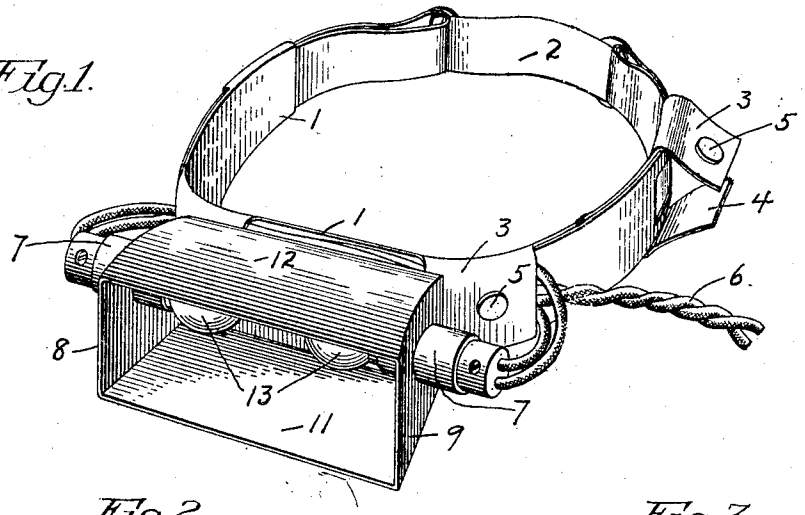


Fig. 2

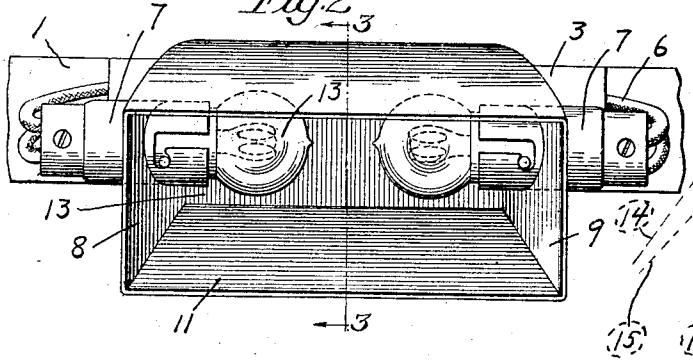


Fig. 3.

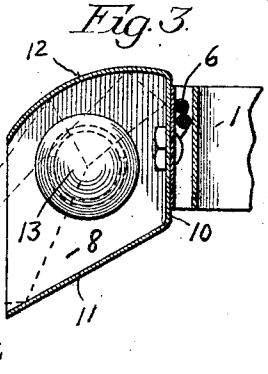
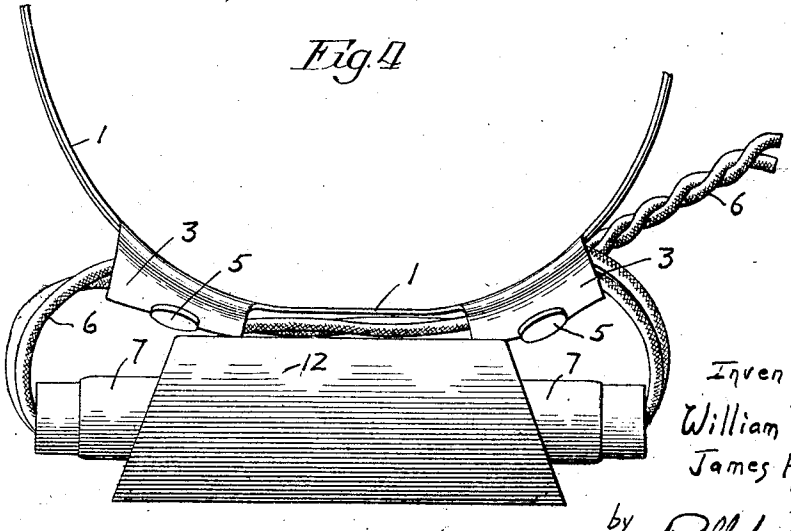


Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM R. CRAIG AND JAMES H. CRAIG, OF CHICAGO, ILLINOIS.

MECHANIC'S TROUBLE LAMP.

Application filed February 10, 1923. Serial No. 618,228.

To all whom it may concern:

Be it known that we, WILLIAM R. CRAIG and JAMES H. CRAIG, both citizens of the United States, and both residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanics' Trouble Lamps; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to lighting appliances and in some of its general objects aims to provide an inexpensive, easily manufactured and efficient lamp-socket and reflector arrangement in combination with simple and adjustable means for attaching such an arrangement to the head of the user and for affording the electrical connections to a source of current.

In its immediate commercial aspects, our invention is particularly suitable for use in place of the ordinary trouble lamps during the inspection and repair of automobiles, as its attachment to the head of the user leaves him the free use of both hands. Furthermore, the light-reflecting portions of our appliance are so designed that the reflected light will issue mainly in a forwardly and downwardly sloping direction corresponding to the usual line of vision of the person to whose head the appliance is attached, thereby insuring the effective concentration of a large share of the light in the direction in which the user is looking.

Further and also more detailed objects of our invention will readily appear from the following specification and from the accompanying drawings, in which—

Fig. 1 is a perspective view of a mechanic's head lamp or trouble lamp embodying our invention.

Fig. 2 is an enlarged front elevation of the same with portions of the head-encircling strap broken away.

Fig. 3 is a vertical section taken transversely of Fig. 2 along the line 3—3 of that figure.

Fig. 4 is a plan view corresponding to the elevation of Fig. 2 and also showing only a portion of the head-encircling band.

In the embodiment of the drawings, the appliance of our invention comprises an adjustable strap or band adapted to be attached to the head of the wearer (with a portion of the band bearing against his forehead), a forwardly opened casing attached to the forward part of the said band; a pair of lamp-sockets carried by the casing and supporting lamps within the latter, the casing having interior reflecting surfaces arranged for redirecting a considerable portion of the light of the lamps in desired directions; and conductors for supplying current to the lamps.

Thus, Fig. 1 shows a band 1 in the form of a flexible ring, including an elastic or otherwise adjustable portion 2, and including overlapping tabs 3 and 4 equipped with cooperating snap fastener portions 5 and adapted to clamp portions of a flexible lamp cord 6 to the main band portion 1. The wires of this flexible cord extend partly across the frontal portion of the band and lead to the usual conducting elements of a pair of lamp sockets 7. These sockets extend respectively through the opposite ends 8 and 9 of a metal casing which has its back 10 secured to the band 1 and which desirably has its ends 8 and 9 diverging forwardly towards the mouth of the casing as shown in the drawings.

The casing also desirably has its bottom 11 sloping downwardly and has its top 12 so curved that this top will cause a downward reflecting of light from a pair of lamps 13 respectively carried by the two lamp sockets 7. That is to say, this top 12 desirably is so shaped that light reaching its forward portions from the lamp filaments will be reflected forwardly and downwardly as shown by the dotted line 14 of Fig. 3, while rays of light from the lamp striking the upper portion of the back 10 of the casing and reflected by this back against the top 12 will then be reflected by the latter in a forward and downward direction after the manner shown in the dotted line 15 of Fig. 3. At the same time, rays of light striking the forward portion of the bottom 11 of the casing will be reflected forwardly after the manner shown by the dotted line 16 of Fig. 3.

With the reflecting casing thus constructed, it will be obvious from Fig. 3 that when the user has his head erect, the forwardly directed rays of light from the lamp are unobstructed; that the back of the reflector will redirect a good share of the rearward rays of light from the lamp so as also to project these forwardly; and that the bot-

tom and top of the reflector will cooperate in redirecting rays of light from the lamp forwardly and downwardly. Consequently, the user can always count on having the available light of the lamps concentrated to a large extent ahead of him and somewhat downwardly, or in other words in the directions towards which he can easily reach with his hands. Furthermore, by employing two lamps (which can readily be connected through a flexible cord 6 of suitable length to the lighting circuit of the automobile in the usual manner, such connections being too well known to need illustration or description here) we can readily secure an intensity of light ample for all ordinary purposes. Consequently, our appliance when in use will automatically furnish the light wherever the user is looking, so that he does not need to pay any attention whatever to the lighting arrangement and has the free use of both arms and hands at all times, instead of being seriously limited by requiring one hand for holding a trouble lamp or search light of the old type.

In practice, we desirably make the forward portion of the head-encircling band of two spaced portions after the manner shown in Fig. 3 with one portion bearing against the forehead of the user and with the other portion fastened to the metal so as to provide space through which certain portions of the lamp cord 6 pass from the current receiving side of the appliance to the lamp socket at the other end. This same space also affords an air insulation against the direct conduction of heat from the back of the reflecting casing, thereby permitting our appliance to be used with a proper degree of comfort even during warm summer nights.

However, while we have illustrated and described our appliance in an embodiment including numerous highly desirable features, we do not wish to be limited to the details of construction and arrangement as thus disclosed, it being obvious that the same might be modified in many ways without departing either from the spirit of our invention or from the appended claims. For example, the general purposes of our invention would also be served if we employed only one lamp in place of two lamps shown in the drawings, although we preferably use two such lamps, so as to secure the desired intensity of illumination while employing a compact reflector. So also, we do not wish to be limited to the use of our appliance in connection with automobile lighting systems, as it obviously could be employed with equal advantages wherever a suitable source of current is available.

We claim as our invention:

1. A headlamp including a casing having a substantially flat and normally vertical back, a pair of ends diverging forwardly, a downwardly sloping bottom, a pair of sockets respectively mounted on the ends, and a pair of lamps carried respectively by the two sockets and both disposed within the casing, the top of the casing being formed for downwardly reflecting both direct rays of light from the lamp and light reflected towards the top by other portions of the reflector.

2. A head lamp comprising a forwardly open casing having a substantially flat back, a pair of lamp-carrying sockets respectively mounted on the ends of the casing, and means for strapping the casing to the forehead of the user, the casing having interior surfaces formed for forwardly and downwardly reflecting the light from both lamps, and conductors leading to the lamp-sockets, the strapping means having two relatively spaced portions extending behind the casing and between which portions a part of the said conductors extend.

Signed at Chicago, Illinois, February 8th, 1923.

WILLIAM R. CRAIG.
JAMES H. CRAIG.