May 29, 1934. W. B. WELLS 1,960,766

LIGHT SIGNAL

Original Filed Oct. 6, 1932

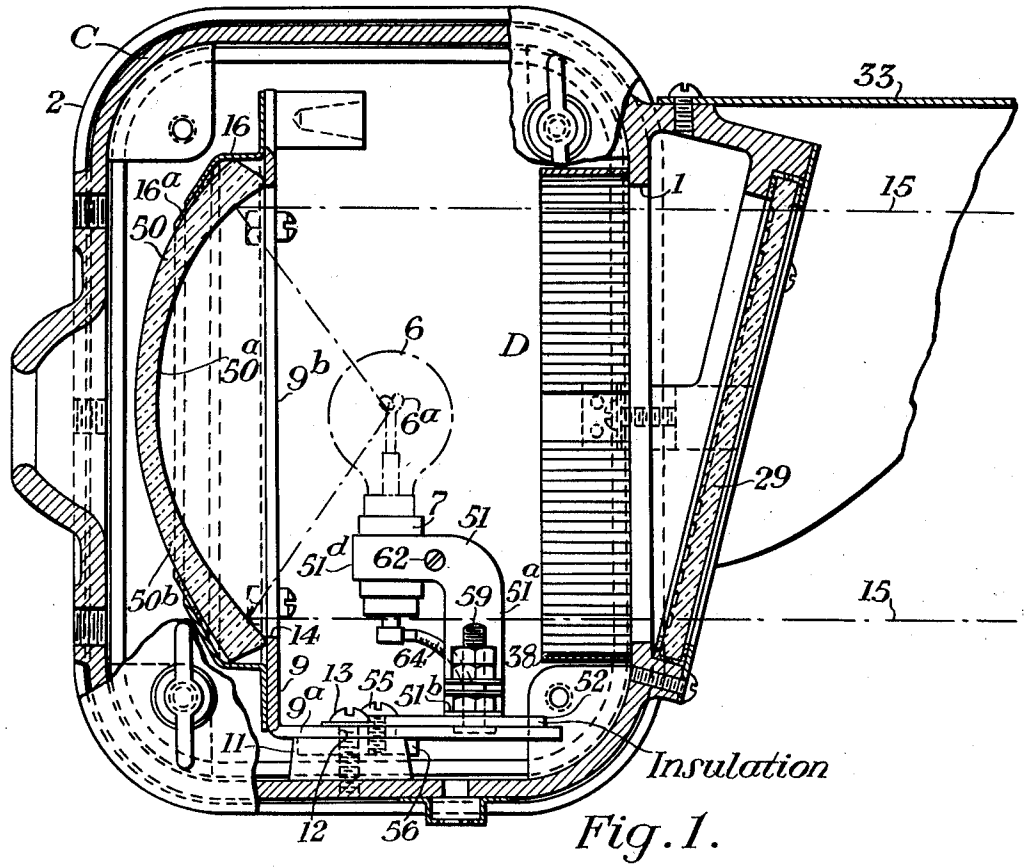


Fig. 1.

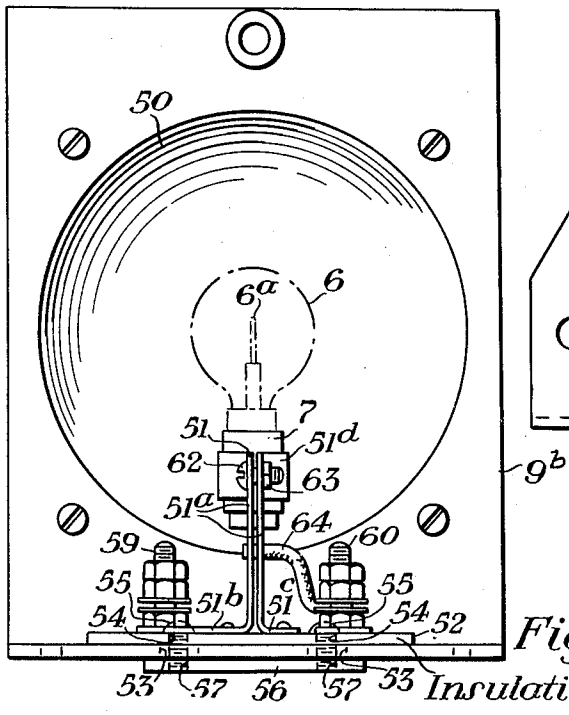


Fig. 2.

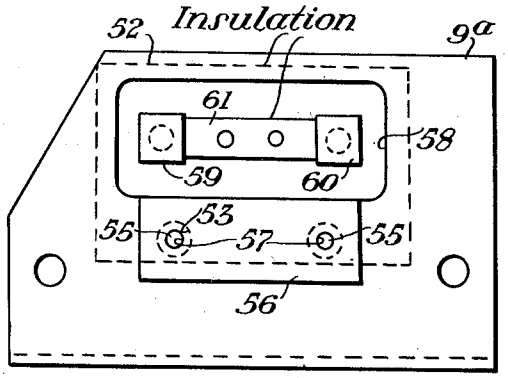


Fig. 3.

INVENTOR
Wesley B. Wells.
BY A. R. Turnill
HIS ATTORNEY

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LIGHT SIGNAL

Wesley B. Wells, Wilkinsburg, Pa., assignor to The Union Switch & Signal Company, Swissvale, Pa., a corporation of Pennsylvania

Original application October 6, 1932, Serial No. 636,488. Divided and this application January 18, 1934, Serial No. 707,129

3 Claims. (Cl. 240—41)

My invention relates to light signals, that is, to signals comprising a lamp and an optical device for projecting a beam of light from the lamp. One feature of my invention is the provision, in signals of this character, of novel and improved means for supporting the lamp.

The present application is a division of my copending application Serial No. 636,488, filed October 6, 1932, for Light signals.

I will describe one form of light signal embodying my invention, and will then point out the novel features thereof in claims.

In the accompanying drawing, Fig. 1 is a vertical longitudinal sectional view showing one form of light signal embodying my invention. Fig. 2 is a front view of the light projecting unit for the signal shown in Fig. 1. Fig. 3 is a bottom view of the light projecting unit shown in Fig. 2.

Similar reference characters refer to similar parts in each of the several views.

Referring first to Fig. 1, the light signal in the form here shown comprises the usual casing C provided in its front wall with a large aperture 1, and having its opposite sides closed by removable doors 2 which permit convenient access to the interior of the casing for inspection or repair of the signal.

Located within the casing C is a light projecting unit comprising a reflector 50 and an electric lamp 6 having a filament 6^a which is located at the focal point of the reflector 10. The reflector 50 is of the type known to the trade as a "Mangin mirror", and comprises a body of glass having a concave spherical unsilvered surface 50^a and a convex spherical silvered surface 50^b. In reflectors of the type described, the focal point is located on the axis of the reflector some distance in front of the forward end of the reflector, and the parts are so proportioned that the reflected rays form a concentrated beam of substantially parallel rays, as indicated by the dash lines 15, thus providing a very efficient light projecting unit.

The reflector 50 is supported in the desired position within the casing C by means of a suitable frame 9 comprising a flat plate bent to form a horizontal portion 9^a and a vertical portion 9^b. The horizontal portion 9^a rests on bosses 11 formed on the bottom of the casing C, and is provided with holes 12 through which clamping screws 13 which are screwed into threaded holes in the bosses 11 pass, thus securing the frame 9 to the casing. The vertical portion 9^b of the frame 9 is provided with a centrally located aperture 14 having substantially the same diameter as the inner diameter of the reflector 50 at its edge, and the reflector is clamped against the vertical portion of the frame 9, directly back of the hole 14, by means of a suitable annular clamping member 16 and suitable screws not shown in the drawing. A ring or layer 16^a of felt or other suitable material is interposed between the clamping member and the reflector to insure that the reflector will not be damaged by the clamping member.

The lamp supporting bracket, as here shown, comprises a single strip 51 of suitable conducting material such as brass or phosphor bronze, bent to form two parallel vertical legs 51^a which terminate at their lower ends in integral feet 51^b and 51^c, respectively, and at their upper ends in a substantially circular socket receiving portion 51^d. The feet 51^b and 51^c are oppositely disposed, and are secured, as by riveting, to an insulating bracket supporting plate 52 which, in turn, is secured to the horizontal portion 9^a of the frame 9 in a manner which I will now describe. As here illustrated, the horizontal portion 9^a of the frame 9 is provided with two holes 53, 53, and the bracket supporting plate 52, which rests directly on the horizontal portion 9^a, has two holes 54, 54 the centers of which are spaced the same distance apart as the centers of the holes 53, 53. The diameters of the holes 53, 53, however, are considerably larger than the diameters of the holes 54, 54. Passing through each hole 54 and the registering hole 53 is a screw 55, the shank of which is of such size as to fit snugly in the hole 54, so that there is considerable clearance between this screw and the hole 53. To hold the screws 55 in place, and to clamp the bracket supporting plate 52 to the frame 9, a clamping plate 56 is placed directly below the horizontal portion 9^a of the frame 9, and is provided with two screw-threaded holes 57 spaced the proper distance apart to receive the lower ends of the screws 55. It follows that by drawing up the screws 55 tightly in the holes 57, the bracket supporting plate can be clamped tightly in place on the frame 9. It also follows that by releasing the screws 55, the bracket supporting plate can be adjusted in any direction in a horizontal plane with relation to the frame 9 owing to the clearance between the screws and the holes 53, and the parts can then be clamped together by again tightening the screws.

The horizontal portion 9^a of the frame 9 is provided, directly below the bracket supporting plate, with a cutaway portion 58 (see Fig. 3),

which provides clearance for the rivets which fasten the lamp supporting bracket 51 to the plate 52, as well as for the heads of two terminal posts 59 and 60 which are mounted on the insulating bracket supporting plate 52. The terminal post 59 passes through a suitable hole in the foot 51^b of the lamp supporting bracket 51 and makes electrical contact with this bracket. The terminal post 60, however, does not pass through the foot 51^c of the bracket 50 and is insulated from this bracket. The terminal posts are prevented from turning by means of an insulating strip 61 which is riveted to the bracket supporting plate 52 by means of the same rivets which fasten the lamp supporting bracket 51 to the bracket supporting plate, and the ends of which strip engage the square heads of the terminal posts 59 and 60 in a manner which will be clearly apparent from an inspection of Fig. 3.

The socket receiving portion 51^d of the lamp supporting bracket 51 has a vertical axis and is offset rearwardly from the legs 51^a, as best seen in Fig. 1. The diameter of the socket receiving portion 51^d is such that when the socket 7 of lamp 6 is placed in this socket receiving portion, the portions of the strip where the legs merge into the socket receiving portion will be spread apart slightly. A screw 62 is passed through the two portions of the strip adjacent the socket receiving portion and is provided with a nut 63. It follows that by loosening the nut 63, the socket 7 may be moved up and down in the socket receiving portion to adjust the vertical height of the filament, and that when the socket has been moved to the proper position, it can be securely clamped in place by tightening the nut 63. It will be apparent from the foregoing that adjustments of the lamp filament in the horizontal plane may be made by adjusting the position of the bracket supporting plate 52 relative to the frame 9, so that provision is made for adjusting the lamp filament in all directions.

Electrical contact with the shell of the lamp socket 7 may be made through the terminal post 59 and lamp supporting bracket 51, while electrical contact with the central contact member of the socket 7 may be made by means of the terminal post 60 and a wire 64 which is connected with the terminal post and with the central contact member of the socket.

The reflector 50 is so proportioned and so disposed that light from the lamp 6, when the filament 6^a is located at the focal point of the reflector, will be projected by the reflector in the direction of the axis in a beam of substantially parallel rays.

Positioned directly back of the aperture 1 is a screen structure D, the function of which is to intercept light rays which enter the signal from the outside and to prevent these rays from being projected forward by the signal to give a phantom indication. Located in front of the aperture 1 is a cover glass 29 which serves to spread the light beam to the desired extent in the horizontal plane, and to direct a portion of the light downwardly for close-up indications. This screen structure D and cover glass 29, as well as the means for mounting them in the casing C, are described in detail in my copending application Serial No. 636,482, but are not described herein because they form no part of the invention covered by the present application.

A hood 33 of the usual construction is secured to the casing C above the cover glass to protect this glass from the direct rays of the sun.

Although I have herein shown and described only one form of light signal embodying my invention, it is understood that various changes and modifications may be made therein within the scope of the appended claims without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim is:

1. As a new article of manufacture a lamp supporting bracket comprising a single strip of relatively rigid material bent to form two parallel legs which terminate at one end in oppositely extending feet and at the other end in a substantially circular socket receiving portion having an axis which extends parallel to, but is offset from, the axis of said legs, and a screw passing through said bracket at the portion of the bracket where the legs merge into the socket receiving portion and providing means for decreasing the diameter of the socket receiving portion to enable a lamp socket to be clamped in an adjusted vertical position within the socket receiving portion.

2. A light projecting unit for a light signal comprising a frame having a vertical portion and a forwardly projecting horizontal portion, said vertical portion being provided with a central aperture and said horizontal portion being provided with two relatively large spaced holes, a reflector secured to the vertical portion of said frame directly back of said aperture, an insulating plate resting on said horizontal portion and provided with two relatively small holes which align axially with said relatively large holes, a second plate located underneath said horizontal portion and provided with threaded holes which align with both said relatively small and said relatively large holes, screws passing snugly through said relatively small holes and through the holes in said horizontal portion with considerable clearance and screwed into the threaded holes in said second plate, a lamp supporting bracket secured to said insulating plate and provided with vertically disposed socket receiving means, and a socket clamped in said socket receiving means in such manner that it is adjustable in a vertical direction.

3. A light projecting unit for a light signal comprising a vertical portion and a forwardly projecting horizontal portion, said vertical portion being provided with a central aperture and said horizontal portion being provided with two relatively large spaced holes and with a cutaway portion disposed adjacent said relatively large holes, an insulating plate resting on said horizontal portion and provided with two relatively small holes which align axially with said relatively large holes, a second plate located underneath said horizontal portion and provided with threaded holes which align with both said relatively large and said relatively small holes, screws passing snugly through said relatively small holes and through said relatively large holes with considerable clearance and screwed into the threaded holes in said second plate, a lamp supporting bracket comprising a single strip of relatively rigid conducting material bent to form two parallel vertical legs which terminate at one end in oppositely disposed horizontal feet and at the other end in a substantially circular socket receiving portion having a vertical axis which extends parallel to, but is offset from, the axis of said legs, means for fastening the feet of said bracket to said insulating plate directly above the cutaway portion in said horizontal portion of said frame, a socket in said socket receiving portion, a screw passing through said

bracket at the portion of the bracket joining its legs and the socket receiving portion for clamping the socket in an adjusted vertical position in the bracket, two terminal posts mounted on said insulating member one electrically connected with said bracket and the other insulated from said bracket, and an insulating strip secured to said insulating plate by the same means which fastens the lamp supporting bracket to said insulating plate and cooperating at its ends with the heads of said terminal posts to prevent them from turning.

WESLEY B. WELLS.