

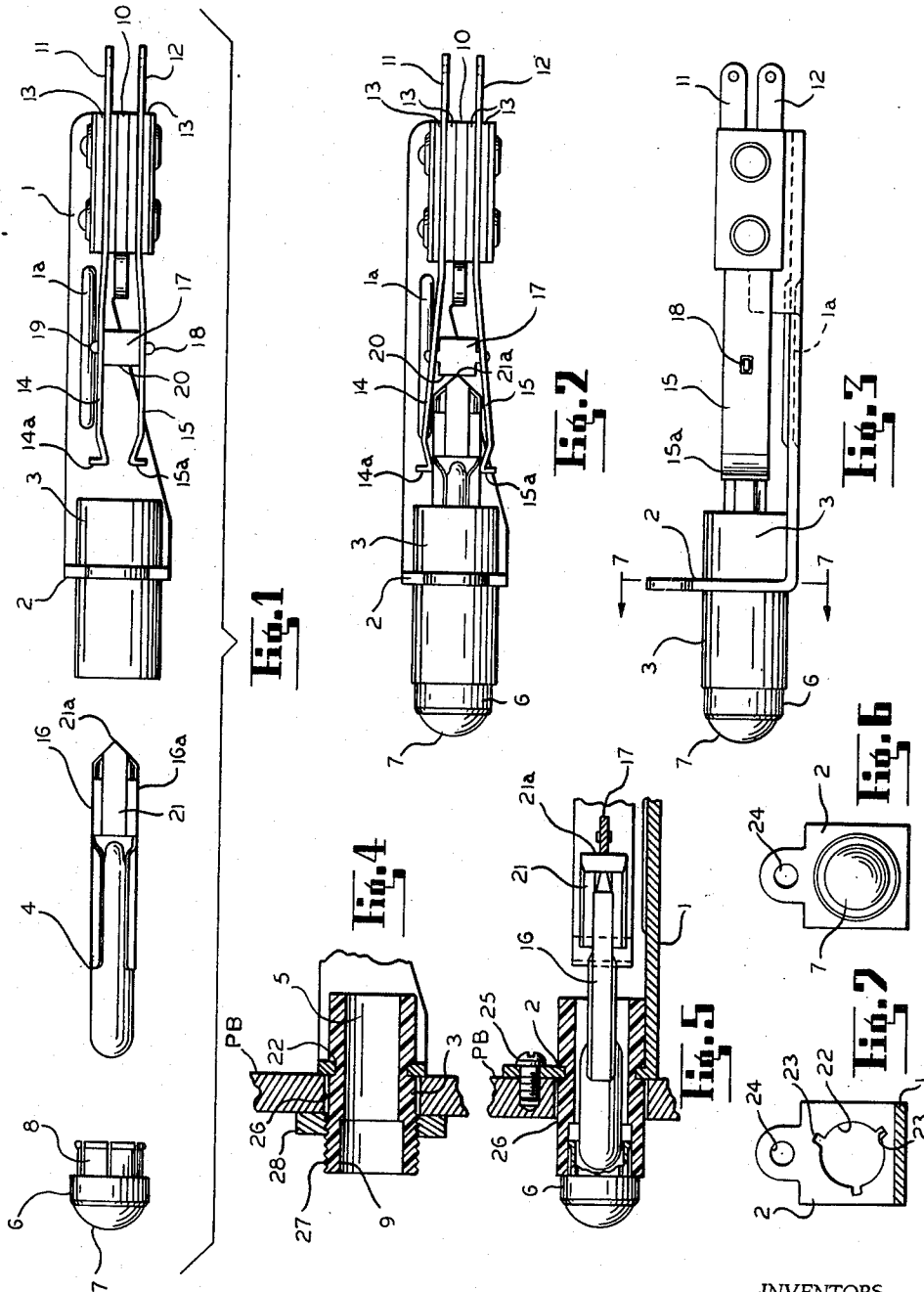
July 26, 1960

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2,946,994

SIGNAL LAMP AND HOLDER THEREFOR

Filed Feb. 26, 1959



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2,946,994

SIGNAL LAMP AND HOLDER THEREFOR

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Filed Feb. 26, 1959, Ser. No. 795,662

3 Claims. (Cl. 340—381)

This invention relates to an improved signal lamp holder sometimes referred to as a lamp jack.

One object of the present invention is to provide an improved signal lamp holder which is easily manufactured.

Another object of the present invention is to provide an improved signal lamp holder with a simplified holding and contact making structure for the lamp.

Other objects and important features of the invention will be apparent from the specification following taken with the drawings which together describe and illustrate a preferred embodiment of the invention and what is now considered to be the best mode of practicing the principles thereof. Other embodiments may be suggested to those having the benefit of the teachings herein, and such other embodiments are intended to be reserved especially as they fall within the scope of the subjoined claims.

In the drawing:

Figure 1 is an exploded layout view of the several elements utilized in the invention;

Figure 2 is a view of the same elements shown in Figure 1, but illustrating these elements in an assembled position;

Figure 3 is a side view of the assembly illustrated in Figure 2;

Figure 4 is a sectional illustration of a portion of the assembly illustrated in Figures 2 and 3, and showing one form of means whereby the assembly can be held to a panel board or the like;

Figure 5 is a sectional illustration of a further portion of the assembly illustrated in Figures 2 and 3, and showing another form of means for securing the assembly to a panel board;

Figure 6 is an end view of the signal lamp illustrated in Figure 5; and

Figure 7 is a transverse sectional view taken substantially along the line 7—7 of Figure 3 looking in the direction of the arrows.

Like elements are designated by like characters throughout the specification and drawing.

With special reference now to the drawings, and reference being made in the first instance to Figure 1, 1 designates an elongated support which is provided with a laterally offset ear 2 at one end thereof. 3 designates an insulating bushing supported within the ear 2. A light or lamp element 4 is adapted for insertion into the opening, see Figure 4, in the bushing, and an end cap 6, provided with a translucent portion 7 is adapted to be received within the outer end of the bushing 3. The end cap 6 is provided with a split resilient ferrule 8 which is snapped into the enlarged portion of the bore designated at 9, see Figure 4, so as to be frictionally held therein when the end cap and bushing are assembled in the position illustrated in Figures 2 and 3.

The main body portion of the support 1 may be formed as a flat plate and provided with an upstanding portion 10. The main body portion is formed in a stamping operation and is preferably embossed as at 1a to give

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stiffness thereto. The upstanding portion 10 supports electrical terminals 11 and 12 which are held in the spaced relation illustrated in Figures 1 and 2 and separated by a suitable insulation material 13.

The terminals 11 and 12 are elongated in a direction generally parallel to the axis of the supporting body and terminate in resilient contact arms 14 and 15. The ends of the contacting arms 14 and 15 are turned outwardly as shown at 14a and 15a so as to easily receive the contact end portions 16 and 16a of the light element 4.

An element 17 is interposed between the arms 14 and 15 and includes reduced tab portions 18 and 19 which are received within apertures in the arms 14 and 15, one such aperture appearing clearly in Figure 3. The element 17 includes a forward surface 20 opposed to the opening in the bushing 3 and spaced from the outer end of the bushing by an amount on the order of the length of the light element 4.

The intermediate portion of the element 17 holds the resilient contact arms 14 and 15 in the spaced apart position illustrated in Figure 1, against the bias in the arms 14 and 15.

The contact end portions 16 and 16a of the light element 4 preferably includes an insulating member 21 positioned between the two contacts of the element and provided as appears in Figure 5. When the light element 4 is inserted into the bushing 3 and moved toward the element 17, the insulating member 21 abuts the forward surface 20 of the elements 17. The light element 4 is loosely received within the bushing 3 so that it is readily inserted therein.

The insulating member 21 is tapered to an entrant edge 21a. The contact arms 14 and 15 which are provided respectively with ears 14a and 15a extending at right angles thereto prevent entrant movement of the lamp 4 except when the entrant tapered edge 21a is between the contact arms 14 and 15 and does not straddle the ears 14a and 15a. The contact arms cannot thereby be unduly deformed, and proper contact is made with lamp terminals 16 and 16a.

The bushing 3 which may be made of a nylon plastic is molded into the offset ear 2. The bushing 3 is molded integrally with the supporting body 1 which is inserted into the mold for the bushing 3. The ear 2 has an aperture 22, see Figure 7, through which the bushing 3 extends, and in order to provide a good bond of the bushing 3 with the ear 2, the aperture 22 has a plurality of small radially extending slots 23 into which the molding material flows during molding. The bushing 3 is thereby constrained against turning in the ear 2.

The offset ear portion 2 of the supporting body has an upper aperture 24 therein to allow attachment of the assembly to any convenient supporting member. As seen in Figure 5, the assembly can be secured to a panel board PB by a mounting screw 25 tapped into the inner side thereof. As seen in Figure 5, the bushing 3 extends through an opening 26 in panel board PB.

Alternately, and as seen in Figure 4, the bushing 3, which is secured against rotation with respect to the frame or support 1, is externally threaded as at 27. A lock nut 28 cooperating with the threads 27 holds the assembly to the panel board PB, the offset ear 2 being held against the inner side thereof. As with the embodiment seen in Figure 5, the bushing 3 extends through the opening 26 in the panel board.

In use the light element is easily inserted into the bushing and is securely held in the position illustrated in Figure 5 by the contact arms 14 and 15 which frictionally engage the contacts 16 of the light element. Lateral displacement of the light element within the bushing is restricted by the member 17.

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By using the element 17 between the contact arms 14 and 15, the arms are held in a preliminary spread apart position against the inherent bias in the arms which tends to move them together. Thus the light element is more readily inserted into and removed from the space between the contact arms.

While the invention has been described with reference to the accompanying drawing which together illustrate a practical embodiment thereof, its scope is intended to be limited only by the claims here appended.

We claim:

1. A signal lamp and holder assembly including an elongated supporting body having terminals at one end thereof, said body having a laterally offset portion at the other end thereof, said portion having an aperture therein, an insulating bushing positioned in said aperture with the axis thereof extending generally parallel to the axis of said body, a light element removably inserted in said bushing, said terminals having resilient arms extending toward said aperture and biased toward one another, the inner end of said light element having terminal portions in contact with said arms, and a spacing element positioned between said arms, said element having an enlarged medial portion and reduced end portions, said end portions being received in apertures in said arms, whereby the medial portion limits movement of said arms toward one another while said end portions allow movement of said arms away from one another.

2. A signal lamp and holder assembly including an elongated supporting body having terminals at one end thereof, said body having a laterally offset portion at the other end thereof, said portion having an aperture therein, an insulating bushing positioned in said aperture with the axis thereof extending generally parallel to the axis of said body, a light element removably inserted in

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said bushing, said terminals having resilient arms extending toward said aperture and biased toward one another, the inner end of said light element having terminal portions in contact with said arms, and a spacing element positioned between said arms, said element having an enlarged medial portion and reduced end portions, said end portions being received in apertures in said arms, whereby the medial portion limits movement of said arms toward one another while said end portions allow movement of said arms away from one another, said element having a surface opposed to the inner end of said bushing and spaced from the outer end of said bushing by an amount on the order of the length of said light element, thereby presenting an abutment to the inner end of said light element and limiting the inward movement thereof.

3. The structure of claim 2 wherein said resilient arms have tips extending substantially at right angles thereto, and wherein said light element is tapered to provide an entrant edge movable between said resilient arms, and stopped by said tips, said tips extending at right angles blocking said light element against movement to a position between said resilient arms except when said tapered edge is introduced between said tips.

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