

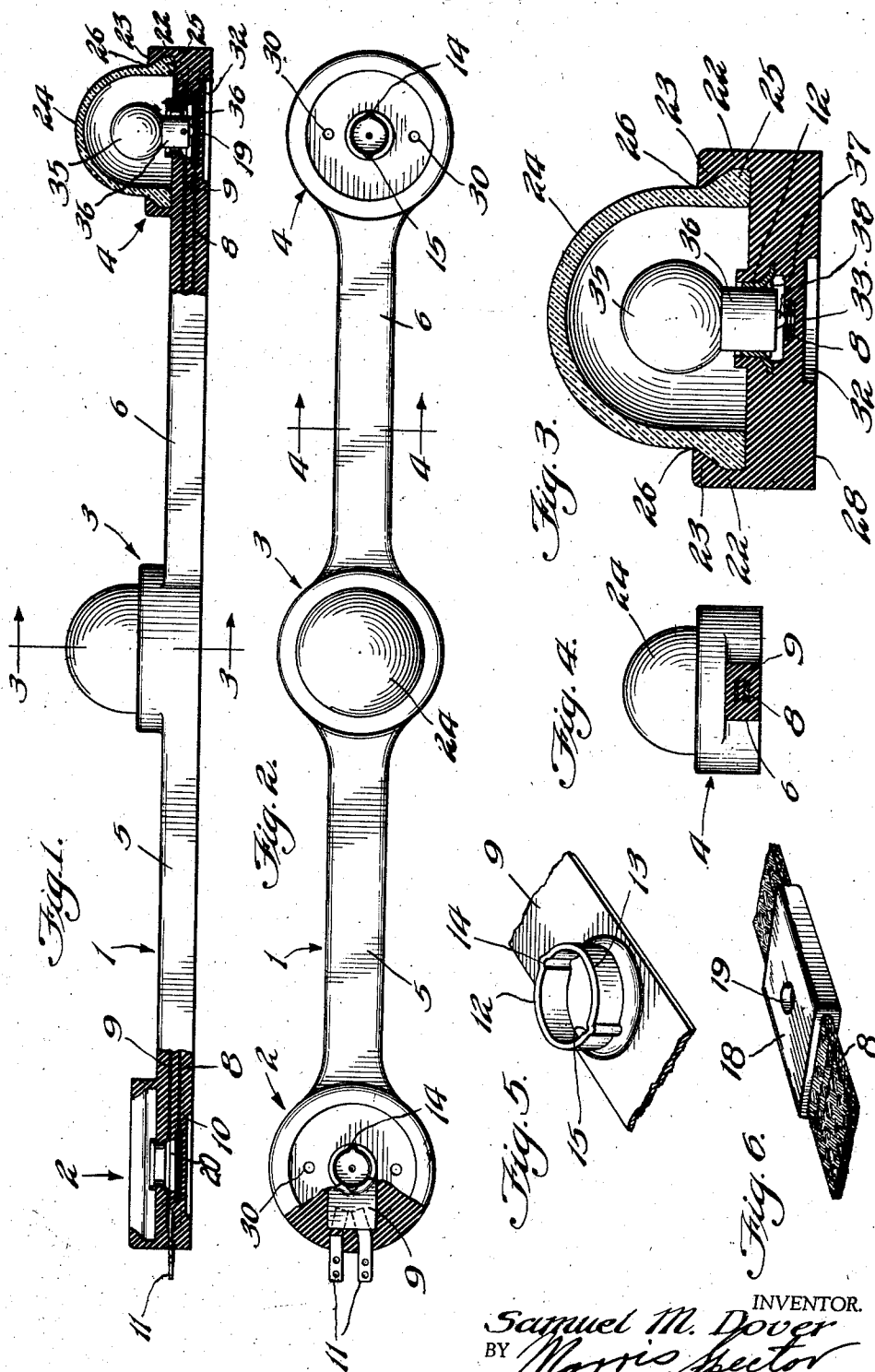
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SIGNAL LAMP UNIT

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SIGNAL LAMP UNIT

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This invention relates to signal lights, and more particularly to such lights as are adapted to be mounted on the outside of automobile trucks or the like, and is specially concerned with a multiple light unit, such as shown, for instance, in my Patent No. 2,033,692, issued March 10, 1936, and No. 2,093,806, issued September 21, 1937, upon which the present invention is an improvement.

It is one of the objects of the present invention to provide a light unit of the above mentioned character which may be secured to the body of an automobile and which has sufficient flexibility to allow it to be flexed to conform with a curved contour of an automobile body to which it is to be secured.

It is a still further object of the present invention to provide a light unit of the above character with an improved contact structure for making contact with an electric light bulb. The contact structure comprises two spaced strips of conducting material embedded in a body of rubber or other flexible insulating material and separated from one another by said rubber. One of the strips is stamped or otherwise formed to provide one or more electric light bulb sockets. The other strip is positioned beneath the first strip so that the tip of a bulb inserted into a socket engages said other conductor strip. The rubber is vulcanized around the strips thus embedding the strips in the body of rubber and holding them against displacement due to vibration or the like.

It is a still further object of the present invention to provide a light unit of the above mentioned character wherein the rubber body is so constructed as to facilitate the maintenance of a resilient pressure contact against the tip of an electric light bulb, which pressure serves not only to maintain electrical contact with the bulb but also serves to maintain the bulb against vibration or other objectionable movement within the socket.

The attainment of the above and further objects of the present invention will be apparent from the following specification taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

Figure 1 is a side view of a lighting unit constructed in accordance with the present invention, certain parts of the unit being broken away to illustrate the construction;

Figure 2 is a plan view of the unit of Figure 1;

Figure 3 is a transverse sectional view taken

along the line 3—3 of Figure 1 and looking in the direction of the arrows;

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 2 and looking in the direction of the arrows; and

Figures 5 and 6 are fragmentary perspective views of the two contact making strips.

In Figure 1 I have shown, by way of illustration, a multiple light unit 1 having three lights thereon. This is by way of illustration only, as the unit may have a larger or lesser number of lights thereon. The light unit 1 comprises an integral body of rubber having enlarged heads 2, 3 and 4 joined by shank portions 5 and 6 integral therewith and thus forming a comparatively long and narrow unit. Two metallic contact strips 8 and 9 are embedded in the rubber of the lighting unit, one above the other, and are separated from one another throughout their entire length by the rubber of the body of the lighting unit. In the molding operation the strips 8 and 9 are separated by a layer 10 of rubber which becomes integrally united with the rest of the rubber during vulcanization. The contact strips 8 and 9 extend lengthwise of the light unit and, at one end, are spread apart laterally to provide terminals 11—11 for establishing circuit connections thereto, and through the terminals establishing circuit connections to the three electric light bulbs in a manner to be presently set forth.

The conductor strip 9 has a socket 12 formed therein at the center of each head 2, 3 and 4. The socket 12 may be formed in any desired manner as, for instance, by stamping a sheet steel strip 9 to form a hole therein and then punching the metal to form a peripherally extending flange or circular sleeve 13 having longitudinally extending grooves 14—15 for receiving the pin on the stem of an electric light bulb. The contact strip 8 consists, preferably, but not necessarily, of a copper braid having narrow brass or copper sleeves 18 clamped thereon and located centrally of each of the sockets 12. Each sleeve 18 consists of a narrow piece of metal folded around the braid and pressed into pressure engagement with the braid. The sleeves 18 thus constitute contacts for electric light bulbs. The strip 8 extends the circuit to the sleeves 18 while at the same time not interfering with bending or flexing of the lighting unit.

It is to be noted that the strip of rubber 10 between the contact strips 8 and 9 has a circular hole or opening 20 therein at the center of each head 2—3—4, opposite the sockets 12. This

permits insertion of a light bulb into the socket 12 until the tip of the bulb engages a sleeve 18 of the strip 8.

Each head 2—3—4 of the light unit includes an upstanding circular flange 22 having an inwardly extending rim 23 that acts as a bezel for a light lens 24 that is provided with an outwardly projecting peripheral flange 25 at its base. The rubber is sufficiently flexible to permit deformation of the rim 23 to allow insertion of the flange 25 of the bulb, and is sufficiently resilient to spring back and form a watertight, dustproof seal at 26 between the lamp lens 24 and the rim 23. It is, of course, to be understood that specifically different means may be provided for holding the lens 24 in place.

The bottom of the unit is comparatively flat, as indicated at 28, to facilitate mounting of the unit flat against the surface of the body of an automobile to which the unit is to be secured. The lighting unit is sufficiently flexible to permit flexing of the same to follow the curvature of a curved body to which it is secured and yet lie flush against that body. The unit may be secured in place in any desired manner as, for instance, by nails or screws driven through holes 30 formed in each of the three heads 2, 3 and 4, thus securing the unit to the body of the automobile.

The base of the unit is provided with cavities or spaces 32 opposite each head 2—3—4, and centrally located with respect to the socket 12. This leaves a thin layer of rubber 33 at the base of the unit opposite each socket, and an air pocket at 32 between the lighting unit and the structure to which the unit is secured. This permits flexing of the rubber at 33 towards the base 28 of the unit.

An electric light bulb 35 having a cylindrical stem portion 36 is inserted into the socket 12. The stem 36 has a pin 37 provided in the usual manner, which pin slides through the grooves 14—15 in the socket. Thereafter the light bulb is turned through a small angle so that the pins prevent retraction of the bulb through the bayonet joint thus formed. The tip of the bulb, indicated at 38, presses against the contact 19 of the strip 8. The dimensioning is such that the tip of the bulb presses the contact strip 8 downwardly a small amount so that the contact strip 8 and the rubber 33 exert a pressure against the tip 38 and thus serve to hold the bulb snugly in place against rattling, vibration or the like. The provision of the air pocket 32 permits the rubber 33 and the strip 8 to be flexed downwardly against their natural resiliency so that they exert the requisite pressure against the tip of the light bulb.

Each of the three lights of the multiple light unit is completely sealed at the base by the integral construction of the body of the rubber, and is sealed at the lens by the tension of the rubber rim 23 around the lens.

In compliance with the requirements of the patent statutes I have here shown and described a preferred embodiment of my invention. It is, however, to be understood that the invention is not limited to the precise construction here shown, the same being merely illustrative of the principles of the invention. What I con-

sider new and desire to secure by Letters Patent is:

1. A light unit comprising a comparatively long and narrow body of flexible rubber-like material having a plurality of spaced holes therein for receiving electric lamp bulbs, circuit connections embedded in the body and extending to the holes and comprising two superposed metallic strips separated from one another throughout their entire length, one of said strips comprising a flat, narrow, metal sheet having a hole therein opposite each of the holes in said body for permitting the base of an electric light bulb to extend therethrough into contact with the other strip, said other strip comprising a flexible braid to facilitate flexing of the unit, said one strip having a peripheral flange around the hole forming a socket for the stem of the light bulb.

2. A multiple signal light unit adapted to be secured to a support and comprising a comparatively long and narrow body of flexible molded material, a pair of juxtaposed spaced apart conductors embedded in the molded body and extending lengthwise thereof, the upper conductor comprising a flat narrow metal sheet having a plurality of holes formed therein and an open ended sleeve surrounding each hole, said sleeves constituting sockets for receiving electric light bulbs, the conductor below the flat sheet being exposed at the center of each sleeve to constitute tip terminals for contacting the tips of bulbs inserted in said sleeves, said tip terminals being backed by the molded material and being flexible in a direction away from the front face of the unit, the back of the unit having a cavity formed opposite each tip terminal to permit flexing of the molded material which is back of the tip terminal in a direction towards the bottom surface of the unit even while the bottom surface is fixed against movement.

3. A multiple signal light unit adapted to be secured to a support and comprising a comparatively long and narrow body of flexible molded material to permit flexing of the same to bring the bottom thereof to the same contour as that of the support to which the unit is to be secured, a pair of juxtaposed spaced apart conductors embedded in the molded body and extending lengthwise thereof, the upper conductor comprising a flat narrow metal sheet having a plurality of holes formed therein and an open ended sleeve surrounding each hole, said holes forming sockets for receiving electric light bulbs, the conductor below the flat sheet being flexible braid to facilitate flexing of the unit and having contact pieces secured thereto and exposed at the center of each sleeve to constitute tip terminals for contacting the tips of bulbs inserted in said sleeves, said tip terminals being backed by the molded material and being yieldable in a direction away from the front face of the unit against the resilient action of the subjacent molded material, the back of the unit having a cavity formed opposite each tip terminal to permit flexing of the molded material which is back of the tip terminal in a direction towards the bottom surface of the unit even while the bottom surface is held fixed against movement.

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