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CORNER LIGHT SOCKET FOR REFRIGERATOR

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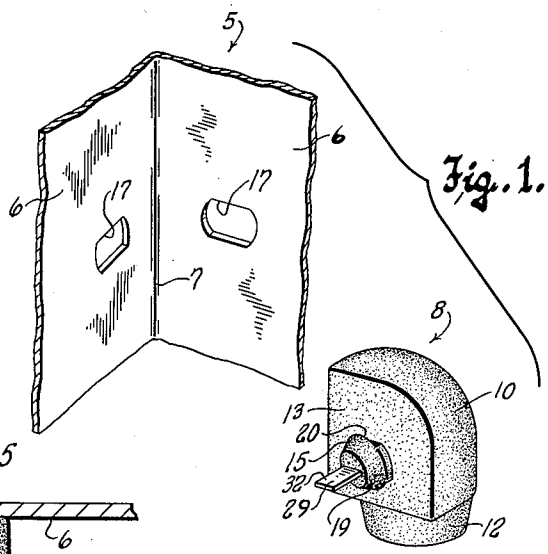


Fig. 1.

Fig. 2.

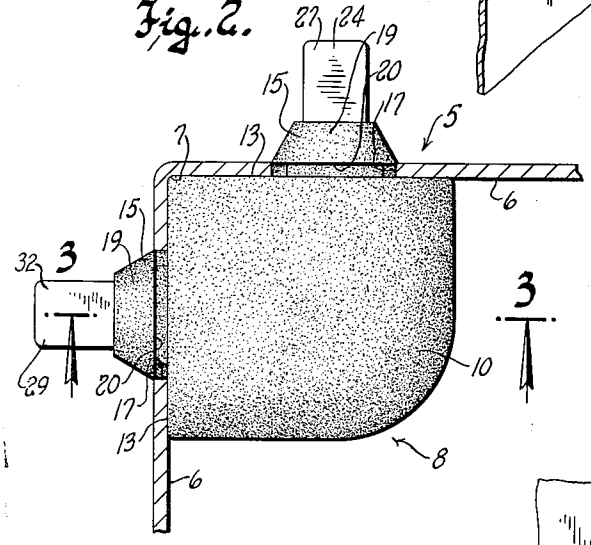


Fig. 3.

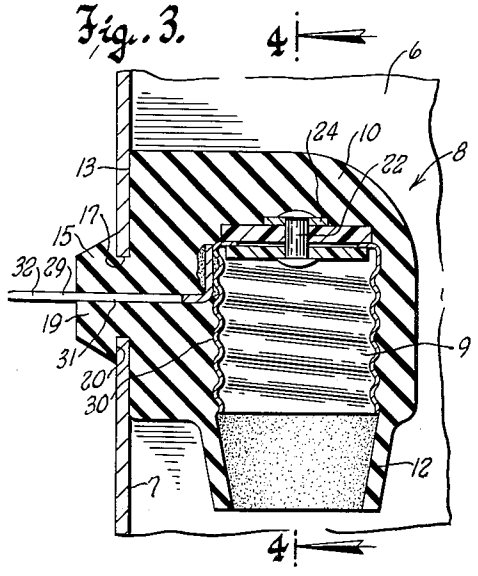
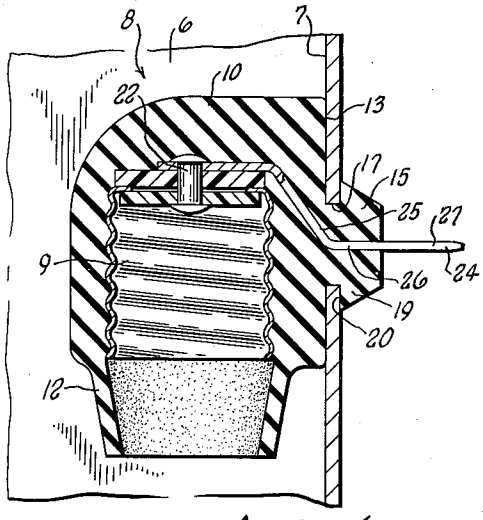


Fig. 4.



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CORNER LIGHT SOCKET FOR REFRIGERATOR

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2 Claims. (Cl. 339—59)

This invention relates to sockets for mounting a light bulb by which the interior of an electric refrigerator or the like is illuminated, and refers more particularly to a socket of the type which is adapted to be mounted on an apertured panel that provides the inner wall surface of a refrigerator cabinet or the like.

The socket for a light bulb that illuminates the interior of an electric refrigerator or deep freezer cabinet usually comprises a cup-shaped receptacle or shell, adapted to receive the base of a light bulb, molded into a body of resilient insulating material. Heretofore it has been customary to mount such a socket in a refrigerator or similar cabinet by having a part of the resilient body extend through a closely fitting hole in an aperture in one of the sheet metal panels defining the interior surface of the cabinet. Conventionally the resilient body of the socket had an integral rubber flange or lip that overlay the marginal edge portion of the panel, adjacent to the aperture, and provided a seal around the aperture by which passage of moisture therethrough was prevented. One or more other flanges on the body, at the opposite side of the panel, opposed said one flange and cooperated therewith in retaining the body against displacement out of the aperture. Since the portion of the socket body which extended through the aperture in the panel had a substantial girth, the aperture had to be relatively large, and at the same time the sealing lip or flange on the socket was narrow in comparison to the size of the aperture, and consequently there could not always be assurance that the flange or lip would provide a good seal around the aperture. Moreover, the socket was customarily installed by squeezing it through the aperture, taking advantage of the resilient flexibility of the body and of the integral flanges thereon; and because of the substantial size of the body portion that passed through the aperture, installation of such sockets without a tool was not always as easy as might be desired.

By contrast, it is an object of this invention to provide a socket of the character described having a resiliently flexible body with integral securement means thereon which projects through a relatively small, closely fitting hole in a wall panel on which the socket is mounted, and wherein a substantial area of body surface flatwise overlies a marginal edge portion of the panel, around the hole therein, to provide a seal which prevents the passage of moisture through the aperture.

Another and very important object of this invention resides in the provision of a refrigerator light socket of the character described which fits snugly into an interior corner of a refrigerator or freezer cabinet or the like and thus occupies space that would ordinarily be wasted, and which moreover has integral securement means that engage in both of the wall panels that define the corner in which the socket is mounted to thus provide an unusually secure but readily installed mounting for the socket.

Another object of this invention resides in the provision of a refrigerator light socket of the character described having a pair of relatively small protuberant securement members thereon, each integral with the resiliently flexible body of the socket, which securement members may be very readily engaged in apertures in adjacent corner forming panel portions at the interior of a refrigerator cabinet or the like, and which securement members, moreover, have electrical conductors or terminals projecting from their ends.

It is also an object of this invention to take advantage of the construction of terminals for refrigerator light sockets shown in my co-pending application, Serial No. 685,148, filed September 20, 1957, and to provide a socket utilizing such terminals wherein the exposed portions of the terminals will be separated by a substantial distance from one another.

Thus, in general, the objects of this invention are to provide an improved refrigerator light socket of the character described which occupies the least useful space in a cabinet interior, is easier to install than prior sockets, remains more securely in place, provides a better seal with the apertured panel means in which it is installed and permits ready connection of electric conductors thereto.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawing illustrates one complete example of the physical embodiment of the invention constructed according to the best mode so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a group perspective view showing a refrigerator light socket of this invention in disassembled relationship to a portion of a wall panel on which the socket is adapted to be installed;

Figure 2 is a top elevational view of a socket of this invention installed in a cabinet wall panel;

Figure 3 is a vertical sectional view taken on the plane of the line 3—3 in Figure 2; and

Figure 4 is a vertical sectional view taken on the plane of the line 4—4 in Figure 3.

Referring now more particularly to the accompanying drawing, in which like numerals designate like parts throughout the several views, the numeral 5 designates generally a pair of sheet metal panels defining the interior wall surfaces 6 of a refrigerator or deep freezer cabinet or the like and converging toward a junction with one another at the inner corner of the cabinet designated by 7. The socket of this invention, designated generally by 8, is adapted to be mounted in the corner portion of the wall, as best seen in Figure 2, where the socket and the light bulb (not shown) which it carries will occupy what is usually the least useful space in the cabinet and will thus be out of the way.

The socket of this invention comprises generally a cup-shaped metal shell 9 in which the base of a light bulb is adapted to be received and which is imbedded in a resiliently flexible insulating body 10 of rubber, neoprene or the like. The shell is preferably molded into the body and the body has a downwardly projecting annular lip 12 extending around and beneath the mouth of the shell, which engages the glass bulb of a lamp having its base screwed into the shell, to seal moisture out of the shell.

It is a distinguishing feature of the socket body of this invention that two of its sides 13 are flat and are adapted to flatwise overlie the inner faces 6 of the corner defining wall panels upon which the socket is mounted. These

flat surfaces 13 on the body are disposed at an angle to each other, which angle, of course, corresponds accurately to the included angle between the inner surfaces of the panels on which the socket is mounted. Thus the angle between the flat sides 13 of the body will normally be a right angle, disposing the flat sides of the body perpendicular to one another and with their surfaces parallel to the axis of the shell, but it will be understood that any other desired angle between these surfaces may be selected, depending upon the angle between inner surfaces at the corner 7 in which the socket is mounted.

Projecting from the medial portion of each of the flat surfaces 13 is a protuberant button-like securement member 15 which is integral with the body and formed of the same resiliently flexible insulating material. Each of the securement members is adapted to engage in a closely fitting hole 17 in the wall panel and to snugly project through the same to hold the socket in place, as best seen in Figure 2, with the flat surfaces 13 of the body snugly flatwise overlying the interior surfaces of the panels at the corner 7.

Preferably each securement member has an enlarged head 19 at its outer end, providing small shoulders 20 which face the adjacent flat surface 13 of the body and are spaced therefrom by a distance equal to the thickness of the panel. The head on each securement member is of course readily deformable because of its resiliency, and can therefore pass easily through the hole 17 in the panel during installation of the socket, although the shoulders 20 resist axial displacement of the securement member out of the hole. While desirable, the enlarged heads on the securement members are not absolutely necessary, particularly where the axes of the securement members are disposed at, or nearly at, right angles to one another, since in that case each securement member resists axial withdrawl of the other from its hole. For this reason the shoulders 20 may be relatively small and need not extend completely around the securement member.

The socket of this invention advantageously utilizes the electrical terminals disclosed in my aforesaid copending application. The center terminal of the shell may comprise a rivet 22 to which is pivotally secured an elongated strip 24 of conductive metal which extends through the body of the socket, as at 25, and axially through one of the securement members, as at 26, said strips being bent to a slight S-shape along its length to dispose it in this fashion. A projecting end portion 27 of the metal strip provides a male terminal connectable with a suitable female connector.

Similarly, a strip 29 of conductive metal, spot welded or otherwise secured to the side wall 30 of the shell, extends axially through the other securement member, as at 31, and projects therebeyond, as at 32, to provide the other terminal. Since the terminals 27 and 32 project from the right angularly disposed securement members they are spaced apart a substantial distance, and in fact are located around the outside of corner 7 from one another. This positional relationship between the terminals assures against the possibility of short circuiting, not only as between the terminals themselves but also the external conductors (not shown) which are connected to the terminals. Obviously, these conductors may be connected to the terminals in any conventional manner, as by female type connectors soldered to the conductors and slipped onto the terminals; and, if desired, the connectors may be enclosed in rubber cups which might even fit over the retaining members.

From the foregoing description, taken together with the accompanying drawing, it will be apparent that this invention provides an improved light bulb socket for refrigerator and freezer cabinets and the like which may be easily installed in a corner of a cabinet, in what is otherwise substantially unuseable space, and which affords an unusually secure mounting and a good seal between its body and the panel on which it is mounted, and that the electrical terminals of the socket of this invention are well separated from one another to avoid the possibility of short circuiting.

What is claimed as my invention is:

1. An electric light socket for installation in the interior of a refrigerator cabinet, comprising: a socket body of resiliently deformable insulating material having a pair of substantially flat faces disposed at an angle to one another such that their planes intersect, said flat faces being adapted to flatwise overlie the inner surfaces of a pair of adjacent refrigerator wall panels at a corner thereof; an integral resiliently deformable protuberant retaining member projecting from the medial portion of each of said flat faces on the body, with its axis substantially normal to the face from which it protrudes, said retaining members being engageable, by reason of their resilience and the resilience of the body, in holes in said adjacent refrigerator wall panels and being cooperable with one another and with the panels, by reason of the angular disposition of their axes, to hold the socket body in place with its flat faces overlying marginal edge portions of the panels around the holes therein, to provide a seal between the socket body and the panel; said socket body also having a well therein opening to an outer surface other than said angularly disposed faces; means in said well to receive and hold the base of an electric lamp; contacts mounted in the socket body and exposed at the interior of said well to be engagable by the terminals of an electric lamp received in the well; and terminals for said contacts extending therefrom through said protuberant retaining members.

2. The light socket of claim 1 wherein each of said protuberances has an integral resiliently deformable enlarged head at its outer end providing a shoulder spaced from and opposing said flat face of the body and engageable with the surface of a wall panel remote from that which the flat face of the body overlies to preclude displacement of the protuberance through the hole in the panel and to maintain said flat face of the body in snug sealing engagement with the panel.

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