Nov. 15, 1966 D. W. HERRICK 3,286,219

LAMP SOCKET

Filed July 20, 1964

Fig. 1

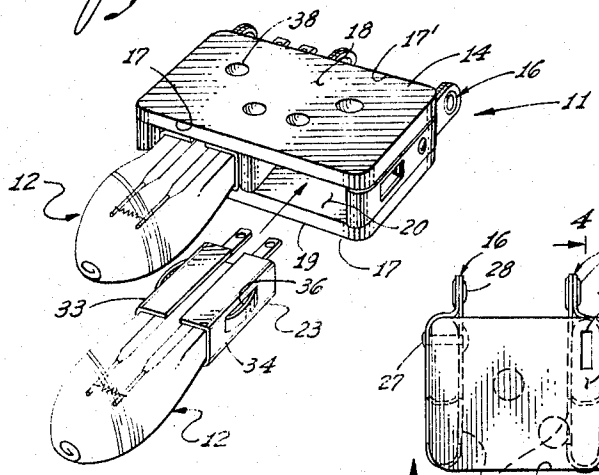


Fig. 2

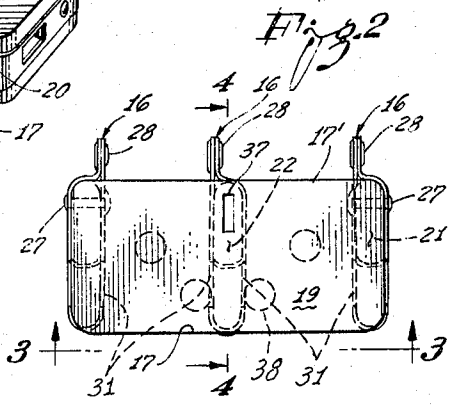


Fig. 4

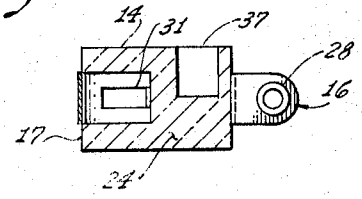


Fig. 3

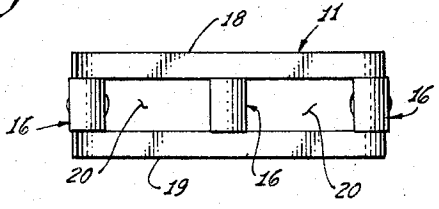


Fig. 5

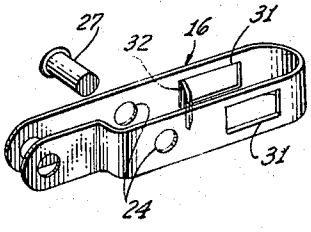
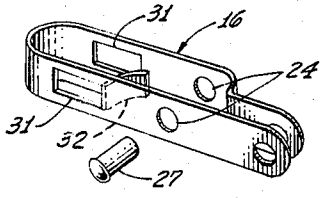


Fig. 6



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3,286,219

LAMP SOCKET

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3 Claims. (Cl. 339—154)

This invention pertains to incandescent lamp sockets and more particularly to sockets adapted to have incandescent lamps mounted therein the mounting or end portions of which are rectangular in cross-section.

Frequently it becomes necessary to mount incandescent lamps in spaces of small and unusual configuration not suitable for the mounting of lamps of normal configuration, for example—a space having a fairly flat configuration. The base or mounting means of lamps—mounted in spaces of the type described above—necessarily must also be of fairly flat construction. In such cases the base or mounting portion of a lamp usually assumes a rectangular configuration one dimension being quite small with respect to the other. In order to conserve a maximum of space a socket adapted to receive and retain such lamps therein must also be fairly flat and of rectangular configuration. A specific installation of a type utilizing lamps having rectangular mounting means and a corresponding socket are shown and described in our copending application pertaining to an aerial gun sight, filed April 13, 1964. To the best of applicant's knowledge, a socket adapted to receive, retain and provide good electrical contact for a lamp of the above type is not available, this statement is believed to be true although lamps of this type are now available.

Accordingly it is an object of this invention to provide a socket adapted to receive a fairly flat incandescent lamp, the latter having a substantially flat base portion which is rectangular in cross-section.

Although the characteristic features of the present invention are particularly pointed out in the appended claims, the invention itself, also the manner in which it may be carried out, will be better understood by referring to the following description taken in connection with the accompanying drawings forming a part of this application and in which:

FIGURE 1 is a perspective view of the lamp socket as disclosed herein, the figure showing the manner in which lamps are installed in the socket and removed therefrom.

FIGURE 2 is a bottom plan view of the lamp socket of FIGURE 1.

FIGURE 3 is a front elevational view of the socket of FIGURE 2 as viewed along the line 3—3 of the latter figure.

FIGURE 4 is a view taken along the line 4—4 of FIGURE 2.

FIGURES 5 and 6 are perspective views of the opposite sides of the holding means of the socket illustrated in FIGURE 1.

Referring to the drawing, FIGURE 1 shows a socket **11** of the type disclosed herein adapted to have a plurality of incandescent lamps **12** mounted therein. The socket comprises a body portion **14** and a plurality of contact elements **16** mounted therein substantially as shown in FIGURE 1.

The body portion **14** is fabricated of porcelain or any good dielectric material. The embodiment of the socket **11** shown in FIGURES 1, 2 and 3 is designed to accommodate two (2) lamps, however, it will be apparent that the socket may be designed to receive one or any number of lamps. The portion **14** includes side walls **18** and **19**, end walls **21** and a dividing wall **22**. The side walls **18** and **19** have a parallel relation separated by the end and dividing walls **21** and **22**. The edges of the body portion **14**, i.e., the fore and aft edges as viewed in FIGURE 1 are hereinafter referred to as fore and aft edges **17** and **17'**, respectively. The aft ends of the end walls **21**, also the aft end of the dividing wall **22**, have a flush relation with the aft edges **17'** of the side plates **18** and **19**, their forward ends terminating approximately halfway between the fore and aft edges of the side walls **18** and **19**. Thus it will be seen that the portion **14** defines two passageways **20**, the overall size of the portion **14**, also the spacing between the side walls **18** and **19** and the spacing between end walls **21** with respect to the dividing wall **22**, will be governed by the width and thickness of the base portions **23** of the lamps **12**.

The contact elements **16** are of identical construction, they are fabricated of suitable lengths of band or ribbon-like material having good electrical conducting qualities, for example—a copper, copper alloy or the like. The contact elements are of a predetermined length and are folded on themselves thereby providing a composite element having a pair of spaced leg portions as best seen in FIGURES 5 and 6. The leg portions of the contact elements **16** are spaced allowing them, in their assembled positions in the body portion **14**, to span the end and dividing walls **21** and **22**. Their plain or terminal ends extend beyond the aft edges of the side walls **18** and **19**, their forward or curved ends, hereinafter referred to as the bite portion of the elements **16**, have a flush relation with respect to the forward edges of the side walls **18** and **19**. The contact elements **16** are secured in their assembled relation in the body portion **14** by means of rivets **27**. The rivets pass through aligned apertures **24** provided in the leg portions of the contact elements and corresponding apertures provided in the end walls **21**. The terminal ends of each element **16** carries an eyelet **28** as best seen in FIGURE 2, the eyelets providing means for securing electrical leads (not shown) to the elements **16**. In this respect it will be seen by referring to FIGURE 2 that the center element **16**, i.e., the one spanning the dividing wall **22**, is maintained in position by the eyelet **28** only.

The construction of the elements **16** are completed by a pair of aligned apertures **31** of rectangular configuration provided in the leg portions thereof. One of the apertures—just referred to—merely constitutes an opening punched in one of the leg portions, material punched from the other leg portion remains attached thereto at the aft end of the aperture **31**, therefore, the punched out portion **32** remains integral with the elements **16**. After the apertures **31** etc. are punched and the elements **16** shaped substantially as shown in FIGURES 5 and 6, the contact elements are tempered thereby imparting a degree of resilience thereto. The punched portions **32**, prior to the above mentioned tempering operation, are contoured in a manner enabling them to snugly embrace the forward ends of the walls **21** and **22** when assembled in the portion **14** and therefore aids in maintaining the elements **16** in their assembled relation in the body portion.

Referring again to FIGURE 1, it will be seen that the base portion **23** of the lamps **12** include U-shaped elements **33** and **34** imparting a rectangular configuration to the base portions and also providing electrical contact with the filaments of the lamps **12**. Each side elements **33** and **34** has a projection **36** formed therein; in forming the projections **36** the side portions thereof are slit (cut) and the end portions remain attached to and integral with the elements **33** or **34**. Thus formed the projections **36** are adapted to be received in the apertures **31** and provide means retaining the lamps **12** in their proper position in the body portion **14**. Also it will be seen that the lamps **12** are inserted in and removed from the socket **11** via the forward end of the portion **14**.

The aperture **37** and indents **38** (FIGURES 1, 2 and

3) constitute rotating and indexing means; in other words they provide means for rotating the portion **14** whereby either of the lamps **12** may be selectively positioned and maintained in a desired position.

It will now be seen that the lamps **12** may be easily inserted, removed and firmly retained in position in the body portion **14**. Inserting the lamps **12** and removing them from the portion **14** is enhanced by the resilient nature of the elements **16**, also because of the fact that the forward ends of the elements **16** are of double and rounded construction. This double type of construction inherently imparts maximum resiliency to the elements **16** allowing the lamps **12** to be easily inserted and removed from the socket **11** and at the same time functions to retain the lamps in a firm and good electrical conducting relation in the socket **11**.

While in order to comply with the statute, the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise a preferred form of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

I claim:

1. An electrical socket adapted to have at least one incandescent lamp having a rectangular mounting portion mounted therein, comprising: a body portion fabricated of a good electrical insulating material; said body portion including side walls having first and second opposed edges and end walls defining a rectangular passageway therein; said side and end walls having a flush relation adjacent said first edges and terminating substantially midway between said first and second edges; electrical contact means fabricated of lengths of band-like material constructed of a good electrical conducting material; said contact means being folded on themselves at approximately their mid-point to provide a pair of substantially U-shaped members having leg and bite portions; aligned apertures provided in said leg portions; the material removed from one of said leg portions to provide the aperture therein remains partially attached to the leg portion from which it is removed; in the assembled relation of said contact means in said body portion said leg portions having a snug relation with respect to said end walls with the material removed from said one leg being snugly contoured to the ends of said end walls terminating midway between said first and second edges and said bite portions being substantially flush with said second edges thereby providing resilient and positive means for securing the lamp in said socket and a good path for electrical current flowing to the lamps.

2. An electrical socket adapted to have at least one incandescent lamp mounted therein having a rectangular mounting portion the edges of which have a pair of resilient projections formed thereon, comprising: a body portion fabricated of a good electrical insulating material; said body portion including side walls having first and second opposed edges and end walls defining a rectangular passageway therein; said side and end walls having a flush relation adjacent said first edges and terminating substantially midway between said first and second edges; electrical contact means fabricated of lengths of band-like material constructed of a good electrical conducting material; said contact means being folded on themselves at approximately their mid-point to provide a pair of substantially U-shaped members having leg and bite portions; aligned apertures provided in said leg portions; and in the assembled relation of said contact means in said body portion said leg portions having a snug relation with respect to said end walls with said aligned apertures positioned on each side of said passageway whereby the projections on the lamp are received in said apertures at such times as the lamp is mounted in said socket.

3. An electrical socket as set forth in claim **2**: in which the material removed from one of said leg portions to provide the aperture therein remains partially attached to the leg portion from which it is removed; and in the assembled relation of said contact means in said body portion said material remaining attached to said one leg portion being snugly contoured to the forward ends of said end walls terminating midway between said first and second edges thereby providing firm locating means for said contact means.

References Cited by the Examiner

UNITED STATES PATENTS

2,014,843	9/1935	Hirmann	339—144 X
2,206,217	7/1940	Barry et al.	339—176
2,634,345	4/1953	Knight	339—164 X
2,922,978	1/1960	Engel	339—128 X
2,984,810	5/1961	Kawate	339—33

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