

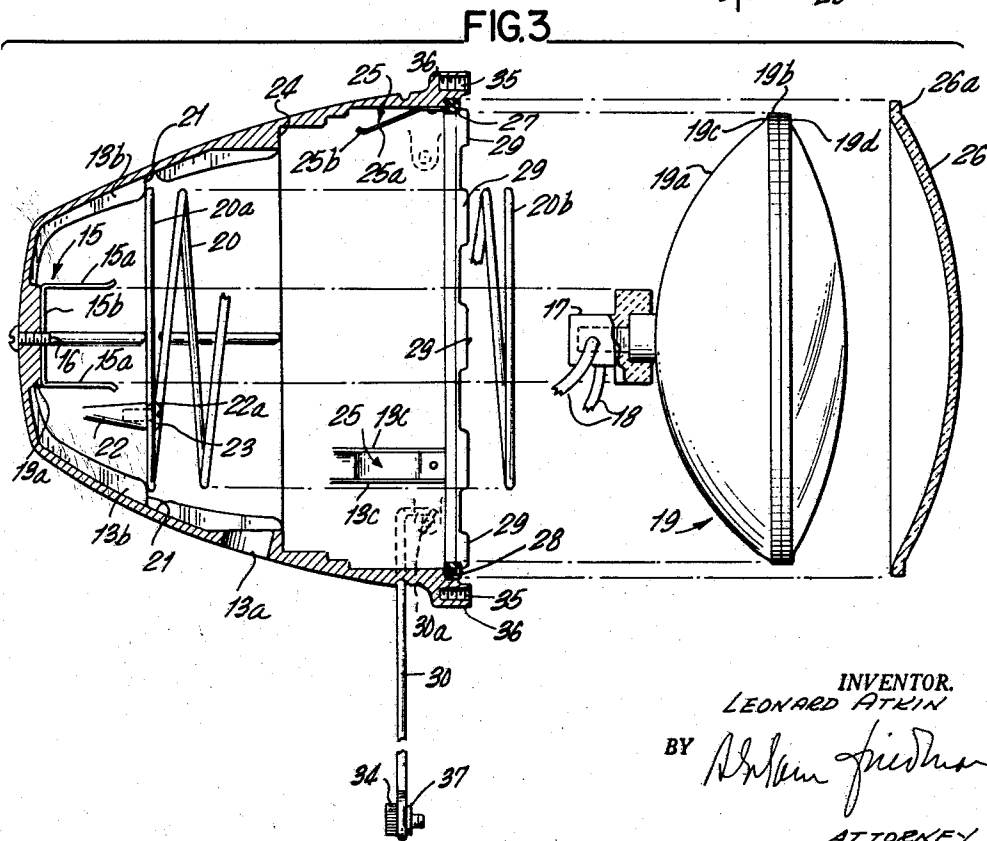
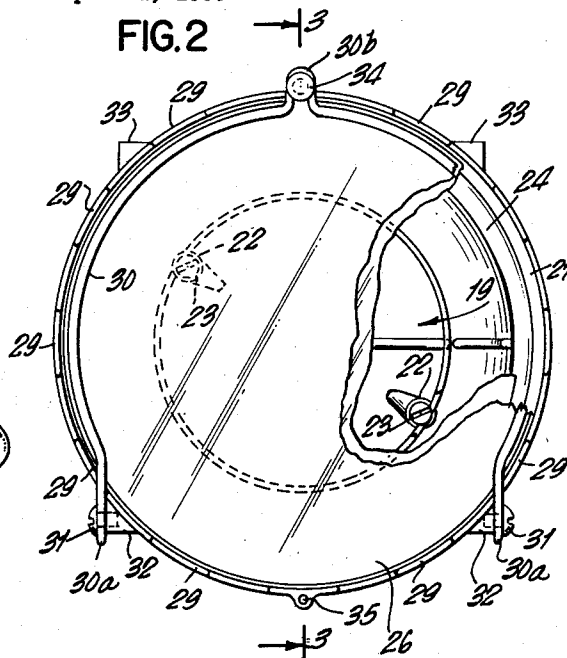
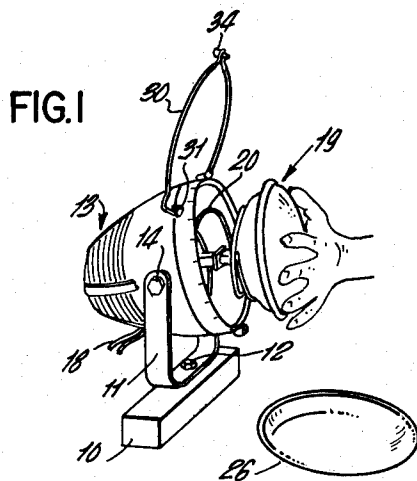
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LAMP RECEPTACLE

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LAMP RECEPTACLE

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This invention relates generally to electric lamp receptacles or holders and particularly to receptacles or holders for electric lamps commonly known as reflector flood or spot lamps.

The invention is devoted primarily to the solution of a number of problems which are often encountered in the employment of such lamps in receptacles or holders of conventional design. Thus, since conventional receptacles or holders of the character indicated are often not easily assemblable and disassemblable with the lamps intended for employment therewith, considerable time may be required for such purposes. Moreover, since the lamps are frequently disposed in relatively inaccessible areas of such receptacles or holders, the manipulation of said lamps in said areas presents no little degree of difficulty, may require special lamp handling tools and complex lamp sockets. Moreover, such inaccessibility also makes difficult the alignment of the lamp in proper position within the receptacle or holder.

The present invention overcomes these shortcomings. Thus, it is an object of the invention to provide a receptacle of the character indicated having improved means for the assembly and disassembly therewith of the lamp intended for use with such receptacle.

A further object of the invention is to provide a receptacle of the character indicated wherein the means for seating and aligning the lamp intended for employment therewith aids in the quick and efficient removal of said lamp from said receptacle.

A further object of the invention is to provide a receptacle of the character indicated which has improved means for securing the lens thereof in operative position, which means also permits rapid and efficient disassembly of the said lens.

A further object of the invention is to provide a receptacle of the character indicated which provides for disposition of the lamp intended for use therein in an easily accessible area.

A further object of the invention is to provide a receptacle of the character indicated which requires no special tools or equipment for the assembly therewith of the lamp used therein or for removal of said lamp.

A still further object of the invention is to provide a receptacle of the character indicated which does not require a socket of complex design to accomplish seating and alignment of the lamp employed therewith in operative position.

A still further object of the invention is to provide a receptacle of the character indicated which utilizes a small number of parts and is of simple and economical design.

Other and further objects of the present invention will become apparent from the following description as read in connection with the accompanying drawing.

In the drawing:

FIGURE 1 is a perspective view of one embodiment of the invention depicted in partially assembled condition.

FIGURE 2 is a front view of said embodiment of the invention; and

FIGURE 3 is an exploded cross-sectional view taken about the line 3—3 of FIGURE 2 and looking in the direction of the arrows disposed in the vicinity of the ends of said line 3—3.

As shown in FIGURE 1 of the accompanying drawing,

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the embodiment of the invention there depicted may be advantageously mounted, as upon a block 10, by means of a U-shaped bracket 11, which is pivoted horizontally about a fastening means, such as a bolt 12, which is secured to said block 10 and which also permits vertical pivotable motion of a housing 13 with respect to the bracket 11, said housing being pivotably mounted therein, as by a suitable screw 14 disposed in each arm of said bracket. Thus, the housing may be pivoted in any desired direction.

As appears in greater detail in FIGURES 2 and 3, the housing 13 has a generally bell-shaped conformation and is provided with a boss 13a which seats a resilient bracket 15 of generally U-shaped form and having a pair of substantially parallel arms 15a and an intermediate web 15b connecting said arms. The bracket 15 is secured to said boss by a suitable fastening means such as a screw 16 extending through said boss and threadedly engaged with the web of said bracket.

A socket 17 of conventional design is removably embraceable by said arms 15a and is provided with suitable electric conductors 18 leading from the socket in the usual manner disposable through an aperture 13a formed in the housing. The socket 17 also removably receives the electrical prongs of a sealed beam lamp 19 of conventional design.

An important feature of the invention resides in the means for seating said lamps within the housing in operative position and for removal thereof when relamping is desired. To accomplish such means, a resilient member such as a coil spring 20 is received within the housing. A plurality of ribs 13b are formed upon the internal periphery of the housing and are interrupted to provide a series of shoulders 21, the said coil spring being seated upon said shoulders in the manner hereinafter described. Thus, for this purpose a pair of diametrically oppositely disposed bosses 22 are formed upon the internal periphery of the housing, each of said bosses 22 being provided with a bore threadedly engaged with a fastening element such as a screw 23. The head of each such screw 23 is proud of the face 22a of the boss in which it is disposed and extends laterally to engage an end coil 20a of the coil spring 20, thereby maintaining said end coil in contact with the shoulders 21 and with the face 22a of each said boss.

The lamp 19 is provided with an arcuate periphery 19a which is receivable in yieldably supporting contact with the other end coil 20b of the coil spring 20, said lamp being depressible upon the coil spring 20 so as to dispose the socket 17 within the embrace of the bracket arms 15a. In this position of the lamp, one side of its rim 19b facing towards the inward portion of the housing, hereinafter referred to for convenience as the inwardly facing marginal perimeter 19c of the rim, is seatable against an annular shoulder 24 provided upon the internal periphery of the housing, the lamp thereby being aligned in operative direction.

Maintenance of contact between said side of its rim 19b and the annular shoulder 24 is assured by virtue of a plurality of annularly spaced leaf springs 25 which are affixed upon the internal marginal perimeter of the mouth of the housing within grooves defined by walls 13c formed integrally with the housing. The leaf springs have yieldable portions 25a which are in inclined position and contactable with said inwardly facing marginal perimeter 19c of the rim 19b during insertion of the lamp within the housing, said yieldable portions 25a being resiliently bendable by said lamp in a direction substantially parallel to the axis of the housing to permit disposition of said marginal perimeter 19c of the rim 19b against the annular shoulder 24 as aforesaid. When this last-mentioned

position has been attained, the yieldably resilient portions 25a of the leaf springs 25 will spring back to their inclined position. Each of said yieldable portions 25a is provided with a curved end face 25b which will be disposed in contact with that portion of the rim 19b which faces toward the mouth of the housing when said rim is disposed upon the annular shoulder 24, as aforesaid, said portion of the rim facing toward the mouth of the housing being hereinafter referred to as the outwardly facing marginal perimeter 19d of the rim 19b.

Thus, when the lamp is disposed in contact with the annular shoulder 24, the end faces 25b of the leaf springs 25 will yieldably lock said lamp within the housing.

If removal of the lamp be desired, it can be accomplished quickly and efficiently by manual depression of the yieldable portions 25a of the leaf springs 25 in a direction radially outward of the axis of the housing, thereby withdrawing the end faces 25b of the leaf springs 25 from contact with the outwardly facing marginal perimeter 19d of the rim 19b and permitting the coil spring 20 to force the lamp out of the mouth of the housing.

When the lamp is seated upon the annular shoulder 24 of the housing, as for operative purposes, it is protected from external injury by the housing and by a lens 26 which is seated upon an annular gasket 27 composed of rubber or other similar elastomeric material and seated upon annular shoulder 28 formed upon the marginal perimeter of the mouth of the housing. Said lens is secured against accidental radial displacement with respect to said housing by a plurality of positioning or locating fingers 29 formed integrally with the housing.

The lens is also secured against axial withdrawal from the gasket 27 by a retaining ring or clamp 30 which is pivotably securable, as by arcuate ends 30a engaged with a pair of screws 31, threadably engageable with either of two pairs of bosses 32, 33 formed upon the external periphery of the housing. Said clamp 30 is contactable with a flange 26a provided at the marginal perimeter of the lens and is provided with a loop 30b engaged with a knurled thumbscrew 34 removably engageable with either of a pair of oppositely disposed threaded bores 35 provided in axially parallel bosses 36 formed integrally with the housing. The engagement of the thumbscrew 34 with the loop 30b may be maintained by a washer 37 threadably engaged with said thumbscrew and contactable with said loops 30b.

When removal of the lens is desired as, for example, during relamping, the thumbscrew may be unscrewed from its engagement with the aperture of one of the bores 36 and pivoted with the retaining ring or clamp, as to the position depicted in FIGURE 3, thereby permitting the lens to be lifted out of the mouth of the lamp.

It will also be observed that when the lens is disposed in operative position, as upon the aforesaid annular gasket in the housing, the position of the lens is substantially forward of the lamp, thereby forming an airspace between said lamp and lens and reducing the heat radiated to said lens by the lamp.

It will be seen from the foregoing that withdrawal of the retaining ring or the clamp from its secured contact with the lens, followed by removal thereof from the housing and radial depression of the leaf springs, permits the coil spring to push the lamp out of the housing where it can be removed from its socket and replaced by another lamp, as desired. When thus replaced, the new lamp may be assembled in operative position within the housing and

the lens resecured thereto by reversal of the steps set forth above.

The foregoing embodiment of the invention illustrated and described hereinabove have been selected for the purpose of clearly setting forth the principles involved. It will be apparent, however, that the present invention is susceptible to being modified in respect to details of construction, combination and arrangement of parts which may be resorted to without departure from the spirit and scope of the invention as claimed.

I claim:

1. A lamp assembly comprising a housing closed at one end thereof and open at the opposing end, socket mounting means provided at said closed end, a coil compression spring disposed centrally within said housing, means provided on the inner housing surface to define a seat for one end of said spring, said socket mounting means being disposed adjacent said seat and axially of said spring, annular means provided on the inner surface of said housing between said spring seat and the open end of said housing to define a lamp seat, lamp retaining spring means provided on the inner housing surface between the open end thereof and said lamp seat and extending toward the latter, a lens closing the open end of said housing, and lens retainer means pivotally mounted on said housing, the other end of said spring being free to move axially of said spring and being disposed substantially adjacent to said lens in the relaxed condition of said spring for engagement by a lamp.

2. A lamp assembly as in claim 1, and a lamp and socket assembly provided within said housing; said socket extending through said coil spring and being seated in said socket mounting means; said lamp having one surface facing the closed end of said housing and a second surface facing the open end of said housing; said one lamp surface engaging said socket, said lamp seat and said other end of said spring to compress said spring; and said lamp retaining means releasably resiliently engaging said second lamp surface to retain the lamp within said housing against the bias of said coil spring.

3. A lamp assembly as in claim 1, said housing being of bell-shaped conformation, said spring seat being defined by ribs provided on the internal periphery of said housing and said lamp seat being defined by an annular shoulder provided on the internal periphery of said housing.

4. A lamp assembly as in claim 3, means defining grooves at the internal periphery of said housing, said grooves being disposed between said annular shoulder and the open end of said housing, said lamp retaining spring means being leaf springs each having one end secured in a groove and projecting therefrom toward said annular shoulder.

5. A lamp assembly as in claim 3, and means to secure the inner end of said coil spring in abutment with said ribs.

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