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LAMP HOLDER ASSEMBLY FOR LUMINAIRES

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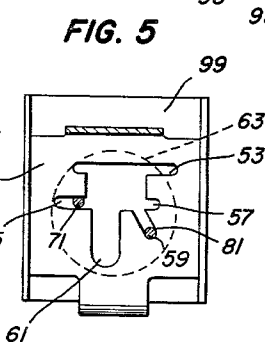
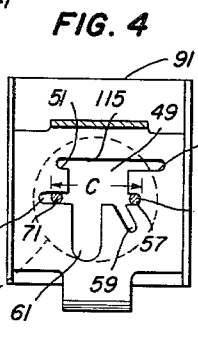
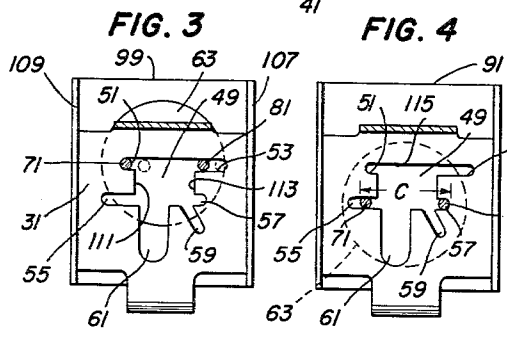
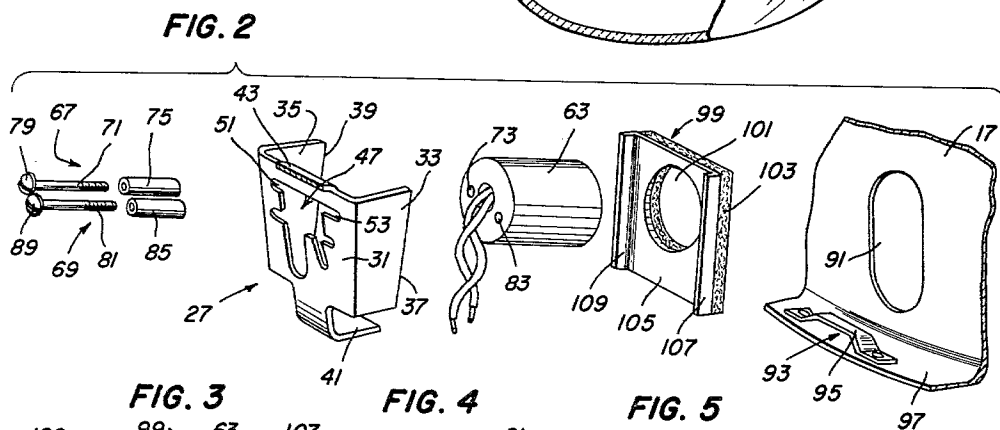
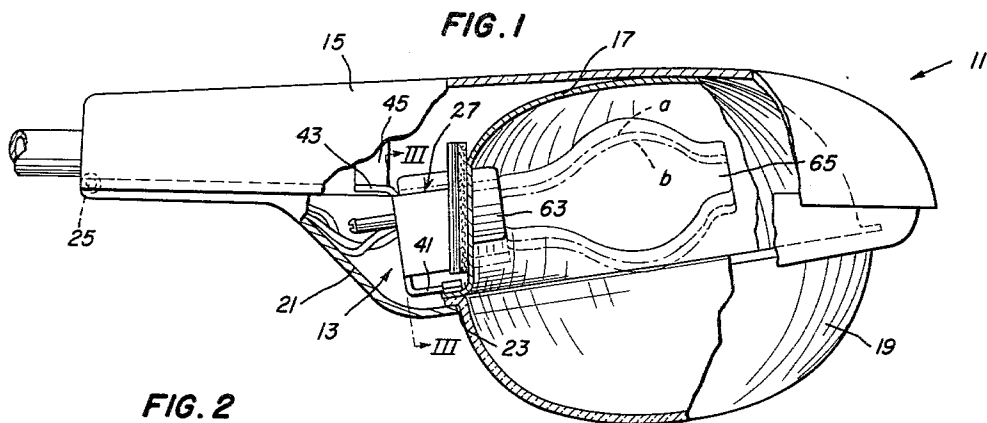


FIG. 6

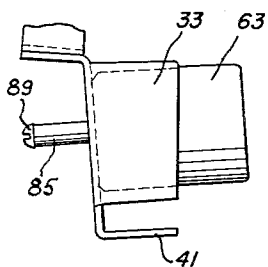
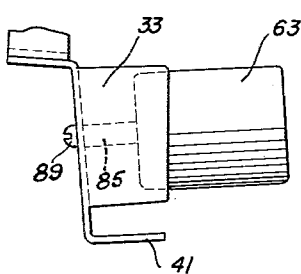


FIG. 7



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LAMP HOLDER ASSEMBLY FOR LUMINAIRES
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The present invention relates to luminaires and, more particularly, relates to a lamp holder assembly for luminaires, such as those of the type used for street lighting purposes.

One of the objects of the present invention is to provide, in a luminaire, a unique and improved holder for the lamp socket.

A further object is to provide such a holder that includes means for quickly and easily changing the position of the lamp socket and, therefore, the lamp.

A further object is to provide such a holder in which the changes in the lamp socket position can be accomplished without disconnecting the parts.

A further object is to provide such a holder that permits three vertical positions of the lamp socket and two fore and aft positions.

A further object is to provide such a holder that insures accurate positioning of the lamp socket.

A further object is to provide means for changing the vertical position of the lamp holder assembly gasket.

A further object is generally to improve the design and construction of lamp holders for luminaires.

The means by which the foregoing and other objects of the present invention are accomplished and the manner of their accomplishment will be readily understood from the following specification upon reference to the accompanying drawings, in which:

FIG. 1 is a side elevational view showing the lamp holder of the present invention in combination with a luminaire and with portions of the luminaire being broken away for purposes of illustration and showing in broken lines two other positions of the lamp and lamp socket.

FIG. 2 is an exploded view of the lamp holder of the present invention shown with a fragmentary portion of the luminaire reflector.

FIG. 3 is an enlarged sectional view of the lamp holder of the present invention taken as on the line III—III of FIG. 1 and with parts removed for purposes of clarity.

FIG. 4 is a view similar to FIG. 3 but showing the lamp socket adjusted to another position.

FIG. 5 is a view similar to FIGS. 3 and 4 but showing the lamp socket adjusted to still another position.

FIG. 6 is a fragmentary side elevational view of a portion of the lamp holder shown in FIG. 1.

FIG. 7 is a view similar to FIG. 6 but showing the lamp socket adjusted to a different longitudinal position.

Referring now to the drawings in which the various parts are indicated by numerals, a typical luminaire 11, with which the lamp holder 13 of the present invention is adapted to be used, is shown in FIG. 1 wherein it will be seen luminaire 11 includes the usual upper housing 15 that is provided with a reflector 17 in the interior thereof. In addition, luminaire 11 includes the usual refractor 19 which is held in place against reflector 17 by a lower housing 21 that is provided with an opening 23 through which the refractor depends. Housing 21 is preferably pivotally mounted as at pivot axis 25 from housing 15 in the usual manner.

With the above-described environment in mind, the following description of the parts of lamp holder 13 in combination therewith will be readily understood:

Lamp holder 13 includes a bracket 27 which is preferably formed from a single piece of metal that is bent into the shape best seen in FIGS. 1 and 2. Thus bracket

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27 includes a web 31 and a pair of spaced flanges 33, 35 integrally attached adjacent the side edges of the web and extending forwardly therefrom in substantially parallel relationship. Flanges 33, 35 terminate respectively along forward distal edges 37, 39 that are angled somewhat relative to web 31. A tongue 41 is integrally attached adjacent the lower edge of web 31, which tongue extends downwardly and then forwardly relative to the web. Suitable supporting means for supporting bracket 27 in housing 15 is provided and preferably includes a tab 43 integrally attached adjacent the upper edge of web 31 and extending rearwardly therefrom. Tab 43 is attached by suitable means to a strap 45 which, in turn, is attached to housing 15 by suitable means, not shown.

An open cut-out or path 47 is provided through web 31 and includes a central portion 49 and a plurality of pairs of recesses extending from the central portion. Thus, an upper pair of recesses 51, 53 are provided adjacent the upper part of central portion 49. The recesses 51, 53 are in opposing relationship and lead outwardly in opposite directions from central portion 49. Recess 53 is somewhat longer than recess 51. Another and lower pair of recesses 55, 57 are provided adjacent the lower part of central portion 49. Recesses 55, 57 lead outwardly in opposite directions from central portion 49 and extend substantially parallel to recesses 51, 53. The length of the recesses 55, 57 is just opposite from that of recesses 51, 53, that is, recess 55 is the longer of the two recesses 55, 57 and is disposed below recess 51 and diagonally from recess 53. By the same token, recess 57, which is the shorter of the two recesses 55, 57, is disposed below recess 53 and diagonally from recess 51. Another recess 59 leads from central portion 49 adjacent the lower part thereof and outwardly and downwardly below recess 57 at an angle relative to the other recesses. The angled recess 59 is paired with recess 55, as will be better understood in the description to follow. In other words, the recess 55 is common to the two pairs of recesses 55, 57 and 55, 59. Still another recess 61, which is enlarged relative to the other recesses heretofore mentioned, is provided adjacent the lower part of central portion 49. Enlarged recess 61 leads downwardly from the central portion 49 at substantially a right angle relative to recesses 51, 53 and 55, 57.

The lamp socket 63, which holds a lamp 65, is supported from bracket 27 preferably in the following manner: A pair of spaced anchoring devices 67, 69 are attached to lamp socket 63 at the rearward end thereof and extend through path 47. Anchoring device 67 includes an elongated screw 71 that is removably threadably engaged in a threaded socket 73 in the rearward end of lamp socket 63 opposite from lamp 65. Screw 71 is the actual portion of the anchoring device 67 that extends through path 47 and is a reduced portion as compared with the other parts of the anchoring device. Suitable enlarged parts of the anchoring device 67 are included to clamp the anchoring device to web 31 and preferably include an elongated sleeve-like spacer 75 provided on screw 71 and the head 79 of the screw. These above-mentioned enlarged parts, namely, spacer 75 and head 79, are larger than recesses 51, 53, 55 and 57, and will not pass therethrough. Anchoring device 69 is similar in structure and function to anchoring device 67 and includes screw 81 fitting into threaded socket 83, spacer 85, and head 89 that respectively correspond to screw 71, socket 73, spacer 75, and head 79.

In the assembled relationship of lamp holder 13 with luminaire 11, the lamp socket 63 is anchored to bracket 27 by the anchoring devices 67, 69 in one of the selected positions, which will be better understood in the operation of the device to follow later in the specification, and

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the lamp socket 63 extends through a vertically elongated opening 91 in reflector 17 with the lamp 65 being disposed in the interior of the reflector. The end of reflector 17 adjacent lamp socket 63 is supported by tongue 41 which extends into a slot 93 that is formed by an inverted substantially U-shaped member 95 attached to a flange 97 extending around the bottom edge of reflector 17.

A substantially rectangular gasket 99, to keep out dust and the like, is provided between the outside of reflector 17 and bracket 27 to cover the space between lamp socket 63 and the portions of reflector 17 that define opening 91. Gasket 99 is provided with a circular opening 101 through which lamp socket 63 closely extends. Gasket 99 preferably includes a pad 103 preferably formed of silicone fibers or the like which contacts the outside of the reflector 17. Additionally, gasket 99 includes a rigid backing plate 105 having flanges 107, 109 integrally attached to the backing plate on the opposite side edges thereof and extending rearwardly therefrom. Reflector 17 is pressed against gasket 99 by suitable means, not shown, adjacent the forward part of reflector 17, which keeps the gasket in contact with the reflector and the bracket 27. In assembled relationship, the backing plate 105 contacts edges 37, 39 with flanges 107, 109 overlapping and closely fitting on the outside of flanges 33, 35 to prevent the gasket 99 from rotating. Opening 101 is offset from the center of gasket 99 in a vertical direction so that the gasket is selectively positionable in two different positions 180 degrees from each other. One of these positions is shown in FIGS. 3 and 4, and the other position is shown in FIG. 5. The purpose of this is to allow the lamp socket 63 to be positioned vertically in opening 91 and, at the same time, keep the opening covered by the gasket 99 regardless of whether the lamp socket is positioned in the lower part of the opening or in the upper part thereof. In other words, when the lamp socket 63 is adjacent the upper part of opening 91, the gasket 99 should be in the position shown in FIG. 2, that is, with the opening adjacent the upper part of the gasket; and when the lamp socket is adjusted to a position adjacent the lower part of opening 91, the gasket should be rotated 180 degrees from that shown in FIG. 2. It will be understood that in order to rotate gasket 99, as above described, the gasket must be moved outwardly away from the flanges 33, 35.

For the purposes of describing the operation of the lamp holder 13, it will be assumed first that the lamp socket 63 is positioned vertically in the position shown in FIG. 3 and in the longitudinal position shown in FIG. 6. When in this position, it will be understood that the portions of web 31 adjacent recesses 51, 53 are clamped between the rearward portion of the lamp socket 63 and spacers 75, 85 to hold the lamp socket securely in place. Also, the screws 71, 81 respectively extend through recesses 51, 53, and screw 71 is at the end of the recess 51. In other words, the lamp socket 63 is as far to the left, as viewed in FIG. 3, as is possible for it to be moved relative to the web 31. In this position, the lamp socket 63 and lamp 65 are held in a given position relative to reflector 17 and refractor 19 so that a particular light distribution is provided, for example a 65 degree main beam from the refractor. This particular position of lamp 65 is shown in solid lines in FIG. 1. To move the lamp socket 63 and thereby the lamp 65 downwardly and to another position, for example, that shown in broken lines as at *a* in FIG. 1, which, for example, gives a 70 degree main beam from the refractor 19, the screws 71, 81 are loosened but not removed from the respective sockets 73, 83. Then, the lamp socket 63 is shifted to the right, as viewed in FIG. 3, to carry the screws 71, 81 lengthwise of the recesses 51, 53 and to the position shown in broken lines in this figure, which will be denoted a pivotable position since screw 71 is out of the recess 51 and has been moved into the central portion 49. Also, it will be noted that the lamp socket can be pivoted about screw 81 counterclockwise, as viewed in FIG. 3, until the screw 71 is

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adjacent recess 55, whereupon the lamp socket 63 can then be moved to the left, as viewed in FIG. 3, to carry the screw 71 into the recess 55 and move screw 81 out of recess 53 into the central portion 49, whereupon the lamp socket can then be pivoted clockwise, as viewed in FIG. 3, until screw 81 is adjacent recess 57, whereupon the lamp socket can be moved to the right and into the position shown in FIG. 4 to hold the lamp in the selected position shown as at *a* in FIG. 1. Then, the anchoring devices 67, 69 can be tightened to secure the lamp socket 63 in place. When it is desired to move the lamp 65 to still another position, such as that shown as at *b* in FIG. 1, the anchoring devices 67, 69 can be loosened and the lamp socket 63 moved to the left, as viewed in FIG. 4, until the screw 81 is moved out of recess 57 and adjacent recess 59, whereupon the lamp socket 63 may be moved to carry the screw 81 down into recess 59, as shown in FIG. 5.

It will be noted from the foregoing description that the lamp is accurately positioned in the proper positions when one of the screws 71, 81 is housed against the end of the recess; for example, in the first mentioned position, screw 71 is housed against the end of recess 51; in the position *a*, screw 81 is housed against the end of recess 57; and in the position *b*, screw 81 is housed against the end of recess 59. Also, it should be noted that, in moving from any of the above positions to the others, the parts are not disconnected but remain in cooperating relationship throughout the movement, which greatly aids the worker in changing from one position to another. Also, it will be apparent from the foregoing description that the following relative distances or dimensions are important: (1) The overall width of the spaced screws 71, 81, that is, the distance from the remote side of one of the screws to the remote side of the other screw, which is the dimension *c* shown in FIG. 4; (2) the distance from the end of recess 53 to the edge 111 of web 31 that defines one side of central portion 49; (3) the distance from the end of recess 55 to the edge 113 of web 31 that defines the opposite side of central portion 49 from edge 111; (4) the distance from the end of recess 51 to the edge 113; (5) the distance from the end of recess 57 to the edge 111; (6) the distance from the end of recess 59 to the edge 111; (7) the distance from the end of recess 61 to the edge 115 of web 31 that defines the upper edge of central portion 49; and (8) the distance between edges 111 and 113. Thus, it will be noted that the width under item (1) above is greater than items (4), (5), (6) and (8), but less than items (2), (3), and (7).

In moving from the rearward position of the lamp socket 63, shown in FIG. 6, to the forward position, shown in FIG. 7, it will be understood that the anchoring devices 67, 69 are loosened and the socket 63 turned 90 degrees so that one of the anchoring devices is in the central portion 49 and the other is in the enlarged recess 61. Since the enlarged recess 61 and the central portion 49 are larger than the anchoring devices, the lamp socket 63 can be moved longitudinally until the heads 79, 89 are to the rearward side of web 31 and the rearward ends of the spacers 75, 85 are adjacent the forward side of the web, whereupon the lamp socket 63 may be turned back 90 degrees and manipulated until the screws 71, 81 are in one of the positions shown in FIGS. 3, 4 or 5. Then, the anchoring devices 67, 69 are tightened to clamp web 31 between head 79 and spacer 75, and between head 89 and spacer 85, to hold the lamp socket in place. It will be understood that by moving the lamp socket 63 forwardly, the light pattern will be changed.

From the foregoing description it can be seen that the lamp holder 13 of the present invention provides a very efficient means for quickly and easily changing the position of the lamp socket and therefore the lamp in a luminaire. Also, the present invention provides three vertical positions of the lamp and socket and two fore and aft positions, as opposed to prior devices which only offered two vertical positions.

Although the invention has been described and illustrated with respect to a preferred embodiment thereof, it is to be understood that it is not to be so limited since changes and modifications may be made therein which are within the full intended scope of this invention as hereinafter claimed.

I claim:

1. In a luminaire, including a housing, a reflector therein, and a lamp socket; means for holding said lamp socket in a selected position relative to said reflector, said holding means comprising a bracket supported in said housing, said bracket including a web and a pair of spaced flanges forwardly extending from said web, said web being provided with an open path therethrough including a central portion and a plurality of vertically spaced pairs of recesses leading from said central portion and each of said recesses terminating in an end remote from said central portion, a pair of spaced anchoring means attached to said lamp socket and removably engaging said web for supporting said lamp socket from said bracket, said anchoring means being operable between a holding condition in which said lamp socket and said anchoring means is held in a fixed position relative to said web and a loosened condition in which said lamp socket and said anchoring means are permitted restricted movement, said anchoring means respectively including a first reduced portion and a second reduced portion extending through said open path, the distance in each of said pairs of recesses between the end of one of said recesses to the other of said recesses in said pair being greater than the overall width of said anchoring means as measured from the remote side of said first reduced portion to the remote side of said second reduced portion, said lamp socket being normally held in a first position by said anchoring means with said first and second reduced portions respectively extending through said recesses of a first one of said pair of recesses, with said anchoring means in said loosened condition said lamp socket being movable from said first position to carry said reduced portions lengthwise of said first one of said pair of recesses until said lamp socket is in a pivotable position in which said first reduced portion is moved out of one of said recesses of said first pair of recesses and into said central portion whereupon said lamp socket is free to pivot about said second reduced portion and is movable to carry said first reduced portion into one of said recesses of a second pair of said recesses, continued movement of said first reduced portion into said one of said second pair of recesses being effective to withdraw said second reduced portion from the other of said recesses of said first pair of recesses and into said central portion whereupon said lamp socket is free to pivot about said first reduced portion to carry said second reduced portion into position to be moved into the other of said second pair of recesses and into another position at a different height relative to said reflector from said first position.

2. The device of claim 1 in which said open path additionally includes an enlarged opening larger than said anchoring means to permit endwise movement of said anchoring means relative to said web.

3. The device of claim 1 in which said anchoring means

includes means along the length thereof for clamping said web in at least two different positions to selectively position said socket longitudinally of said reflector.

4. The device of claim 1 in which is included a plate and a pad fixedly attached thereto, said plate and said pad being provided with an aperture therethrough offset vertically from the center thereof, said plate and said pad being mounted on said lamp socket with said plate engaging said flanges, said plate and said pad being rotatable 180 degrees about said lamp socket to change the vertical position of said plate and said pad.

5. The device of claim 1 in which is included a gasket provided with an aperture therethrough offset vertically from the center thereof, said gasket being mounted on said lamp socket and in engagement with said flanges, said gasket being rotatable 180 degrees about said lamp socket to change the vertical position of said gasket.

6. In a luminaire including a housing and a reflector for a lamp socket, means for holding said lamp socket in a selected position relative to said reflector, said holding means comprising a bracket supported in said housing, said bracket including a web provided with an open path therethrough including a central portion and a plurality of vertically spaced pairs of recesses leading from said central portion; a pair of spaced anchoring means removably attached to said lamp socket for removably engaging said web to support said lamp socket from said bracket, for movement between a holding condition in which said lamp socket and said anchoring means are held in a fixed position relative to said web and a loosened condition in which said lamp socket and said anchoring means are permitted restricted movement, for normally holding said lamp socket in a first position with said pair of anchoring means respectively extending through a first one of said pairs of recesses, for movement when said anchoring means is in said loosened condition from said first position to carry said anchoring means lengthwise of said first one of said pairs of recesses until said lamp socket is in a pivotable position in which one of said pair of anchoring means is moved out of one of said recesses of said first pair and into said central portion whereupon said lamp socket is free to pivot about the other of said pair of anchoring means and is movable to carry said one of said pair of anchoring means into one of said recesses of a second pair of said recesses, and for continued movement of said one of said pair of anchoring means into said one of said second pair of recesses to withdraw said other of said pair of anchoring means from the other of said recesses of said first pair and into said central portion whereupon said lamp socket is free to pivot about said one of said pair of anchoring means to carry said other of said pair of anchoring means into position to be moved into the other of said second pair of recesses and into another position at a different height relative to said reflector from said first position.

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