June 11, 1968 S. L. BALDWIN 3,387,866

LUMINAIRE

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Fig. 1.

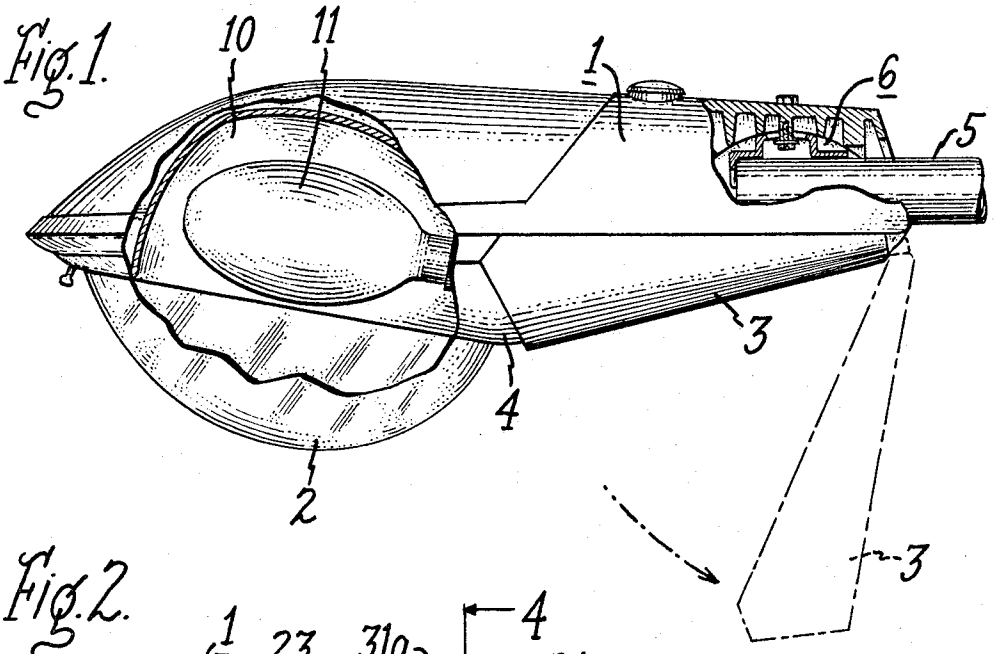
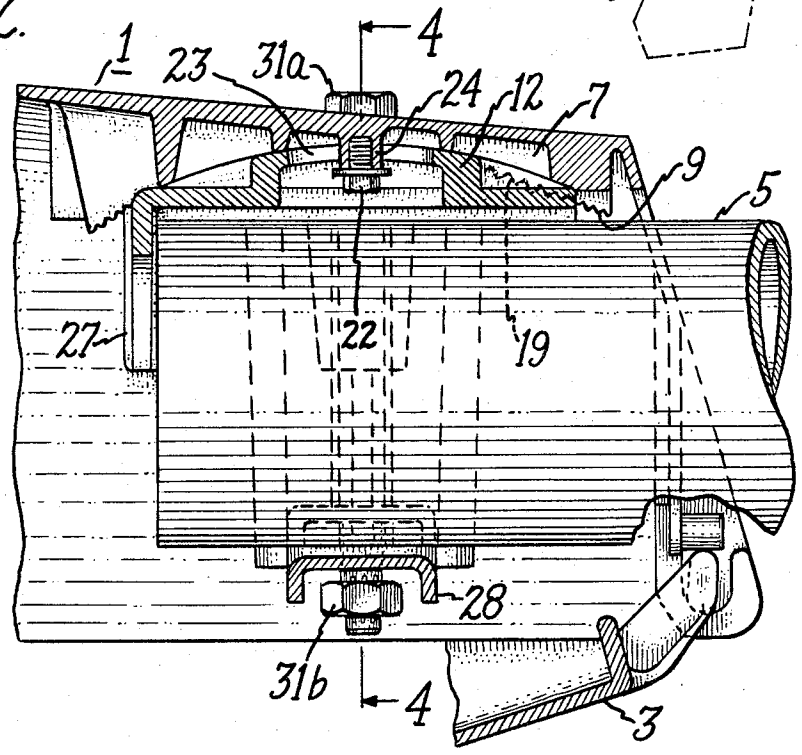


Fig. 2.



Inventor,
Samuel L. Baldwin,
by Sidney Greenberg
His Attorney.

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Fig. 3.

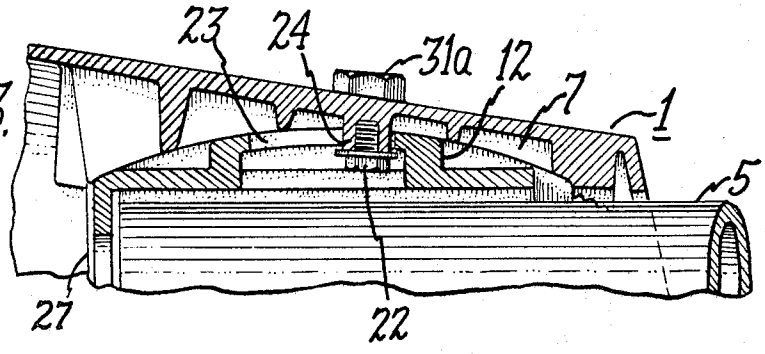


Fig. 4.

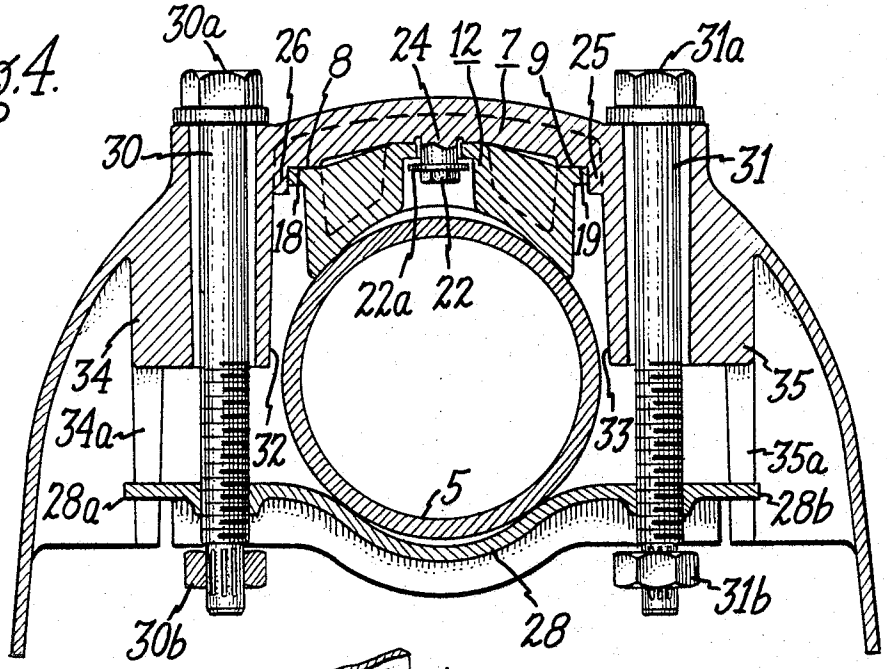
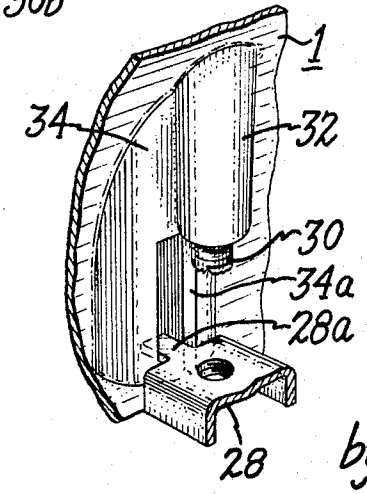


Fig. 5.



Inventor,
Samuel L. Baldwin,
by Sidney Greenberg
His Attorney.

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Fig. 6.

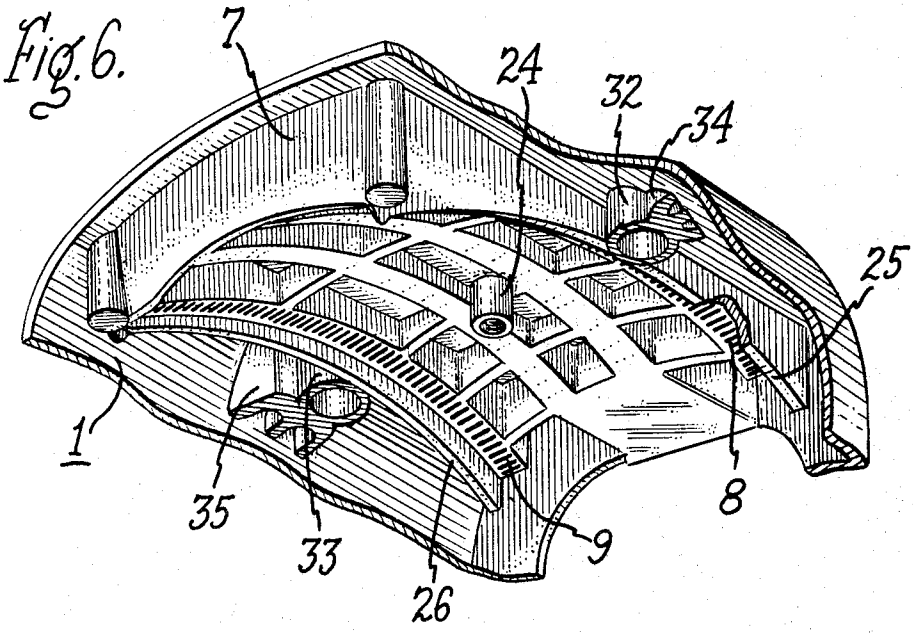
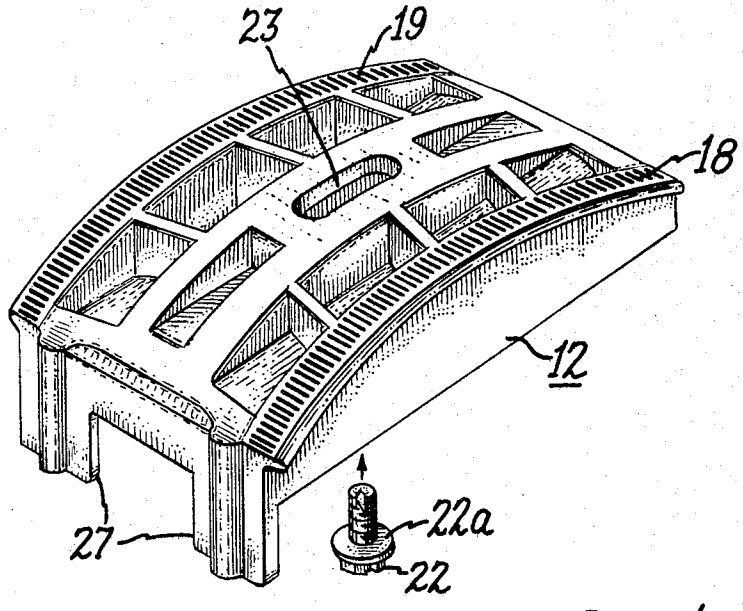


Fig. 7.



Inventor,
Samuel L. Baldwin,
by Sidney Greenberg
His Attorney.

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3,387,866

LUMINAIRE

Samuel L. Baldwin, Flat Rock, N.C., assignor to General Electric Company, a corporation of New York

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10 Claims. (Cl. 285—184)

ABSTRACT OF THE DISCLOSURE

Luminaire with adjustable mounting means for securing the luminaire to a pipe support comprises an elongated luminaire housing and adjustable slipfitter means arranged near the rear end of the housing comprising first arcuate bearing on the housing arranged symmetrical about an axis transverse the longitudinal axis of the housing, a second bearing adjustably secured to the first bearing for movement relative thereto to selected positioned along an arcuate path about the transverse axis, the second bearing having an upper surface portion engaging the first arcuate bearing and lower surface portion engageable with one side of the pipe support, and clamping means adjustably secured to the housing independent of the second bearing and engageable with the opposite side of the pipe support for clamping the housing to the pipe support, the clamping means being operable from either inside or outside the housing.

The present invention relates to luminaires, and more particularly concerns a luminaire with adjustable mounting arrangement.

Street lighting luminaires of well known type comprise an elongated housing in which a lamp, reflector and refractor are assembled at the front end, and a mounting device called a slipfitter is located at the rear end for receiving a generally horizontal pipe support to which the slipfitter is clamped for adjustably mounting the luminaire. The slipfitters of known types of luminaires have had certain disadvantages, such as being relatively cumbersome in construction, having a multiplicity of parts, being difficult to adjust and to readily adapt for mounting on different sizes of pipe supports, and having other drawbacks.

It is an object of the invention to provide an improved luminaire slipfitter which is relatively simple in construction and has relatively few parts, is readily assembled, may accommodate various sizes of pipe supports, and is easily adjustable for arranging the luminaire in desired position on a supporting member such as a pipe or the like.

It is a particular object of the invention to provide a luminaire slipfitter of the above type which enables adjustment of the luminaire about the longitudinal axis of the pipe support and an axis traverse thereto, and which can be adjusted from either outside or inside the luminaire housing, or from above or below the luminaire, while the luminaire is in operating position.

Other objects and advantages will become apparent from the following description and the appended claims.

With the above objects in view, the present invention relates to a luminaire adapted to be mounted on a pipe support or the like, the luminaire comprising a housing having a longitudinal axis and front and rear ends, illuminating means near the front end of the housing, and adjustable slipfitter means arranged near the rear end of the housing comprising a first arcuate bearing means fixed to the housing and symmetrical about an axis transverse the longitudinal axis, a second bearing means adjustably secured to the first bearing means for adjustment relative thereto to selected positions along an arcuate path about the transverse axis, the second bearing means having a

surface portion engaging the first arcuate bearing means and an opposite surface portion engageable with one side of the pipe support, and clamping means adjustably secured to the housing and engageable with the opposite side of the pipe support for clamping the housing to the pipe support.

In a particular aspect of the invention, the clamping means has portions both outside and inside the housing by means of which it may be alternatively operated for adjustably positioning the luminaire housing.

The invention will be better understood from the following description taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a side view in elevation, partly broken away, of a street lighting luminaire in which the slipfitter mounting of the invention may be embodied;

FIGURE 2 is an enlarged detail view, partly in section, of the adjustable slipfitter mounting of the invention;

FIGURE 3 is a view similar to that of FIGURE 2 showing the slipfitter mounting adjusted to a different position;

FIGURE 4 is a cross sectional view of the slipfitter mounting taken along the line 4—4 in FIGURE 2;

FIGURE 5 is a fragmentary view of a portion of the slipfitter clamping means shown in FIGURE 4;

FIGURE 6 is a perspective view of a fixed portion of the slipfitter mounting arrangement; and

FIGURE 7 is a perspective view of the movable bearing means which is adapted to be adjustably secured to the fixed slipfitter bearing portion shown in FIGURE 6.

Referring now to the drawings, and particularly to FIGURE 1, there is shown a street lighting luminaire comprising an upper housing **1** in which is located reflector **10** and lamp **11** and which is closed on its bottom at the front by a refractor **2** and at the rear by door **3**. In the particular form of luminaire illustrated, the refractor **2** is mounted in an annular frame member **4** hingedly connected at its rear portion to housing **1** by means not shown, and rear bottom door **3** is hingedly connected to the rear end of housing **1** (see also FIGURE 2) so as to be swingable downwardly to the position shown in interrupted lines in FIGURE 1. With door **3** in its open position, access is readily had to the rear interior portion of housing **1** and the slipfitter parts therein as shown in FIGURE 2. The front end of door **3** is releasably attachable to housing **1** by suitable means (not shown) to retain the door in closed position. It will be understood that the slipfitter mounting arrangement described hereinafter may be embodied in other types of luminaires or lighting fixtures having constructions different from that shown in FIGURE 1.

Housing **1** of the FIGURE 1 luminaire has an opening at its rear end for receiving an elongated support member **5**, such as a tubular bracket or pipe, which may extend generally horizontally from a pole or other vertical support, and on which the luminaire is mounted by means of the slipfitter mounting **6** of the invention. The latter provides for adjustment of luminaire housing **1** about its longitudinal axis (which extends along the longitudinal axis of pipe support **5**) and about a transverse axis perpendicular to the longitudinal axis, as more fully described below.

As shown in FIGURES 2 and 6, the slipfitter device includes a fixed bearing portion **7** which is integral with or secured to the underside of housing **1** and which is formed along its length with a pair of spaced arcuate concave bearing surfaces **8** and **9** which are formed with teeth or serrations as shown, or other surface friction means. Associated with fixed bearing **7** is a movable bearing member **12** (see FIGURE 7) formed along its length with a pair of spaced arcuate convex bearing sur-

faces 18 and 19 which are complementary to and engageable with surfaces 8 and 9 of fixed bearing 7, surfaces 18 and 19 also being provided with teeth or other friction means. Movable bearing 12 is secured in slidable relation to fixed bearing 7 by means of screw 22 passing through slot 23 in bearing 12 and threadably engaging boss 24 of housing 1. As seen in FIGURE 4, screw 22 has a flange 22*a* which is wider than slot 23 and serves to retain bearing 12 in loose assembly with bearing 7. Boss 24 projects into slot 23 and is of sufficient length that when screw 22 is fully tightened therein with its head engaging the bottom end of boss 24, movable bearing 12 is still only loosely assembled to fixed bearing 7 prior to being clamped to pipe support 5 and may be moved relative thereto along an arcuate path having its center on the aforementioned traverse axis.

Bearing portion 7 is formed with retaining side rails or flanges 25, 26 which extend along its outer margins and between which movable bearing member 12 is retained with its outer edges in slidable engagement with the inner surfaces of rails 25, 26 (see FIGURE 4). Bearing member 12 is further provided with depending stop portions 27 at its front end against which pipe bracket 5 abuts to limit the extent of insertion of the latter into the luminaire housing. The underside of bearing member 12 is curved in the transverse direction as shown in FIGURE 4 to come into contact with a substantial portion of the curved surface of pipe bracket 5.

Yoke member 28 engages pipe bracket 5 at its lower side generally opposite the central portion of movable bearing member 12, and it is adjustably secured to housing 1 by means of a pair of threaded bolts 30, 31 which engage threaded apertures at opposite ends of yoke member 28. The upper portions of bolts 30, 31 pass through elongated channels in bosses 32, 33 of housing 1, the bolts having heads 30*a*, 31*a* engaging the outer edges of bosses 32 and 33, respectively, which open at the top of housing 1. At their bottom ends below yoke member 28, bolts 30, 31 are formed with splined portions on which nuts 30*b*, 31*b* are force-fitted. Yoke member 28 may thus be adjusted toward and away from pipe bracket 5 for clamping or releasing the latter by means either of exterior heads 30*a*, 31*a* or interior nuts 30*b*, 31*b*. Such adjustability of yoke member 28 also permits the accommodation of pipe brackets of various diameters. As seen in FIGURE 2, yoke member 28 has a cross-section of inverted U-shape and is formed with a central concave portion for engaging the underside of pipe bracket 5 (see FIGURE 4). At its opposite ends, yoke member 28 is formed with tabs 28*a*, 28*b* which project into and ride along vertical slots 34*a*, 35*a* respectively in bosses 34, 35 integral with housing 1 (see FIGURE 5), whereby yoke member 28 is guided in vertical movement during its adjustment by bolts 30, 31 and is prevented from shifting along the longitudinal axis of the luminaire. When clamped against pipe bracket 5 and tightened, yoke member 28 urges pipe bracket 5, movable bearing 12 and fixed bearing 7 into tight engagement with one another as shown in FIGURE 4. Such clamping action retains luminaire housing 1 in the angular relation to pipe bracket 5 which is determined by the position of movable bearing 12 relative to fixed bearing 7.

FIGURE 2 shows the relative position of luminaire housing 1 with respect to pipe bracket 5 where screw 22 is located about midway of the length of slot 23 in movable bearing 12. FIGURE 3 shows a different angular position of luminaire housing 1 relative to pipe bracket 5 where screw 22 is at the extreme rear end of slot 23. Such adjustment of luminaire housing 1 about the transverse axis, which coincides with the center of curvature of the arcuate bearing surfaces of bearings 7 and 12, provides for tilting of the luminaire to project the light therefrom at different desired distances along its longitudinal axis, e.g., across the street. Adjustment of the luminaire may also be made about the longitudinal axis of pipe bracket 5, after loosening yoke member 28, to provide for directing light at desired angles laterally of the luminaire, e.g., along the street.

It will be understood, of course, that although bearing member 12 is referred to herein as movable relative to fixed bearing 7, during the adjustment of luminaire housing 1 in the mounted assembly, bearing member 12 remains stationary with pipe support 5, and luminaire housing 1 together with its integral bearing portion 7 is moved relative to bearing member 12.

In practice, the installed luminaire is adjusted by loosening yoke member 28, either by means of exterior bolt heads 30*a*, 31*a* at the top of the luminaire, or by interior nuts 30*b*, 31*b* from below the luminaire, and as a result movable bearing 12 becomes disengaged from fixed bearing 7. Normally the center of gravity of the luminaire lies below the longitudinal axis of pipe bracket 5 and therefore the luminaire does not tend to turn about the longitudinal axis of the pipe bracket 5 of its own accord when yoke member 28 is loosened. The luminaire may then be adjusted about either the axis of pipe bracket 5 or the transverse axis of the arcuate bearing surfaces, or about both axes, to place the luminaire in the desired position relative to pipe support 5, and yoke member 28 is then tightly clamped to the latter to firmly hold the luminaire in the adjusted position.

The slipfitter clamping arrangement, as seen best in FIGURE 4, is such that it is adapted for mounting on pipe supports of various diameters, it being necessary merely to suitably adjust the spacing of yoke member 28 relative to movable bearing 12 to receive the particular pipe bracket. The use of adaptor parts such as necessary with certain known types of slipfitter devices is thus dispensed with.

There is thus provided in accordance with the invention an improved luminaire slipfitter mounting device which is readily and economically manufactured, is adaptable to supports of various sizes, and is easily adjustable from either inside or outside the luminaire for adjusting the luminaire about transverse and longitudinal axes to a desired position.

While the present invention has been described with reference to particular embodiments thereof, it will be understood that numerous modifications may be made by those skilled in the art without actually departing from the scope of the invention. Therefore, the appended claims are intended to cover all such equivalent variations as come within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A luminaire adapted to be mounted on an elongated support comprising, in combination, a housing having a first axis extending along the longitudinal axis of the elongated support when said housing is mounted thereon, and adjustable slipfitter means arranged on said housing for mounting the same on the elongated support and comprising first bearing means fixed to said housing, second bearing means adjustably secured to said first bearing means for adjustment relative thereto along an arcuate path about an axis transverse said first axis to a selected position, said second bearing means engageable on one side with said first bearing means and on the opposite side with one side of the elongated support, and clamping means adjustably secured to said housing independent of said second bearing means and engageable with the opposite side of the elongated support for clamping together the elongated support, said first bearing means and said second bearing means for holding said housing in adjusted position on the elongated support.

2. A luminaire as defined in claim 1, at least one of said first and second bearing means having an arcuate bearing surface adjacent the other of said bearing means.

3. A luminaire as defined in claim 1, said first and second bearing means having complementary arcuate bearing surfaces adjacent one another and concentric about said transverse axis.

4. A luminaire as defined in claim 3, said second bearing means being held immovable relative to said first bearing means when said clamping means is tightly clamped to the elongated support, and being movable relative thereto when said clamping means is loosened.

5. A luminaire as defined in claim 3, said clamping means including a yoke member and adjusting screw means extending through said housing and adjustably secured to said yoke member, said adjusting screw means having heads at opposite ends respectively outside and inside said housing for alternative operation of said clamping means.

6. A luminaire as defined in claim 1, said clamping means including adjusting means having a portion arranged outside said housing for external operation of said clamping means.

7. A luminaire as defined in claim 6, said adjusting means also having a portion arranged inside said housing for internal operation of said clamping means.

8. A luminaire as defined in claim 1, said first bearing means having an arcuate bearing surface with its center of curvature on said transverse axis, said second bearing means comprising a unitary member having an arcuate bearing surface on said one side concentric with said arcuate bearing surface of said first bearing means, said opposite side thereof being curved about said first axis for engaging the elongated support, said unitary member having a slot arranged centrally thereof, and retaining means passing through said slot and secured to said housing for loosely attaching said unitary member to said first bearing means.

9. A lumnaire as defined in claim 8, said clamping means comprising an elongated yoke member extending transversely of said first axis and a pair of spaced adjusting screws, each screw passing through said housing and threadably secured to said yoke member adjacent each end thereof, said unitary bearing member lying between and spaced from said adjusting screws.

10. A luminaire as defined in claim 9, slot means arranged in said housing adjacent the opposite ends of said yoke member and extending along the path of movement of said yoke member during adjustment thereof, said yoke member having portions at its opposite ends projecting into and riding along said slot means.

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EDWARD C. ALLEN, *Primary Examiner.*

CARL W. TOMLIN, *Examiner.*

DAVE W. AROLA, *Assistant Examiner.*