

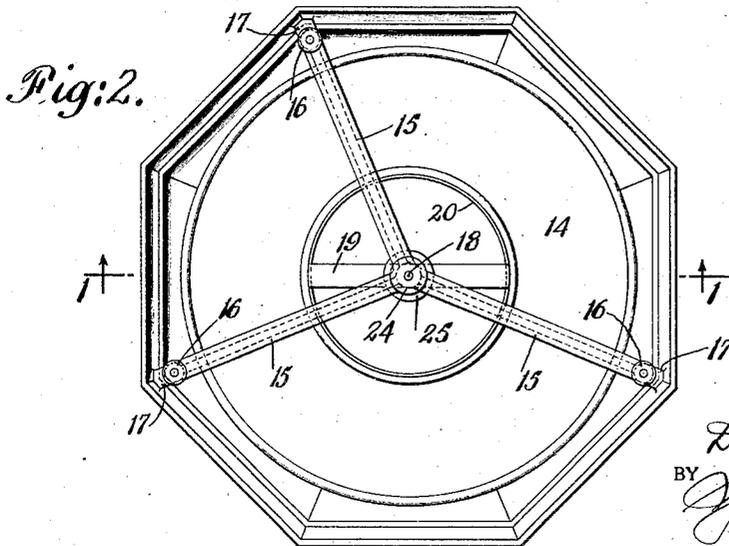
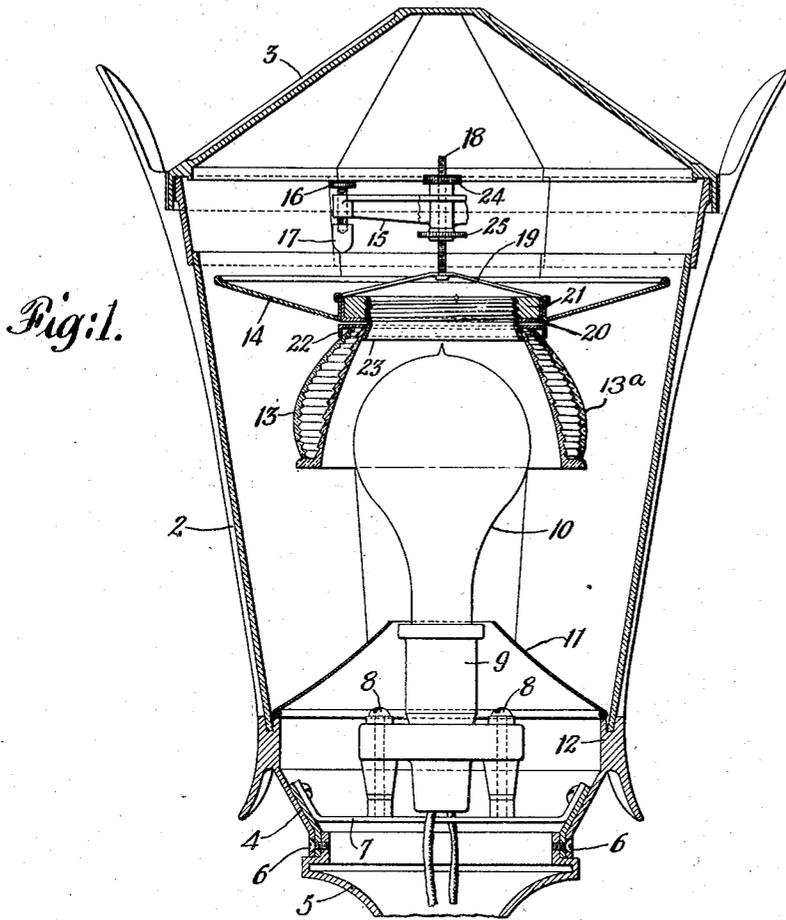
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LIGHTING FIXTURE

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UNITED STATES PATENT OFFICE

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LIGHTING FIXTURE

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This invention relates to lighting fixtures, and particularly to street lighting lamps or fixtures. Such lights are ordinarily arranged either to distribute the light equally around the post through the 360°, or else to give an asymmetric distribution. The latter type usually employs an asymmetric refractor which diverts or redistributes to the street side of the lamp a portion of the light which would ordinarily be thrown to the sidewalk side of the lamp.

One of the primary objects of my invention is to insure proper distribution of the light from an asymmetric lamp.

More particularly, it is an object of the invention to provide means for adjusting, and maintaining the adjustment of, the refractor.

Another object of the invention is to make possible proper adjustment of the refractor, both with relation to the center of light of the bulb or other source of light and with relation to the street and sidewalk sides of the fixture, while the lamp is in position and burning.

Still another object of the invention is the provision of apparatus of the character outlined above wherein the refractor, reflector, and their support, may be removed and replaced as a unit for purposes of cleaning or repair.

How these, and other advantages which are incident to my invention or may occur to those skilled in the art, are obtained, will be clear from the following description of the present preferred embodiment of the invention, reference being had to the accompanying drawings, wherein:

Fig. 1 is a vertical section on the line 1—1 of Fig. 2 with certain parts in elevation, illustrating a street lighting fixture embodying my improvements; and

Fig. 2 is a top plan view of the device, with the cover of the fixture removed, illustrating particularly the adjustable, three-armed support.

Referring first to Fig. 1, it will be seen that I have therein illustrated a street lighting fixture 2, which as to outward form may be of any suitable type, having a cover 3 and base

4, and which may be supported in any preferred manner, as by hanging from a support, or by mounting, as here shown, on a post or standard 5 by screws or bolts 6. Supported from the base 4, as by the bar 7 and bolts 8, is a lamp socket 9 with its lamp 10. I have shown a fixed socket, since my invention obviates any necessity for adjusting the position of the lamp, but it will be understood, of course, that an adjustable socket or socket support may be used. The lower reflector 11 may be mounted, as shown, on a shoulder or annular rib 12 inside the base.

Above the lamp 10 I support the asymmetric refractor 13 and the upper reflector 14, in the following manner: A spider or three-armed support 15, with an adjusting screw 16 at the end of each arm is supported within the shell of the fixture 2 on three cup-shaped lugs or bosses 17. At the juncture of the arms of the spider is carried a threaded bolt or rod 18, bearing at its lower end the strap or bridge-piece 19 of an annular supporting member 20 which, in turn, carries on its periphery the reflector 14, and within it the nut or threaded body portion 21. The refractor 13, is clamped at the top by the external ring 22 and internal threaded ring 23 the latter being adapted to be screwed up tight into the threaded body or nut 21 of the supporting member 20. Upper and lower nuts 24, 25 are provided on the rod 18 for locking the same, with its supported parts, in position, after proper adjustment has been made. I have indicated the asymmetry of the refractor (in Fig. 1) by a difference in contour of the right-hand side 13^a thereof as compared to the opposite side.

From the foregoing it will be obvious that the asymmetric refractor may be adjusted in three ways relative to the source of light. First, it may be raised or lowered vertically (the upper reflector moving therewith) for proper positioning with reference to the light center, which varies with different bulbs. Second, it may be turned at will through the 360° of its circle in order to have its side of greater light distribution at any desired place, as for instance, on the street side of the lamp. Third, it may be set level or

tilted in any direction, by means of the three screws 16, which also give additional vertical adjustment when necessary.

It will now be clear that adjustment may be made with the lamp bulb in place and burning, so that proper focussing and distribution of light are assured, which is not generally possible with the lights now commonly employed; and also that maladjustment is provided against by the lock nuts 24 and 25 which are tightened up after proper adjustment has been made.

The whole assembly of refractor, reflector, and supporting structure may, for cleaning or replacement of parts, be lifted out of the fixture from above as a unit, thus simplifying, and reducing the labor and expense incident to, the maintenance of the lamp.

I claim:—

1. In a lighting fixture, the combination of a refractor, a reflector, and a common support therefor inherently adjustable with relation to the fixture and removable therefrom and replaceable therein as a unit without disturbing the adjustment.

2. In a lighting fixture, the combination of a refractor, a threaded support therefor, a spider in which a portion of said support is adapted to be screwed, and means at the feet of the spider supporting the same from the fixture.

3. In a lighting fixture, the combination of a refractor, a threaded support therefor, a spider in which a portion of said support is adapted to be screwed, and means at the feet of the spider supporting the same from the fixture, including an adjusting screw at each foot.

4. In a lighting fixture, the combination of a refractor, a threaded support therefor, a spider in which a portion of said support is adapted to be screwed, and means at the feet of the spider supporting the same from the fixture, together with locking means on the threaded support adapted to engage the spider.

5. In a lighting fixture, the combination of a refractor, a threaded support therefor, a spider in which a portion of said support is adapted to be screwed, and means at the feet of the spider supporting the same from the fixture, together with a reflector mounted on the refractor support.

6. In a lighting fixture, a support for a refractor and a reflector comprising an annular portion internally threaded and adapted to carry the reflector on its periphery, gripping means for the refractor threaded in said portion, means attached to said annular portion having a screw portion, a spider in which said means is adjustably screwed, and adjustable supports for the spider feet.

7. In a lighting fixture, a support for a refractor and a reflector comprising an annular portion internally threaded and adapt-

ed to carry the reflector on its periphery, gripping means for the refractor threaded in said portion, means attached to said annular portion having a screw portion, a spider in which said means is adjustably screwed, and adjustable supports for the spider feet together with lock nuts on said screw portion.

8. In combination with a lighting fixture and its light, a refractor supported above the light, and adjusting means whereby its position with respect to the light may be adjusted vertically, angularly on a horizontal plane, and angularly in any vertical plane.

9. In a fixture having an illuminating element, a light distributor associated therewith, and a multi-part supporting structure having a normally fixed mounting on the fixture and a normally fixed connection to the distributor to support the same, parts of said structure being relatively adjustable one to another, and said structure and distributor being freely liftable as a unit from said mounting.

10. In a fixture, a lighting element, a light distributor associated therewith, a support for the distributor, and fixed seats in the fixture on which said support is removably seated, said support including a plurality of relatively adjustable elements to provide adjustments of the distributor with respect to the lighting element, and means for maintaining adjustments of said relatively adjustable elements to prevent maladjustment thereof upon removal of the structure from the fixture.

11. A lighting fixture having an illuminating element mounted therein and a light distributor supported independently thereof from an upper portion of the fixture, seating means in said upper portion, and a supporting device for the distributor capable of being lowered upon and lifted from said seating means from above, said device including relatively adjustable parts providing universal adjustment of the distributor with respect to the illuminating element.

12. A lighting fixture having an illuminating element mounted therein and a light distributor supported independently thereof from an upper portion of the fixture, seating means in said upper portion, and a supporting device for the distributor capable of being lowered upon and lifted from said seating means from above, said device including relatively adjustable parts providing universal adjustment of the distributor with respect to the illuminating element, together with means for maintaining adjustments when the supporting device is lifted out of the fixture.

13. The combination, with a lighting fixture and its illuminating element, of an asymmetric light distributor disposed around said element, means whereby said distributor may

be rotated to alter the directions of the asymmetric rays, and means for altering the angle of its axis with respect to said element.

5 14. The combination, with a lighting fixture and its illuminating element, of an asymmetric light distributor disposed around said element, means whereby said distributor may be rotated to alter the directions of the asymmetric rays, and means for altering the angle
10 of its axis with respect to said element, together with means for shifting the distributor along the line of its axis.

15 15. In combination, a fixture having a lighting element, an asymmetric light distributor cooperating with said element, and a supporting device for the distributor on the fixture, said support including means for rotating the distributor with respect to said
20 element, means for altering the angle of its axis with respect thereto, and means for shifting its position along the line of its axis.

25 16. In combination, a fixture having a lighting element, an asymmetric light distributor cooperating with said element, and a supporting device for the distributor on the fixture, said support including means for rotating the distributor with respect to said
30 element, means for altering the angle of its axis with respect thereto, and means for shifting its position along the line of its axis, all of said structure except said element being liftable from and seatable in said fixture as a unit without disturbing the adjustment of said several means.

35 17. The combination, with a lighting fixture and its illuminating element, of an asymmetric light distributor disposed around said element, means whereby said distributor may be rotated to alter the directions of the asymmetric rays, and means for shifting the distributor
40 along the line of its axis.

In testimony whereof, I have hereunto signed my name.

DAVID B. HANNA.

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