

May 29, 1934.

K. A. SAWIN

1,960,854

ELECTRIC LIGHT FIXTURE

Filed April 22, 1932

Fig. 1.

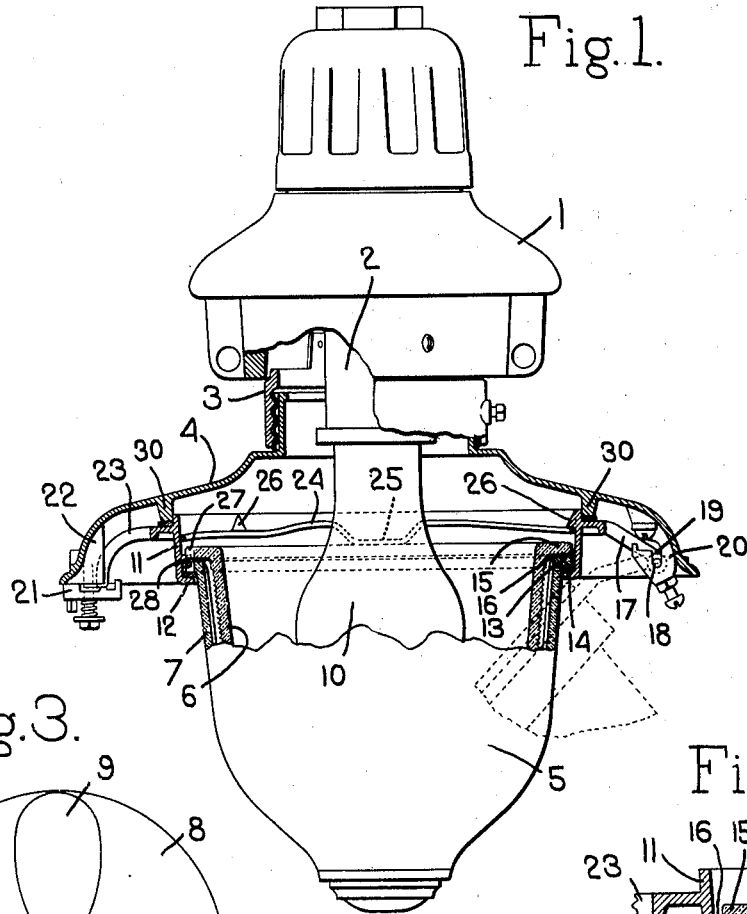


Fig. 3.

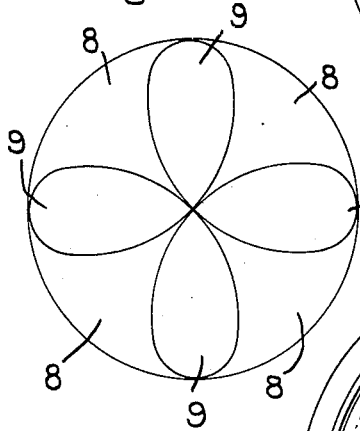


Fig. 2.

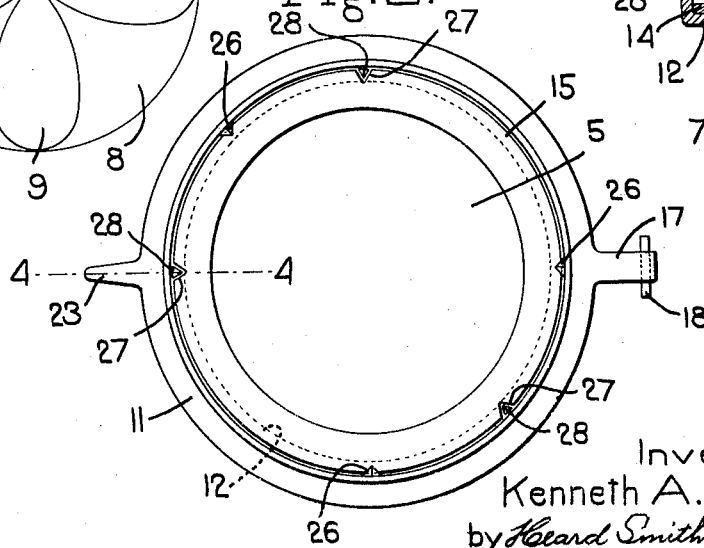
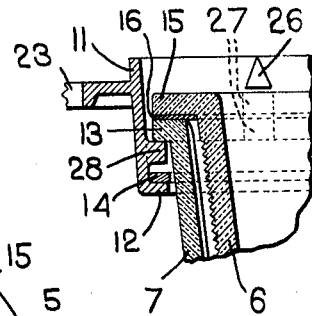


Fig. 4.



Inventor.
Kenneth A. Sawin
by Heard Smith & Tennant.
Attys.

UNITED STATES PATENT OFFICE

1,960,854

ELECTRIC LIGHT FIXTURE

Kenneth A. Sawin, Cambridge, Mass., assignor to
Wheeler Reflector Company, Boston, Mass., a
corporation of Massachusetts

Application April 22, 1932, Serial No. 606,935

4 Claims. (Cl. 240—147)

This invention relates to direct electric lighting fixtures and particularly to fixtures which are equipped with a so-called "refractor" for producing a definite distribution of the light within the lighted area.

In electric light fixtures of this type it is necessary that the refractor should be properly positioned within the fixture body in order that there may be a correct distribution of light, or in other words, that the brightly illuminated portions of the illuminated area should be correctly positioned.

The present invention has for its object to provide a novel refractor support for an electric lighting fixture of this type by which the refractor can be installed in the fixture in one position only so that if at any time it is necessary to remove a refractor for cleaning purposes or to replace a broken one the correct position of the refractor when it is reassembled with the fixture is ensured.

In order to give an understanding of the invention I have illustrated in the drawing a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a view partly in section of a fixture embodying my invention;

Fig. 2 is a top plan view of the refractor holder with the refractor therein;

Fig. 3 is a diagrammatic view showing one way in which the refractor may distribute light in the area lighted by the lamp;

Fig. 4 is an enlarged section on the line 4—4, Fig. 2.

In the drawing 1 indicates a receptacle head of a lighting fixture now commonly used and 2 is the socket or receptacle element to which the lamp 10 is secured. The receptacle head is shown as provided with the usual supporting ring or collar 3 to which a supporting body member 4 is attached, said body member constituting the support for the refractor.

The refractor is indicated generally at 5 and this is shown as being of the usual asymmetrical type, that is, one which comprises the inner and outer members 6 and 7, said members being so shaped and designed as to produce the desired refraction or distribution of the light throughout the lighted area.

One common method of light distribution is shown in Fig. 3 wherein 8 indicates the illuminated area and 9 indicate portions of the illuminated area which are more highly illuminated than other portions thereof.

The refractor 5 is designed to refract the light

from the lamp 10 so as to cause a greater amount of light to be directed onto the illuminated portions 9 than onto the other portions of the illuminated area.

This refractor 5 is shown as supported in a refractor holder 11 herein shown as in the form of a ring provided at its lower edge with the inverted annular supporting flange or seat 12 on which the refractor is supported. The outer element 7 of the refractor is formed with the outwardly-directed peripheral flange 13 which rests on the supporting flange 12, there being a suitable gasket 14 between the flanges 13 and 12. The inner member 6 of the refractor is also provided with a peripheral flange 15 at its upper end which rests on the flange 13, there also being a packing or gasket 16 between the flanges 13 and 15.

The two elements of the refractor are held in their assembled relation by usual means.

The refractor holder 11 is hinged to the body 4, said holder 11 having an arm 17 extending therefrom which is provided with a pivot pin 18 adapted to be received in a slot 19 formed in a bracket 20 that is secured to the under side of the body 4. The refractor holder is held in its operative position, in which it rests against a rib 30 formed on the under side of the body 4 by means of a latch 21 which is carried by a bracket 22 secured to the under side of the body 4 and is adapted to engage the end of an arm 23 extending from the refractor holder 11.

The parts thus far described are such as are usually found in electric light fixtures of this type and the present invention relates to a novel construction of holder 11 by which the refractor can be placed in its operative position in the holder only when the refractor is in the correct position to produce the desired distribution of light.

The refractor is retained in the refractor holder by means of a split resilient retaining ring 24 which is formed with one or more offset or depressed portions 25 adapted to engage the flange 15 and which is also adapted to be placed under bosses or projections 26 extending inwardly from the inner face of the refractor holder 11. When this retaining ring 24 is in place it is flexed or placed under tension by its engagement with the under side of the bosses 26 and with the flange 15 whereby the refractor will be firmly held against the supporting flange 12.

The flanges 13 and 15 are provided with notches 27 having the same relative arrangement as the projections 26.

When the refractor is to be placed in the holder the latter will be unlatched from the supporting

member 4 and either swung down into the dotted line position shown in Fig. 1 or possibly entirely removed from the supporting member, it being observed that the pivotal connection between the holder and supporting member is one which permits of such removal. In either event, the refractor is placed into the holder from above and in doing this it is first positioned so that the bosses or projections 26 will pass through the notches 27.

The holder 11 is also provided with a plurality of refractor-positioning inwardly-extending projections 28 which are situated below the projections 26 and adjacent the supporting flange 12, said refractor-positioning projections 28 having the same relative arrangement as the notches 27 in the flanges of the refractor but being so disposed that when the refractor is resting on the flange 12 with the positioning projections 28 occupying the notches 27 said refractor will be correctly positioned to produce the desired distribution of light in the lighted area 8.

The positioning projections 28 are situated below the projections 26 a distance slightly greater than the combined thicknesses of the flanges 13 and 15 and the hold-down projections 26 are situated out of line with the positioning projections 28.

In installing the refractor in the holder 11, the refractor is first inserted through the holder from above and positioned so that its notches 27 are in alignment with the projections 26. As the refractor is thus being put in place and as the flanges 13 and 15 are carried past the projections 26 said flanges will come against the positioning projections 28 as seen in Fig. 4.

In order to bring the refractor into its final position resting against the supporting flange 12 it is necessary to turn the refractor about its axis while the flanges 13, 15 thereof are resting on the projections 28 to bring the notches 27 into alignment with the positioning projections 28. When this is done then the refractor may be lowered onto the flange 12 and when in this position the flange 15 is sufficiently below the projections 26 to permit the retaining ring 24 to be placed between the flange 15 of the refractor and the under face of the projections 26. When the refractor is thus in place with the projections 28 occupying the notches 27 said refractor will be properly positioned in the holder 11 to give the desired light distribution throughout the lighted area 8. It will be noted that with the above construction the locking ring 24 cannot be placed in position to lock the refractor to the flange except when the refractor is resting on said flange and because of the complemental portions 27 and 28 said refractor cannot rest on the flange except when it is in proper position to give the desired light distribution. When the refractor is only partially inserted in the holder as shown in Fig. 4 there is not room between the flange 15 and the projections 26 to insert the locking ring 24 and said ring can only be placed in position when the refractor flange 13, 15 has been carried off from the lugs 28 and is resting on the flange 12.

While I have illustrated the invention as it might be used in connection with a particular type of receptacle head yet I wish it understood that the invention is not limited to any particular construction of receptacle head but is adapted for general use where the electric light fixture embodies a refractor of this nature.

I claim:

1. An electric light fixture comprising a re-

ceptacle head, a lamp receptacle carried thereby, a lamp mounted in said receptacle, a refractor holder provided with a refractor-holding flange, an asymmetrical refractor supported by said flange, said refractor having a peripheral notch, a positioning projection on the refractor holder which occupies the notch and prevents rotation of the refractor relative to the refractor holder, a hold-down projection on the refractor holder spaced above the positioning projection and out of line therewith, said hold-down projection being of a size to pass through the peripheral notch in the refractor when the latter is being assembled with the holder, and spring means interposed between the hold-down projection and the refractor to retain the latter against the flange.

2. An electric light fixture as described in claim 1 in which the refractor has a peripheral flange which is seated on the flange of the holder and said holder is provided with a plurality of inwardly-directed hold-down projections and also with a plurality of refractor-positioning projections below the hold-down projections, said refractor-positioning projections having the same relative spacing as the hold-down projections but situated out of line therewith in a vertical direction, and in which the flange of the refractor is provided with notches properly spaced to permit the hold-down projections to pass through them as the refractor is assembled with the holder and to receive the positioning projections when the refractor is turned about its axis and the flange thereof is seated on the flange of the holder, and a locking ring interposed between the hold-down projections and the flange of the refractor for holding it in position.

3. An electric light fixture having a supporting body, a refractor holder pivoted thereto and provided with a refractor-supporting flange, an asymmetrical refractor supported on said flange, said refractor and holder having complemental interlocking portions which prevent turning movement of the refractor relative to the holder when the refractor is seated on the flange, said holder also having a hold-down projection situated above the complemental interlocking portions and out of line therewith, and a resilient locking ring interposed between the hold-down projection and the refractor for yieldingly holding the latter on the supporting flange.

4. An electric light fixture having a supporting body, a refractor holder pivoted thereto and provided with an inwardly-directed refractor-holding flange, an asymmetrical refractor having an outwardly-extending flange portion at its upper end supported on the refractor-supporting flange, the flange portion of said refractor and the holder having complemental interlocking portions which prevent turning movement of the refractor relative to the refractor holder when said refractor is seated on the flange, said holder also having a hold-down projection situated above and out of line with the complemental interlocking portions and spaced therefrom a distance slightly greater than the thickness of the flange portion of the refractor, and a resilient locking ring interposed between the hold-down projection and said flange portion of the refractor for yieldingly holding the latter on the supporting flange.