

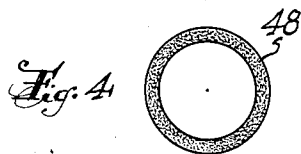
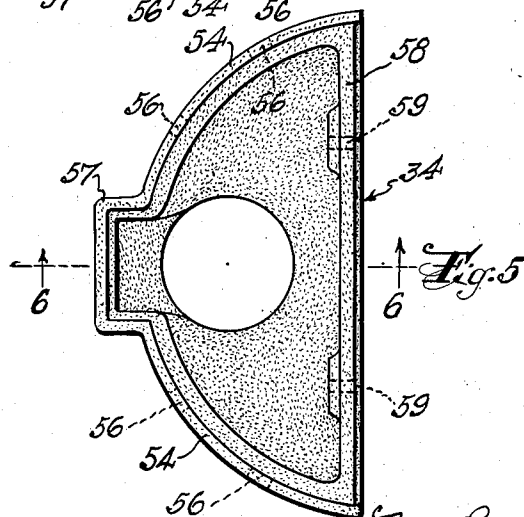
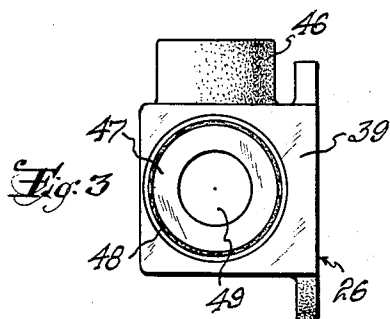
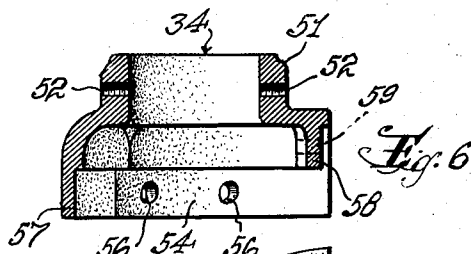
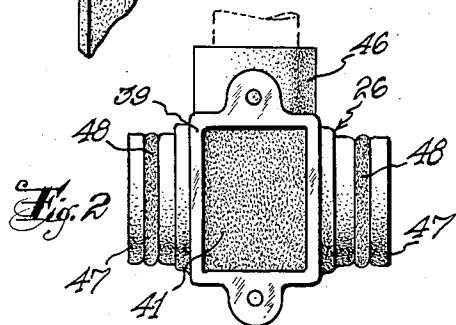
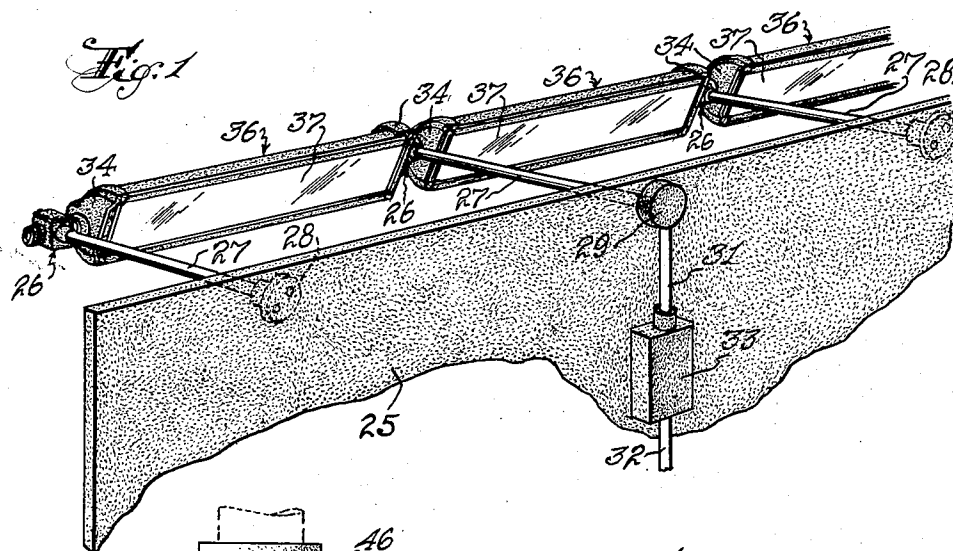
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J. B. SEIDMAN
LIGHTING FIXTURE

2,964,616

Filed May 1, 1958

3 Sheets-Sheet 1



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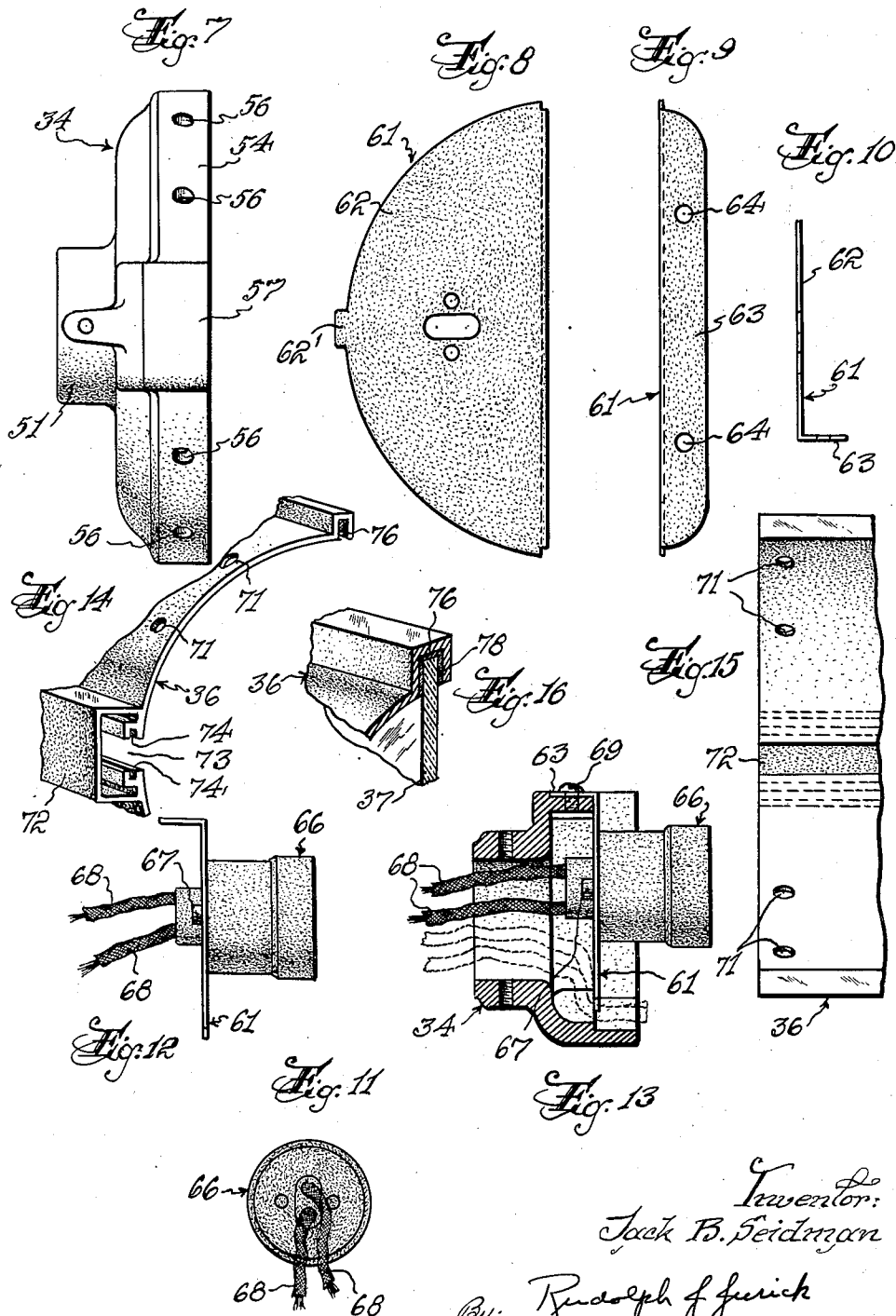
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3 Sheets-Sheet 2



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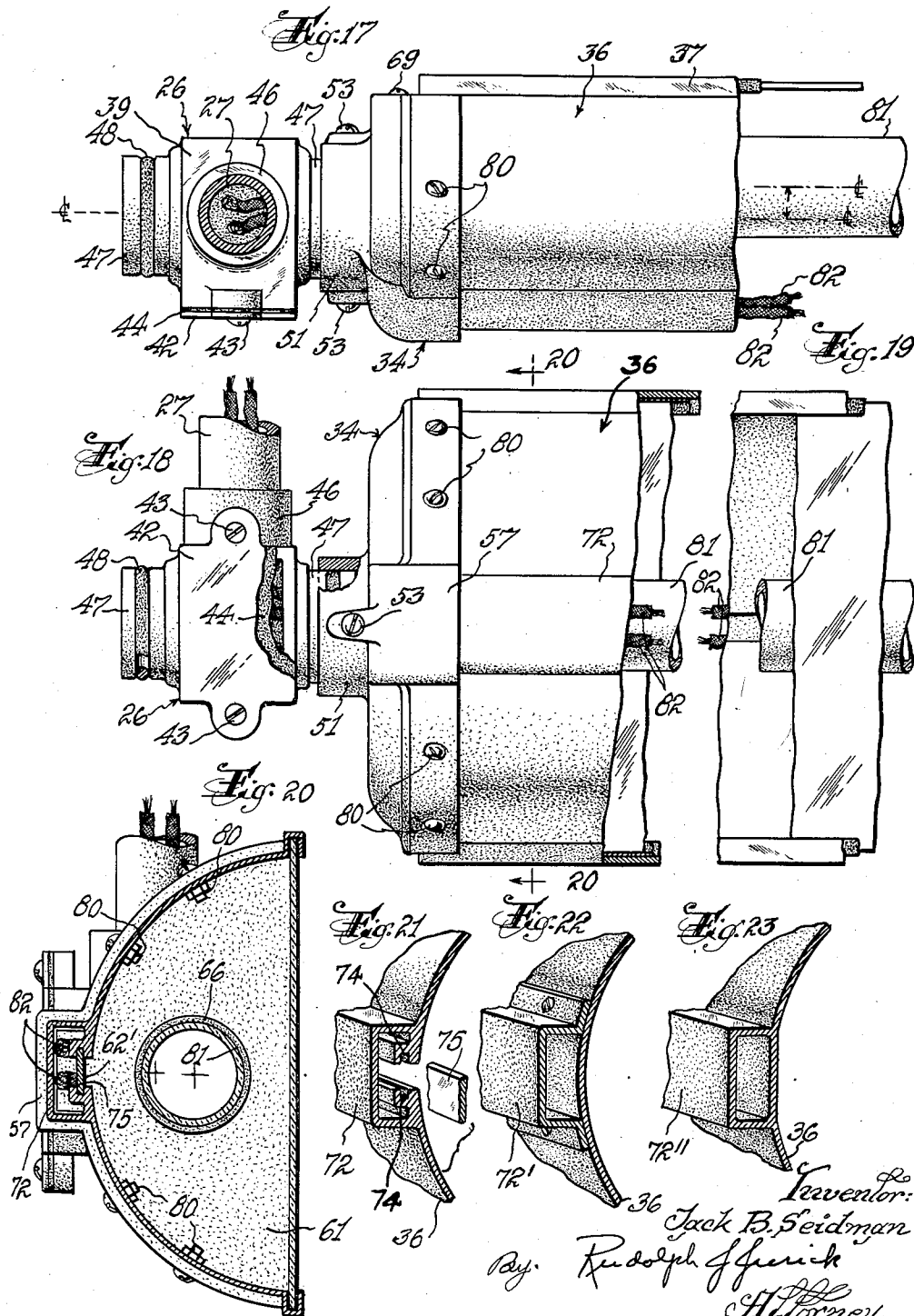
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3 Sheets-Sheet 3



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2,964,616

LIGHTING FIXTURE

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5 Claims. (Cl. 240—51.11)

This invention relates to a lighting fixture, and more particularly to an improved mounting for fluorescent lamps of the elongated tubular type.

My improved fluorescent lamp mounting arrangement is particularly advantageous where a plurality of fluorescent lamps are mounted in an end-to-end arrangement. The lighting fixture is adapted for outdoor installation and, for purposes of illustration, has been shown mounted upon a sign. It will be understood, however, that the use of the fixture is not restricted to signs, but may be used for the illumination of billboards, store fronts, posters, and the like. Since the lighting fixture is designed primarily for outdoor use, it is of a weather-proof construction.

Prior art outdoor weather-proof lighting fixtures are generally difficult to install and/or maintain and service. For example, in a lighting arrangement utilizing two fluorescent lamps in an end-to-end relation, most prior art mounting arrangements require that three spaced outlet, or junction, boxes be connected together by a pair of conduits and mounted, or supported, on the sign to be illuminated. Supporting conduit arms extend from each of the outlet boxes and support the lighting fixtures adjacent the arm ends. The fixtures must generally be assembled and wired from ladders high above the ground. Difficulty is generally encountered, in the prior art fixtures, in drawing the necessary wires through the rather elaborate conduit system. In contrast, the lighting fixtures of my invention may be substantially completely assembled on the ground. Furthermore, since novel conduits, or raceways, are incorporated in the reflectors of my lighting fixtures, the fixtures may be partially wired on the ground. The conduits formed on the reflectors of the lighting fixtures of my invention eliminate the need for the elaborate conduit and junction box system of prior art arrangements. It will be understood, then, that my lighting fixture may be installed at a very low cost since the installation thereof is easy and simple.

The design of my lighting fixture is such that the maintenance and service expenses are, also, greatly reduced. The lamp sockets, or holders, in my fixture, for example, are easily changed, or replaced, when necessary without completely disassembling the entire fixture. The job is easily done by one man. With most prior art fixtures, at least two men are needed to replace a defective lamp socket since the fixture must first be removed from its mounting. The ease of servicing my fixture results from the use of a novel junction box with an accessible splicing cavity, and lamp holder bracket arrangement. With my mounting arrangement, defective lamp sockets are replaceable at a minimum labor expense.

An object of this invention is the provision of a lighting fixture for fluorescent tubes which is easily assembled and disassembled whereby the cost of installation and maintenance is a minimum.

An object of this invention is the provision of an improved lighting fixture for elongated fluorescent lamps

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which is particularly adapted for use in mounting the lamps in an end-to-end manner, the said fixtures including reflectors having a raceway, or conduit, thereon whereby no elaborate system of conduits and junction boxes external of the fixtures is required.

An object of this invention is the provision of a lighting fixture for fluorescent lamps which includes an outlet, or junction, box having a splicing cavity and removable cover therefor, and an easily removable lamp socket, the said lamp sockets being replaceable without substantially completely disassembling the said fixture.

An object of this invention is the provision of a fluorescent lamp lighting fixture comprising a housing provided with means for connection to a supporting arm, the said housing being formed with an aperture in one wall and an access opening in another wall thereof, a closure detachably secured over the said access opening, an end member with an aperture therein, means detachably securing the said end member to the said housing with the apertures therein in register, an elongated reflector detachably secured to the said end member, a lamp socket bracket detachably secured to the said end member, the said lamp socket bracket being removable from the end member when the said end member is secured to the said housing, and a lamp socket detachably secured to the said socket bracket.

An object of this invention is the provision of a lighting fixture for elongated fluorescent lamps comprising a housing formed with an aperture in one wall, an end member with an aperture therein detachably secured to the said housing with the apertures in register, an elongated reflector having a generally longitudinally extending raceway thereon, and means detachably securing the said reflector to the said end member with the said raceway on the reflector in communication with the said end member.

These and other objects and advantages will become apparent from the following description when taken with the accompanying drawings. It will be understood that the drawings are for purposes of illustration and are not to be construed as defining the scope or limits of the invention, reference being had for the latter purposes to the appended claims.

In the drawings wherein like reference characters denote like parts in the several views:

Figure 1 is a fragmentary perspective view of my novel lighting fixture attached to a sign;

Figure 2 is a bottom view of a housing employed in the lighting fixture;

Figure 3 is an end view of the housing of Figure 2;

Figure 4 is an end view of a sealing ring;

Figure 5 is an end view of an end member employed in the lighting fixture;

Figure 6 is a sectional view taken on line 6—6 of Figure 5;

Figure 7 is a top view of the end member;

Figure 8 is an end view of a lamp socket bracket employed in my light fixture;

Figure 9 is a bottom view of the lamp socket bracket;

Figure 10 is a side view of the lamp socket bracket;

Figure 11 is an end view of a lamp socket employed in my lighting fixture;

Figure 12 is a side elevational view of a lamp socket attached to the lamp socket bracket;

Figure 13 is a side view of the assembled lamp socket and lamp socket bracket of Figure 12 attached to the end member with parts shown broken away for clarity;

Figure 14 is a fragmentary perspective view of a reflector employed in my lighting fixture;

Figure 15 is a fragmentary bottom view of the reflector;

Figure 16 is a fragmentary sectional perspective view

of the reflector with a light transmitting cover secured thereto;

Figure 17 is a fragmentary side view of the assembled light fixture;

Figure 18 is a fragmentary top view of the assembled light fixture;

Figure 19 is a fragmentary bottom view of the light fixture;

Figure 20 is a sectional view taken on line 20—20 of Figure 18;

Figure 21 is a fragmentary sectional perspective view of the reflector of Figure 11 and showing also a cover for the raceway;

Figure 22 is a fragmentary sectional perspective view of a modified form of reflector and attached raceway embodying my invention; and

Figure 23 is a fragmentary sectional perspective view of another modified form of reflector and integral raceway embodying my invention.

Reference is first made to the fragmentary perspective view of Figure 1 wherein my novel lighting fixture is shown attached to the front of an outdoor sign 25 of any size. As mentioned above, the fixture is adapted for lighting other objects as well, and is not restricted for use on signs.

The lighting fixture includes a plurality of junction, or outlet, boxes 26, the number required depending upon the length of the fixture. Supporting arm members 27 are threadedly secured to the boxes 26, and extend rearwardly thereof. The ends of the arms 27 are threadedly secured to flanged supporting members 28 which, in turn, are suitably secured to the face of the sign. The arm members 27 may, obviously, be made of any desired length suitable to the sign dimensions. At least one of the arm members 27 is in the form of a tubular conduit, or pipe, which communicates with a junction box 29 suitably attached to the rear of the sign. Other conduits 31 and 32 connect the junction box 29 to a suitable ballast 33 and thence to a suitable source of potential, not shown in the drawings.

End members 34 are secured to the junction boxes 26 and support elongated reflectors 36 which partially encircle fluorescent lighting lamps within the fixture. As will become apparent, later, in the detailed description of the fixture, the end members 34 with the attached reflectors 36 are rotatable on a horizontal axis extending between the junction boxes 26 whereby light from the lamps may be directed in any desired radial direction therefrom. Suitable light transmitting covers 37 are attached to the reflectors and prevent rain and water, and the like, from contacting the reflector surface, fluorescent lamp, and other components therein.

Reference is now made to Figures 2 and 3 wherein two views of the junction box 26 are shown. The junction box 26 comprises a housing 39 of a generally hollow cubical configuration which includes an access opening 41 therein. As seen in Figures 17 and 18, a closure, or cover, member 42 is removably secured to the housing over the access opening by screws 43 which threadedly engage tapped holes in the housing. A gasket 44 may be disposed between the housing and cover to effect a weather-proof seal therebetween when the screws are tightened. Referring again to Figures 2 and 3, an integrally formed, internally threaded, collar 46 extends from another side of the junction box 39. The supporting arms 27, as seen in Figure 1, engage the threaded collar 46. As mentioned above, one or more of the arms 27 are of the tubular conduit type and provide a passageway for lead wires from the housing 39 to the outlet box 29 of Figure 1.

As best seen in Figure 2, a pair of coaxial, tubular flange members 47 extend from opposite sides of the housing 39. Resilient O-ring members 48 (as seen also in Figure 4) are positioned in grooves formed on the flange members 47, and are adapted to provide a weather-

proof seal between the collar and attached end member 34 shown in Figure 1. The flange members 47 are provided with knock-out type wall members 49 of weather-proof construction, as seen in Figure 3, since only one collar member is utilized in the junction boxes 26 at the ends of the fixtures. The wall members 49 are easily removed when necessary.

Reference is now made to Figures 5, 6 and 7 of the drawings wherein there are shown various views of an end member 34. The end member 34 is provided with an integrally formed collar 51 which is adapted to slidably, and rotatably, fit over the flange 47 on the junction box 26. Tapped holes 52 are provided in the collar 51, which holes are adapted to receive set screws 53, as seen in Figures 17 and 18, which serve to secure the members together in a non-rotatable manner when tightened.

Curved flange members 54 are formed on the end members 34, the curved flanges being provided with holes 56 which are utilized in securing the end members to the reflector 36. An outwardly projecting pocket portion 57 is formed on the end member and provides a raceway receiving structure within which a wiring raceway, or conduit, on the reflector terminates, as will become apparent in the assembled views of the fixture described below. A straight flange 58 with a pair of tapped holes 59 therein provides a mounting structure for attachment of a lamp socket bracket to the end member. Both the reflector and lamp socket bracket are described in detail below.

Reference is now made to Figures 8, 9 and 10 wherein various views of a lamp socket bracket 61 are shown, which bracket is adapted to be attached to the end member 34. The generally L-shaped bracket comprises a plane, generally semi-circular, portion 62 having a right-angularly disposed mounting flange 63 which flange is provided with holes 64. The flange 63 is adapted to abut the straight flange 58 on the end member 34 in the assembled light fixture.

A conventional lamp socket 66, of the type shown in Figure 11, is adapted to be mounted on the lamp socket bracket 61. As seen in Figure 12, the lamp socket is attached by screws 67 to the bracket 61. The leads 68 from the lamp socket extend to the left of the bracket 61, as viewed in Figure 12, while the lamp socket terminals which are adapted to contact the fluorescent lamp terminals extend to the right side thereof.

Reference is now made to Figure 13 of the drawings wherein the assembled lamp socket and bracket are shown attached to the end member 34. Screws 69 extend through the holes 64 in the bracket 61 and threadedly engage the tapped holes 59 in the straight flange 58 on the end member to hold the bracket 61 to the end member 34.

Reference is now made to Figures 14 and 15 wherein fragmentary views of the reflector 36 are shown. Mounting holes 71 are located adjacent the ends of the reflector for use in attaching the reflector to the end members. The novel reflector of my invention includes, also, a wiring conduit, or raceway, 72 formed therewith. In the form of reflector shown in Figures 14 and 15, access to the raceway is had at both the ends thereof and longitudinally thereof on the concave surface of the reflector through an opening 73. Opposite edges of the opening 73 are provided with grooves, or channels 74 within which an elongated cover, or plate 75, shown in Figure 21, slidably engages to close the wiring conduit 72 off from the interior of the reflector.

As best seen in Figures 14 and 16, elongated channel portions 76 are formed at the longitudinal edges of the reflector and provide means for supporting the light transmitting member 37. A weather-proof sealing member 78 is positioned in the groove between the light transmitting member 37 and reflector.

Fragmentary assembled views, and a sectional view, of

the light fixture are shown in Figures 17, 18, 19 and 20. Referring first to Figures 17 and 18, the supporting arm 27 is shown attached to the collar 46 of the junction box 26. (As shown in Figure 1, and mentioned above, the other end of the supporting arm is suitably secured to the sign 25.) One flange member 47 on the housing 39 is shown projecting within the collar 51 formed on the end member 34. The reflector 36 is secured to the end member by threaded fastening devices 80. With the junction box 26 supported on the arm 27, it will be understood that the end member 34, with the attached reflector 36, is rotatable to any desired position. The set screws 53 are used to lock the end member to the flange 47 at the selected predetermined setting.

The lamp socket bracket 61, with the attached lamp socket 66, is supported on the end member 34 by the screws 69. The lamp socket, which is of any suitable design, supports a fluorescent lamp 81 of the elongated tubular type. As best seen in Figure 20, the lamp socket bracket 61 is provided with a protuberance 62' which extends into the opening 73 to the reflector raceway 72.

As seen in Figures 17 through 20, wires 82 for the fixtures are positioned in the raceway 72. Thus, it will be understood that certain of the lead wires 68 from the lamp sockets 66 may be connected to the wires 82 positioned in the raceway 72. The fixture may, therefore, be partially assembled, and wired, on the ground before installation on the sign. In practice, to install the light fixture of my invention, the outlet, or junction, boxes 26 are first attached to the supporting arms 27, and the arms 27 attached to the sign 25 by the flanged supporting members 28. On the ground, the connecting wires 82 are first positioned in the raceway 72 on the reflector, with the wires protruding from the ends thereof. The raceway cover 75 is then slid into position in the grooves 74 to cover the raceway. Next, the end members 34 are secured to the reflector 36 by the threaded fastening members 80, and the wires 82 are extended through the collar 51 on the end members. The lamp sockets 66 are attached to the lamp socket brackets 61 by the screws 67, and the assembled lamp socket and bracket secured to the end members 34, with the lamp socket lead wires 68 extended through the flange 51 in the end member, as seen in Figure 13. The protruding lamp socket wires 68, at one end of the fixture, are spliced to one end of the lead wires 82 which extend through the raceway. In this manner, circuit connections for all of the lamp sockets are brought to one end of the fixture. The lamp 81 and light transmitting cover 37 may then be installed. The partially assembled and wired fixture is then ready for final installation on the sign.

The collars 51 on the end members 34 are slid over the flange members 47 on the housing 39 of the junction boxes 26 after first passing the extending wires at one end of the fixture through the flanged opening, into the splicing cavity of the junction box 26. The reflector 36, with the attached end members are rotated to a desired position and secured to the flanges 47 by the set screws 53. With my fixture, any setting of the reflector 36 within a full 360 degree range is possible. From the junction box 26 at the end of one extension arm 27, wire is fed through the junction box 29 attached to the sign to the ballast 33 and, thence, to a suitable power supply (see Figure 1). These leads from the arm 27 into the junction box 26 are then spliced to the leads extending from the lamps and the installation is complete.

With my novel fixture, it will be apparent that conduit boxes are not required between the splice, or junction box 26 and the junction box 29 since the boxes are provided with their own removable covers for installation and servicing.

In addition to being simple to install, as described above, my novel light fixture is also easily serviced. For example, a defective lamp socket is easily replaced without dismantling the entire fixture. To replace a defec-

tive lamp socket, the light transmitting cover 37 is slid away from the end of the lamp containing the socket to be replaced, and the lamp socket bracket removed by removal of the screws 69. The lamp socket 66, is then easily accessible for removal from the lamp socket bracket. The lamp socket leads also are easily accessible through the access opening 41 in the box 26 once the cover 42 has been removed therefrom. Thus, such a repair can be easily accomplished by one man from a ladder in a matter of minutes. To change lamp sockets in prior art light fixtures of the type under consideration ordinarily requires the efforts of two men, since such fixtures must be substantially completely dismantled in order to remove the defective socket.

Reference is now made to Figures 21, 22 and 23 of the drawings wherein various forms of reflectors with raceways, or conduits, are shown. The reflector 36, with the integral raceway 72 of Figure 21, is of the type shown in Figure 14 and described above. In Figure 22, a raceway, or conduit 72' is shown bolted to the reflector, while in Figure 23, an integral, enclosed raceway 72'' is shown formed on the reflector. The modified forms of reflectors with raceways thereon shown in Figures 22 and 23, obviously, embody my invention.

Having now described my invention in detail, in accordance with the patent statutes, various other changes and modifications will suggest themselves to those skilled in this art. It is intended that such changes and modifications shall fall within the spirit and scope of the invention as recited in the following claims.

I claim:

1. A lighting fixture comprising an elongated reflector, a pair of end members each with an aperture therein secured to each end of the said reflector, a pair of junction boxes each formed with an aperture therein, means detachably securing the said junction boxes to the said end members with the apertures therein in register, a pair of lamp socket brackets, one engaging the inner surface of each of said end members, means detachably securing the lamp socket brackets to the said end members, the said lamp socket brackets being removable from the said end members when the reflector, end members, and junction boxes are secured together, a pair of lamp sockets, and means detachably securing the lamp sockets to the said lamp socket brackets.

2. A fluorescent lighting fixture comprising an elongated reflector having a generally longitudinally extending raceway thereon, a pair of end members with apertures therein and detachably secured to each end of the reflector with the said raceway in direct communication with the end members, a pair of junction boxes each formed with an aperture therein, means detachably securing the said junction boxes to the said end members with the apertures therein in register, a pair of lamp socket brackets detachably secured directly to the said end members, the said lamp socket brackets being removable from the said end members when the reflector, end members and junction boxes are secured together, and lamp sockets detachably secured to the said lamp socket brackets.

3. The invention as recited in claim 2 wherein the said raceway is integrally formed with the said reflector.

4. A lighting fixture comprising an elongated reflector having a generally longitudinally extending raceway mounted directly thereon as a continuation of said reflector, a pair of end members with apertures therein, each of said end members being provided with a chamber in direct communication with the raceway, means detachably securing one end member to each end of the said reflector, a pair of junction boxes each formed with an aperture therein, means detachably securing each of the said junction boxes to the associated end member with the apertures in each of said end members and in

each associated junction box in register, and a lamp socket mounted on each of said end members and extending into the associated chamber so that wiring through said raceway and extending into its associated chamber is adapted to be connected to its associated lamp socket.

5. The invention as recited in claim 4, wherein the said raceway is integrally formed with the said reflector.

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