

July 11, 1961

H. B. FLETCHER
ELECTRIC LIGHT FIXTURE

2,992,323

Filed May 5, 1959

4 Sheets-Sheet 1

FIG. 1

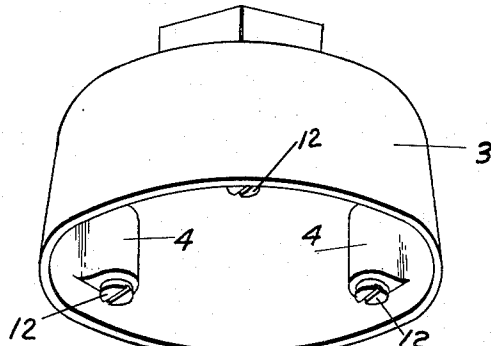


FIG. 2

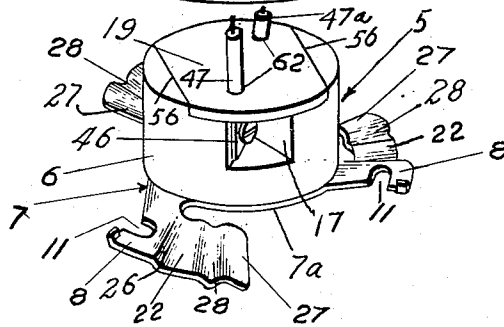


FIG. 3

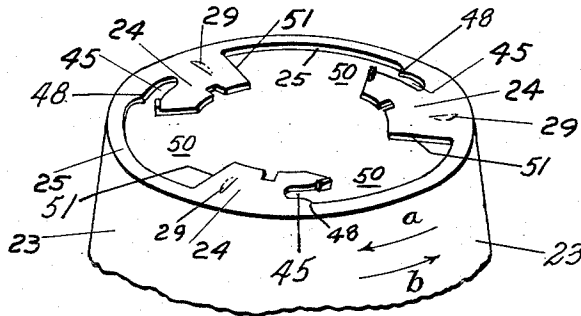
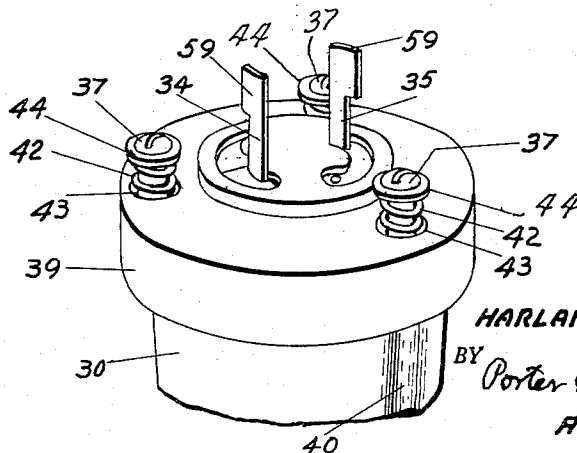


FIG. 4



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FIG. 5

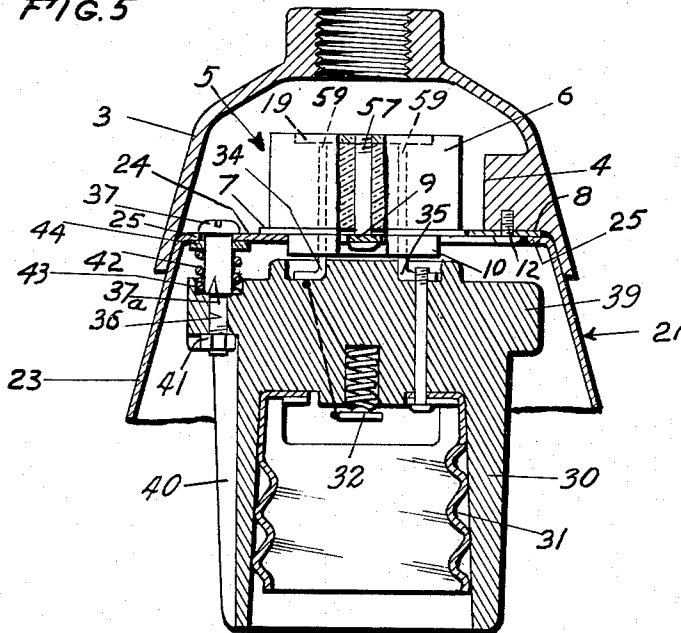
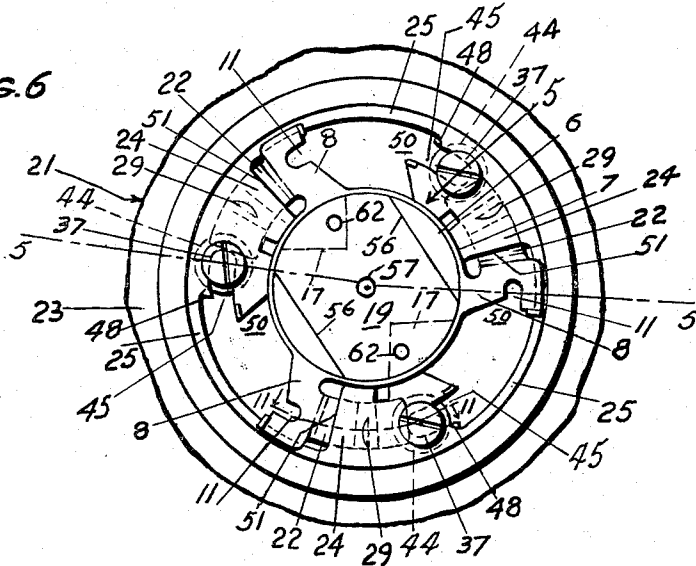


FIG. 6



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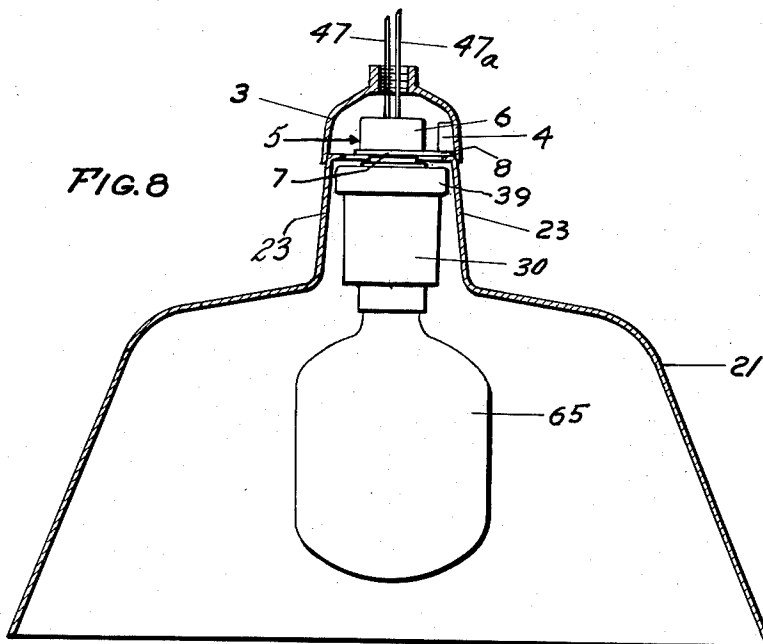
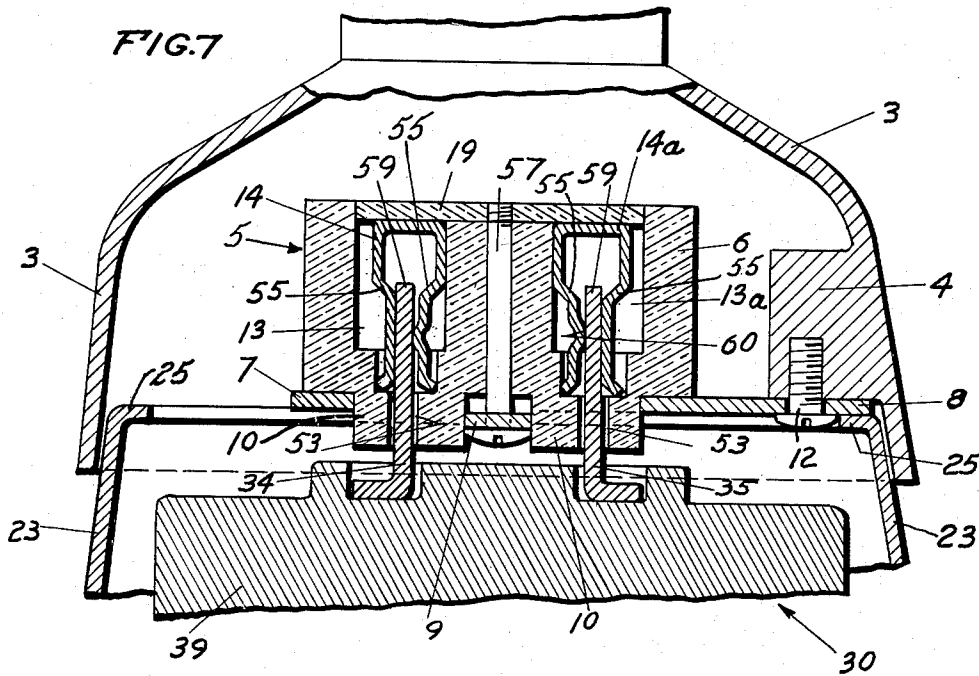
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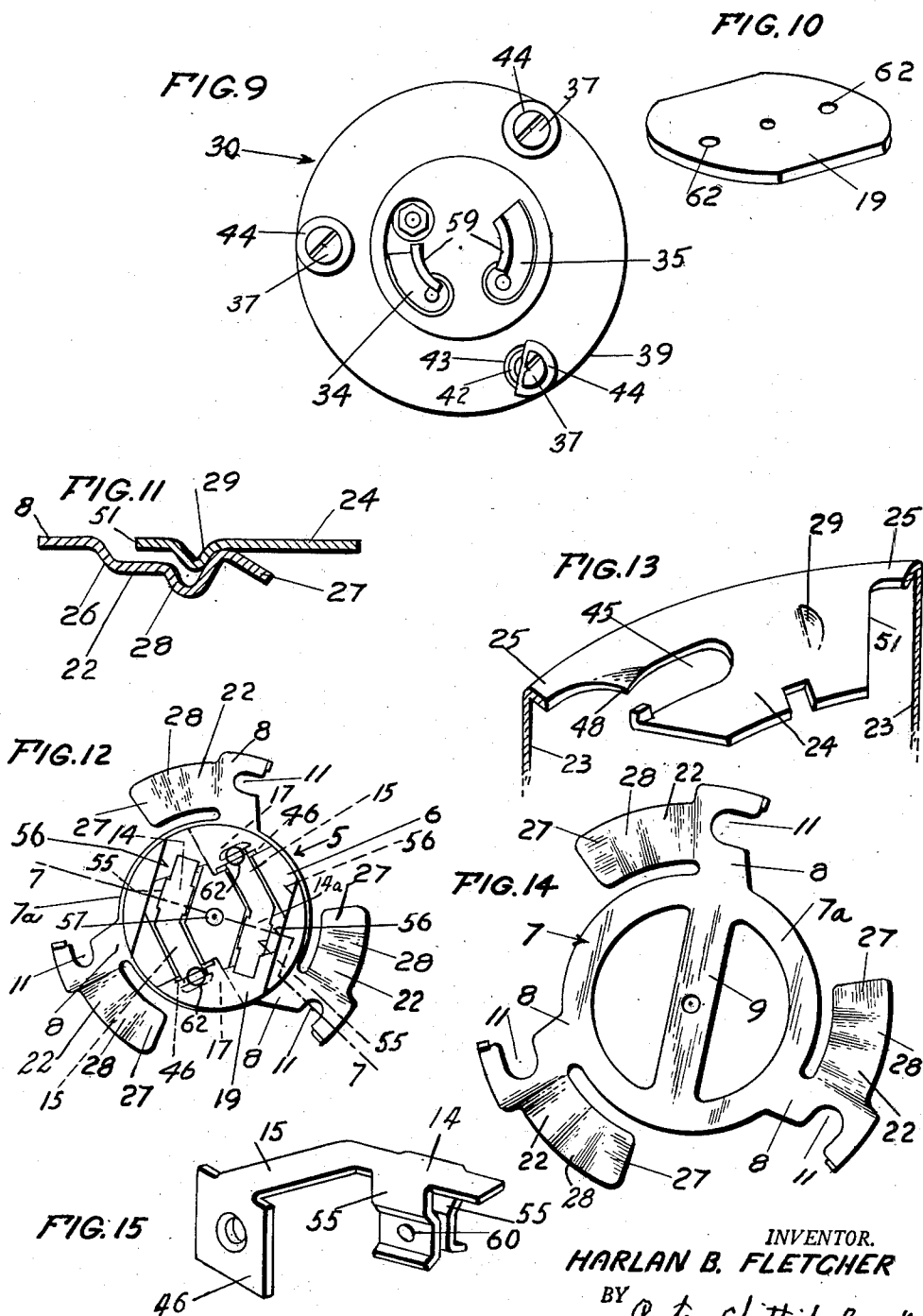
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ELECTRIC LIGHT FIXTURE

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Filed May 5, 1959, Ser. No. 811,100
6 Claims. (Cl. 240-85)

This invention relates to an electric light fixture of the type which includes a supporting canopy, a socket element carrying the light unit, and a reflector.

One object of the invention is to provide an electric light fixture of this type in which the socket element is made in two separate sections—i.e., a socket cap section which carries the wiring terminals and a socket body section which carries the light unit, and in which the socket cap section is secured to and supported by the canopy, while the socket body section is mounted on the reflector, and the reflector, with the socket body attached thereto, is detachably mounted on the socket cap section.

In the drawings wherein one embodiment of the invention is shown,

FIG. 1 shows an underside perspective view of the canopy element;

FIG. 2 is a perspective view of the socket cap section;

FIG. 3 is a perspective view of the top of the neck portion of the reflector;

FIG. 4 is a perspective view of the top portion of the socket body section;

FIG. 5 is a vertical sectional view through the light fixture with the socket cap section shown in elevation, said section being on the line 5-5 of FIG. 6;

FIG. 6 is a plan view of the assembled socket cap section, reflector neck, and socket body section;

FIG. 7 is a vertical section through the canopy, the socket section, and the upper portion of the socket body section, the section through the socket cap being on the line 7-7 of FIG. 12;

FIG. 8 illustrates the complete light fixture with the canopy and reflector shown in section;

FIG. 9 is a plan view of the socket body section;

FIG. 10 is a perspective of the top plate of the socket cap section;

FIG. 11 is an enlarged section on the line 11-11 of FIG. 6;

FIG. 12 is a plan view of the socket cap section;

FIG. 13 is a fragmentary perspective view of a portion of the neck of the reflector;

FIG. 14 is a plan view of the supporting member of the socket cap section; and

FIG. 15 is a perspective view of one of the combined wiring terminals and contacts of the socket cap section.

The canopy element of the fixture is indicated at 3 and it may have any usual construction except that it is provided on its interior with a plurality of vertical supporting ribs 4, three of such ribs being herein illustrated.

The socket cap section is indicated generally at 5, and it is secured to and supported by the ribs 4 of the canopy. It is formed with a body portion 6 which has secured to its lower end a supporting plate 7 that is provided with radially extending flat supporting arms 8. Each of the flat arms 8 is provided in one side edge thereof with an open slot 11 to receive an attaching screw 12 by which said arm is secured to the bottom of one of the ribs 4 of the canopy, each screw 12 being screw threaded into an opening in the bottom of the corresponding rib.

The supporting plate 7 has a central annular body 7a, and the body portion 6 of the socket cap is provided with an extension 10 of reduced diameter which extends through said annular body 7a. Said supporting plate is also provided with a diametrically extending portion 9

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which is received in a recess formed in the bottom of said extension 10 whereby the supporting plate and the socket cap are locked against any turning movement relative to each other. The supporting plate 7 is secured to the body portion 6 of the socket cap 5 by means of a screw 57 which extends through the diametrical portion 9 of said plate and the socket cap body 6 and into a plate 19 on the top of said body.

The socket cap 5 is provided with wiring terminals 46 to which the line wires 47 and 47a are connected and which will be hereinafter referred to.

The socket body section is shown at 30, and it carries the light unit 65. It is mounted on and supported by the neck 23 of the reflector 21 as will be presently described, and the reflector with the socket body attached thereto is mounted on and supported by the socket cap. For this purpose, each flat arm 8 of the supporting member 7 is provided with a laterally extending wing 22 which is offset downwardly from the arm, as shown at 26, and the top of the neck section 23 is provided with an inturned edge portion 25 and also with three inwardly extending supporting portions 24 which are spaced from each other and each of which is provided with an open ended slot 45 to receive a screw 37 that is carried by the head 39 of the socket body 30. As shown in FIG. 5, the screw 39 is a shouldered screw having a lower portion of smaller diameter than the upper body portion. The smaller end of said screw extends through an opening 36 on the edge of the enlarged head 39 and the end of the screw is screw threaded to receive a clamping nut 41 by which the screw is anchored in place with the shoulder 37 of the screw engaging the top portion of the head 39. This screw extends above the socket body 30 and has a washer 44 on its upper end and beneath the head of the screw. Beneath the washer is a spring 42 which encircles the screw, the lower end of the spring being received in recess 43 with which the socket body portion is provided.

When the socket body portion 30 and the neck 23 of the reflector are assembled, the upper portion of each screw occupies a slot 45 formed on one side edge of an inwardly directed supporting portion 24, the edges of the slot being clamped between the head of the screw 37 and the washer 44 as seen in FIG. 5. By this means the socket body portion 30 is flexibly connected to the inwardly supporting portions 24 of the reflector neck, and said body portion can be detached from the reflector by turning said socket body portion in a direction to withdraw the screws 37 from the slots 45.

When the socket cap section and the reflector neck with the socket body 30 attached thereto are assembled, the ends of the arms 8 rest on the inturned edge 25 of the reflector neck 23 and each offset wing 22 underlies one of the inwardly directed supporting portions 24 of the reflector neck.

The reflector 21 with the socket body 30 attached thereto can be assembled with the socket cap 5 by placing the neck 23 of the reflector in a position with the spaces 50 between the inwardly directed supporting portions 24 thereof in vertical registering relation with the wings 22 and then moving the reflector upwardly to bring said inwardly directed edge portions 24 against the underside ends of the arms 8 and the free end 27 of each offset wing 22 in a plane just below that of the edge 51 of the adjacent inwardly directed supporting portion 24. With the socket cap 5 and the neck 23 of the reflector in this relative position, a turning movement of the reflector relative to the socket cap in the direction of the arrow a in FIG. 3 will cause the edge portion 51 of each inwardly directed supporting portion 24 to move over the adjacent offset wing 22 to bring the parts into the relative positions shown in FIG. 6, in which position the neck 23 of

the reflector and the arms 8 of the socket cap 5 are interlocked by the supporting portions 24 of the neck resting on the offset wings 22 of the socket cap, and the ends of the arms 8 of the socket cap resting on the inturned edge 25 of the reflector neck 23.

The end 27 of each offset wing 22 is bent downwardly slightly so that it can easily be moved into position beneath the corresponding inwardly directed supporting portion 24 of the reflector neck. Each of the wings 22 is formed with a depression 28 and each of the inturned portions 24 of the reflector neck is provided on its underside with a downwardly extending protuberance 29. When the reflector is properly mounted on the socket cap, the protuberance 29 on the underside of each of the inwardly extending supporting portions 24 of the reflector neck occupies the depression 28 in the corresponding wing 22 and thus the reflector is yieldingly locked in its operative position, it being understood that the wings 22 are slightly resilient to permit them to yield sufficiently to allow the protuberance 29 to move over the wings 22 and into the depressions 28 during the assembling operation.

The socket body section 30 is secured to and supported by the supporting portions 24 of the reflector neck 23. Said socket body 30 is provided in its lower end with the usual socket having a screw-threaded contact sleeve 31 to fit the screw-threaded base of an incandescent light unit 65 and also having the end terminal 32 to engage the end terminal on said light unit.

The socket body section 30 is also provided on its top end with two plug-like contacts 34, 35, one of which is electrically connected to the contact sleeve 31 and the other of which is electrically connected to the end terminal 32 by electrical connections such as are usually used in lamp sockets of this type. These contacts 34, 35 cooperate with socket contacts carried by the socket cap 5 to establish circuit connections between the wiring terminals 46 of the socket cap and the sleeve terminal 31 and end terminal 32 of the socket body 30 when the latter and the reflector are properly assembled with the socket cap 5, as will hereinafter be described.

The electrical connection between the wiring terminals 46 carried by the socket cap 5 and plug contacts 34, 35 of the socket body 30 will now be described.

The body 6 of the socket cap is provided with two contact-receiving recesses 13 and 13a which are open at the bottom of said body as shown at 53 to receive said plug contacts 34, 35. Enclosed in each recess is a socket contact element constructed to cooperate with one of the plug contacts 34, 35. The socket contact elements are indicated at 14 and 14a, and each has two vertical wings 55 which provide a space between them to receive the broad flat top portion 59 of one of the plug contacts 34 or 35 of the socket body.

One of the wings 55 of each socket contact is shown as having a protruding portion 60 which by its engagement with the contact portion 59 of the corresponding plug contact ensures a proper electrical contact. Each socket contact 14 and 14a has an extended stem portion 15 which terminates in a head 46 that is exposed on the outside of the socket cap and constitutes one of the wiring terminals above referred to. As shown, the socket cap body is cut away on its side to present two recesses 17 to receive the two wiring terminals (see FIG. 2). The body 6 of the socket cap is formed on its top with a recess 56 which is open to the contact-receiving recesses 13, 13a. A removable plate 19 of insulating material fills the recess 56 and is flush with the top surface of said socket cap body. This plate is held in place by a screw 57 which extends through a diametrical portion 9 of the supporting plate 7 and also through the body 6 of the socket cap and is screwed into the plate 19. Said plate is provided with two openings 62 through which the line wires 47 and 47a extend.

It will be remembered that the socket body 30 and the reflector 21 are assembled as a unit with the socket cap

5 and that this operation involves a turning movement of the connected socket body and reflector to bring the wings 22 of the arms 8 of the socket cap into their operative relationship to the supporting portions 24 of the reflector neck.

The socket contacts 14 and 14a are so constructed that after the broad contact ends 59 of the plug contacts 34 and 35 have been entered into the spaces between the wings 55 of said socket contacts, said ends 59 are free to move horizontally relative to the socket contacts, thereby permitting the turning movement of the reflector which is necessary to interlock the wings 22 with the supporting portions 24 of the reflector neck. With this construction, the reflector 21 together with the socket body 30, which is attached thereto, can easily be assembled with the socket cap 5 by entering the plug contacts 34, 35 of the socket body into the socket contacts 14, 14a of the socket cap 5 through the openings 53 and then turning the reflector with the ends of the arms 8 resting on the inturned edge 25 of the reflector neck to bring the wings 22 in the socket cap into their operative position beneath the supporting portions 24 of the reflector neck.

Said connected reflector and socket body may be disconnected from the socket cap by turning the reflector and the socket body 30 in the direction of the arrow *b* in FIG. 3, thereby to withdraw the inwardly directed supporting portions 24 of the reflector neck 23 from their engagement with the wings 22 of the arms 8 of the socket cap. This turning movement brings the openings or spaces 50 between the adjacent supporting portions 24 of the reflector neck into register with the wings 22 and the ends 59 of the plug contacts into alignment with the openings 53 in the bottom of the socket cap 5, so that the reflector 21 with the socket body attached thereto can be separated from said socket cap by a downward movement thereof.

I claim:

1. An electric light fixture comprising a canopy, a socket cap within said canopy, means securing said socket cap to said canopy, said socket cap having a pair of contacts and a wiring terminal electrically connected to each contact, a reflector having a neck section provided with a plurality of spaced-apart inwardly directed supporting portions, said socket cap having outwardly extending supporting portions which cooperate with the inwardly directed supporting portions of said neck section to support the reflector, a socket body provided with a socket to receive a light unit and also having a pair of plug contacts in engagement with the contacts of the socket cap, and means for securing the socket body to the inwardly directed supporting portions of the neck section of the reflector.

2. An electric light fixture comprising a canopy element, a socket cap having a body of insulating material, a pair of socket contacts within said body and a supporting member presenting a central body portion and a plurality of outwardly extending portions, means securing each of said outwardly extending portions to the canopy, a reflector having a neck section provided at its top with a plurality of inwardly directed supporting portions which cooperate with the central body portion and the outwardly extending portions of said socket cap to support detachably the reflector, a socket body of insulating material within said neck section of the reflector and having a socket to receive a light unit, and means securing said socket body to the inwardly directed supporting portions of the neck section of the reflector, said socket body having projecting plug-like contacts engaging the contacts of the socket cap.

3. An electric light fixture comprising a canopy member, a socket cap of insulating material located within the canopy member, a pair of contacts carried by said socket cap, a reflector-supporting member secured to said socket cap and which presents a plurality of outwardly extending substantially flat arms, means securing each of

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said outwardly extending arms to the canopy, a reflector having a neck section provided at its top with a plurality of inwardly directed spaced-apart flat supporting portions which cooperate with the substantially flat outwardly extending arms of said supporting member to support said reflector, a socket body of insulating material within the neck section of the reflector, means securing said socket body to the inwardly directed flat supporting portions of the neck section of the reflector, and plug-like contacts projecting from the top of the socket body and detachably engaging the contacts of the socket cap.

4. An electric light fixture comprising a canopy member, a socket cap within the canopy member and having a pair of socketed contacts, each contact having a portion exposed on the exterior of said socket cap to provide a wiring terminal, said socket cap also having a reflector-supporting member which presents a plurality of radially extending supporting arms spaced from each other, each arm having a wing element extending laterally therefrom, means securing each of said arms to the canopy, a reflector element having a tubular neck section which is provided at its top with a plurality of inwardly directed flat supporting portions spaced from each other, said arms of the reflector-supporting member being of a length to rest on the top edge of said neck section and the wing element of each arm being offset downwardly from its arm and engaging the underside of one of the inwardly directed supporting portions of the reflector whereby the reflector is detachably supported by said socket cap, a socket body within said neck section and provided with a socket to receive a light unit, means to attach the socket body to the inwardly directed supporting portions at the top of said neck section, and plug-like contacts projecting from the top of the socket body and engaging the contacts of the socket cap.

5. An electric light fixture comprising a canopy member, a socket cap within the canopy and having a pair of socketed contacts, each contact having a portion exposed

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on the exterior of said socket cap to provide a wire terminal, said socket cap also having a reflector supporting member which provides a central body portion and a plurality of radially extending supporting arms spaced from each other, each arm having a wing element extending laterally therefrom, means securing each of said arms to the canopy, a reflector element having a tubular neck section which is provided at its top with a plurality of inwardly directed flat supporting portions spaced from each other, said arms of the reflector supporting member being of a length to rest on the top edge of said neck section and said central body portion being of a size to rest on the inner edge of said inwardly directed flat supporting portions of the reflector neck, and the wing element of each arm being offset downwardly from its arm and engaging the underside of one of the inwardly directed supporting portions of the reflector whereby the reflector is detachably supported by said socket cap, a socket body within said neck section and provided with a socket to receive a light unit, means to attach the socket body to the inwardly directed supporting portions at the top of said neck section, and plug-like contacts projecting from the top of the socket body and engaging the contacts of the socket cap.

6. An electric light fixture as defined in claim 4 in which each inwardly directed flat supporting portion of the neck section of the reflector has a protuberance on its underside and each wing element has a recess in its upper side to receive the protuberance on the corresponding inwardly directed supporting portion of the neck section.

References Cited in the file of this patent

UNITED STATES PATENTS

1,750,006	Henry	Mar. 11, 1930
2,127,124	Litner	Aug. 16, 1938