June 10, 1941. C. NEWMAN 2,245,357

ELECTRIC LIGHT SOCKET

Filed April 8, 1940

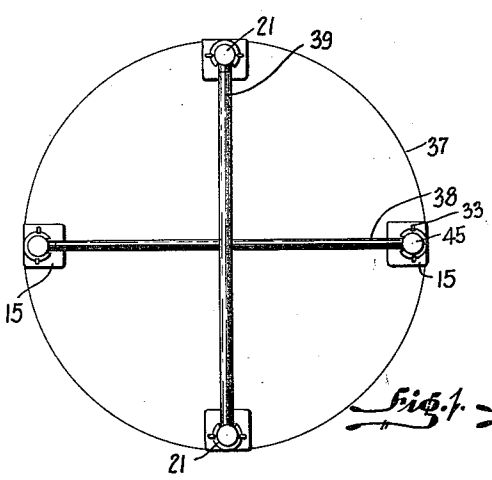


Fig. 1.

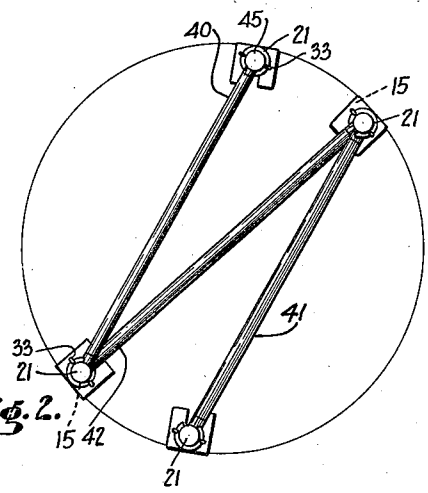


Fig. 2.

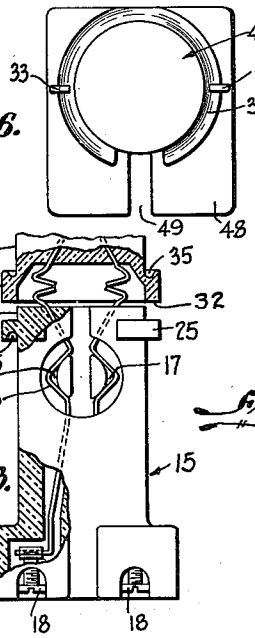


Fig. 6.

Fig. 3.

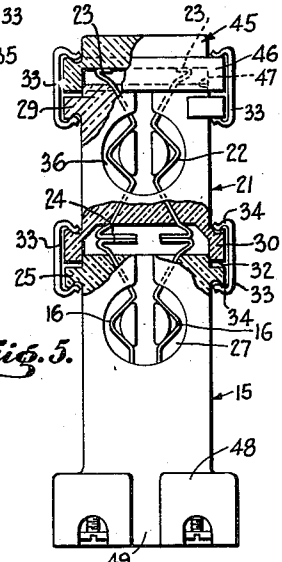


Fig. 5.

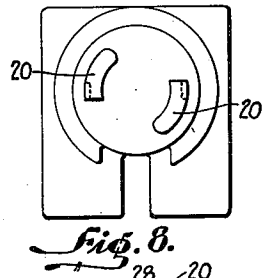


Fig. 8.

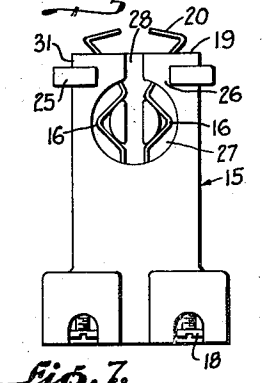


Fig. 7.

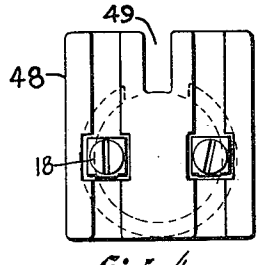


Fig. 4.

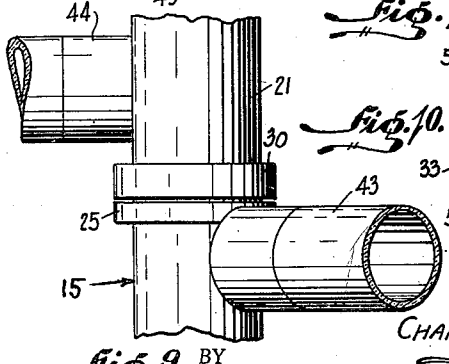


Fig. 9.

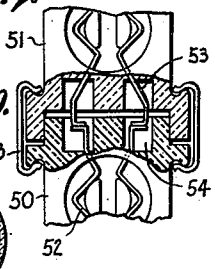


Fig. 10.

INVENTOR.
CHARLES NEWMAN.
BY
ATTORNEY.

Patented June 10, 1941

2,245,357

UNITED STATES PATENT OFFICE

2,245,357

ELECTRIC LIGHT SOCKET

Charles Newman, Bronx, N. Y.

Application April 8, 1940, Serial No. 328,408

9 Claims. (Cl. 173—328)

This invention relates to electric light sockets, and particularly to devices of this category adapted to accommodate tubular lighting elements.

It is primarily within the contemplation of my invention to enable a fixture for fluorescent or other tubular elements to conveniently accommodate such elements at different levels. And in this aspect of my invention, it is an object to enable such a positioning to be effectuated without any structural changes in the socket-supporting fixture.

It is a further object of my invention to provide convenient means for accommodating tubular lighting elements in predetermined angular relation with respect to each other without the necessity of making any structural changes in the socket-supporting fixture.

Another object of my invention is to provide adjustably movable sockets at different levels for enabling tubular lighting elements to be adjustably rotated, whereby lighting arrangements of different designs and intensities may be obtained.

It is within the further contemplation of this invention to provide a socket of the above category whereby a number of such identical sockets may be assembled to provide outlets at a plurality of levels.

And it is still another object of this invention to provide a device of simple and readily fabricated structure adapted to effectively attain the objectives above enumerated.

Other objects, features and advantages will appear from the drawing and the description hereinafter given.

Referring to the drawing—

Figure 1 represents a semi-diagrammatic plan view of a lighting fixture comprising two tubular lighting elements in crossing relation, operatively supported by the sockets of my invention.

Figure 2 is a semi-diagrammatic plan view of another arrangement of tubular lighting elements employing my invention.

Figure 3 is a side fragmentary elevation, partly in section, of two cooperative sockets of my invention shown in detached positions.

Figure 4 is a bottom view of Figure 3.

Figure 5 is a side elevation, partly in section, of two units substantially like those of Figure 3 in assembled relation, the upper unit being provided with a cap.

Figure 6 is a plan view of Figure 5.

Figure 7 is an elevation of the base member comprising a portion of my invention.

Figure 8 is a plan view of Figure 7.

Figure 9 is a semi-diagrammatic fragmentary side view of two assembled sockets of my invention with tubular lighting elements in angular disposition, and

Figure 10 is a fragmentary sectional elevation of a modified form of my invention.

The particular embodiment of my invention illustrated in the drawing contains the base socket 15 made of any suitable insulating material, and having therein the prong elements 16 operatively formed to engage the two contact pins on a conventional tubular lighting element intended to be supported by this device. In the specific design shown, the said contact pins are adapted to be inserted within the spaces 17 and yieldably retained therein due to the spring action of the prongs 16. Said prongs are connected to the terminals 18 to which electrical conductors can be attached in conventional manner. The upper portions of the prongs 16 extend beyond the upper surface 19 of the socket 15, and in my preferred arrangement contain the substantially arcuate contact portions 20. These contact portions are diametrically opposite each other, as clearly shown in Figure 8, and are slightly inclined upwardly as illustrated in Figure 7.

My invention further contains the extension socket 21 containing therein prong elements 22 substantially similar to elements 16 hereinabove described, except that said elements 22 each contain upper and lower contact portions 23 and 24 respectively. The said latter contact portions are shaped and disposed similar to the aforesaid contact portions 20, and are adapted to coact therewith in a manner to be hereinafter set forth.

It will be observed that the base socket 15 contains an annular ridge 25 preferably somewhat below the upper surface thereof. This ridge is split at region 26 directly above the aperture 27 which exposes the contacting portions of prongs 16—the arrangement being such that the slot 28, through which the contact pins on the tubular element are slipped, will not be obstructed. A similar ridge 29 is provided on the extension unit 21. The lower portion of said extension unit 21 contains an annular flange 30 the wall of which is adapted to encircle the lateral wall 31 above the ridge 25 of the lower socket. In the preferred arrangement, said flange is adapted for slidable and rotatable engagement with said wall 31, the lower edge 32

of the flange being adapted for abutting engagement with the upper edge of ridge 25.

In order to operatively connect the base unit 15 with the extension unit 21, the two are placed substantially in the positions indicated in Figure 3. Thereafter the extension unit 21 is pressed downwardly to the position indicated in Figure 5. At this point it will be noted that the two arcuate contact portions 20 and 24 are in abutment, and the flange 30 is disposed about surface 31 of the base socket 15. To hold the two units in assembled position, the spring clips 33 are snapped over the abutting flange 30 and ridge 25, against the yieldable spring action of the contact portions 20 and 24. In the preferred arrangement, said clips are of spring material, and contain terminal portions 34 adapted to enter the depressions 35 in the said flange 30 and ridge 25. It is apparent that the arrangement is such that the contact portions 20 and 24 are completely enclosed by the annular wall 30, thereby providing a safe construction.

In the position shown in Figure 5, it is to be noted that the outlet apertures 27 on the base unit and 36 on the extension unit are substantially in parallel positions, so that they can operatively support tubular lighting elements in parallel arrangement. However, by employing only the base element 15 at diametrically opposite portions of the fixture diagrammatically represented by the circle 37 in Figure 1, a tube 38 can be operatively supported thereby; and by employing a combination of base unit 15 and extension unit 21 at intermediate and diametrically opposite portions of the fixture, and supporting the tube 39 by the extension unit, a cross arrangement with tubular lighting elements at two different levels can be obtained, as illustrated.

Should it be desired to obtain an arrangement where two tubes at different levels are angularly disposed with respect to each other, as shown in Figure 2, the extension member 21 can be rotated with respect to base unit 15 a predetermined amount, so as to maintain contact portions 20 and 24 in operative engagement. By such a manipulation, the outlet aperture 36 of the extension unit can be moved out of the plane of aperture 27 of the base unit, so that the two units can operatively support tubes at different angles with respect to each other. Thus, the tubes 40 and 41 of Figure 2 are supported by the extension units 21, whereas the tube 42 is supported by the base units 15. Figure 9 diagrammatically illustrates the angular position of two tubes 43 and 44, the former being supported by the extension unit 21 and the lower by the base unit 15. By varying the number and arrangement of tubes supported by sockets of this invention, lighting effects of different intensities and designs can be obtained.

In order to conceal the upper contact portions 23 of the extension unit 21, a cap 45 is employed. This contains an annular flange 46 similar to flange 30, adapted to encircle the wall 47 above ridge 29, so as to completely enclose the said contact elements 23. The cap is held secured in assembled position by the clips 33 in the manner aforesaid. It is of course obvious that the said cap 45 can be secured to the upper portion of base socket 15, in the event an extension unit is not employed.

It is apparent that if it is desired to employ more than two levels of lighting tubes, the device can be built up by connecting together any desired number of extension units 21, inasmuch as such units are adapted to interlock with each other, as well as with the base unit 15 and cap 45.

In the modification shown in Figure 10, the base unit 50 and the extension unit 51 contain the coacting prongs 52 and 53, respectively. The upper portions of prongs 52, however, are disposed within recesses 54 into which the prongs 53 extend. In this manner the prongs in the base unit are entirely concealed, eliminating any danger should the base unit be connected to a live outlet.

Although my invention has been shown as applied to a socket having a particular form of prong elements, it is of course understood that other forms of prong elements may be employed within the scope of this invention. The base unit can be attached in conventional manner to any fixture adapted for the purpose, such as by applying suitable fastening means to the base 48 through the slot 49.

It is of course understood that the various embodiments above-described and shown in the drawing are illustrative of my invention and not employed by way of limitation, inasmuch as numerous changes and modifications may be made within the scope of the appended claims without departing from the spirit of this invention.

What I claim is:

1. In an electric light socket of the class described, two socket units each for operative connection with a suitable lighting element provided with contact pins, one of said units being rotatably associated with the other, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, the prong elements of each unit terminating at least at adjacent ends of the units in contact portions of extended areas, the contact portions of one unit being in engagement with the corresponding contact portions of the other unit, yieldable means for holding said contact portions in pressing engagement with each other, and holding means for maintaining said contact portions in pressing engagement against the action of said yieldable means.

2. In an electric light socket of the class described, two socket units each for operative connection with a suitable lighting element provided with contact pins, one of said units being rotatably associated wtih the other, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, the prong elements of each unit terminating at least at adjacent ends of the units in resilient contact portions of extended areas, the contact portions of one unit normally sloping towards and being engageable with the corresponding contact portions of the other unit, and means to hold the two sets of contacts in pressing engagement with each other.

3. In an electric light socket of the class described, two socket units each for operative connection with a suitable lighting element provided with contact pins, one of said units being rotatably mounted upon the other, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, the prong elements of one of the units being engageable with the corre-

sponding prong elements of the other unit, and holding means engageable with the walls of said units for releasably locking them together, whereby the two sets of prong elements are held in engagement with each other.

4. In an electric light socket of the class described, two socket units each for operative connection with a tubular lighting element provided with contact pins, one of said units being rotatably associated with the other, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, the prong elements of each unit terminating at least at adjacent ends of the units in contact portions of extended areas, the contact portions of one unit being in engagement with the corresponding contact portions of the other unit, an overhanging flange at an end of one of said units encircling the adjacent end portion of the other unit, a ridge on said latter unit, and holding means associated with said flange and ridge for holding them in adjacent relation, whereby the two sets of prong elements will be maintained in pressing engagement with each other.

5. In an electric light socket of the class described, a rotatable extension unit for operative connection to a suitable lighting element provided with contact pins, comprising a body portion, and a set of longitudinally extending prong elements, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting element, the opposite ends of each prong element terminating in contact portions of extended areas, each diametrically opposite those of the other prong element.

6. In an electric light socket of the class described, a rotatable extension unit for operative connection to a suitable lighting element provided with contact pins, comprising a body portion, a set of longitudinally extending prong elements, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting element, the opposite ends of each prong element terminating in contact portions of extended areas, each diametrically opposite those of the other prong element, and holding means associated with the wall of said unit at opposite ends thereof for connection to other suitable units.

7. In an electric light socket of the class described, a base unit and an extension unit rotatably mounted upon the base unit, said units being each adapted for operative connection with a suitable lighting element provided with contact pins, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, wiring terminals on the base unit electrically connected to the lower portions of the prong elements therein, the upper ends of the prong elements in the base unit terminating in contact portions of extended areas, the prong elements in the extension unit terminating at opposite ends thereof in contact portions corresponding in position to those of the base unit, the adjacent contact portions of the prong elements of the base and extension units being in engagement with each other, yieldable means for holding said contact portions in pressing engagement with each other, and holding means for maintaining said contact portions in pressing engagement against the action of said yieldable means.

8. In an electric light socket of the class described, a rotatable extension unit for operative connection with a suitable lighting element provided with contact pins, comprising a body portion, a set of longitudinally extending prong elements, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting element, the opposite ends of each prong element terminating in contact portions of extended areas, each diametrically opposite those of the other prong element, and a cap member detachably secured to said extension unit over one end thereof, said cap member containing an overhanging flange encircling the adjacent end portion of the extension unit to conceal the contact portions thereof.

9. In an electric light socket of the class described, a base unit and an extension unit rotatably mounted upon the base unit, said units being each adapted for operative connection with a suitable lighting element provided with contact pins, a set of prong elements in each of said units, means coacting with said prong elements for holding in pressing engagement therewith the contact pins of said lighting elements, wiring terminals on the base unit electrically connected to the lower portions of the prong elements therein, the base unit containing recessed portions at the upper portion thereof into which the upper ends of the prong elements extend, the prong elements in the extension unit terminating at opposite ends thereof in contact portions corresponding in position to those of the base unit, the lower contact portions of the extension unit extending into the said recesses of the base unit and being in engagement with the contact portions therein, yieldable means for holding said contact portions within the recesses in engagement with each other, and holding means for maintaining said contacts in engagement against the action of said yieldable means.

CHARLES NEWMAN.