July 4, 1950 S. M. WEISBERG 2,513,832

FLUORESCENT LAMP FIXTURE

Filed Oct. 4, 1945

Fig. 1.

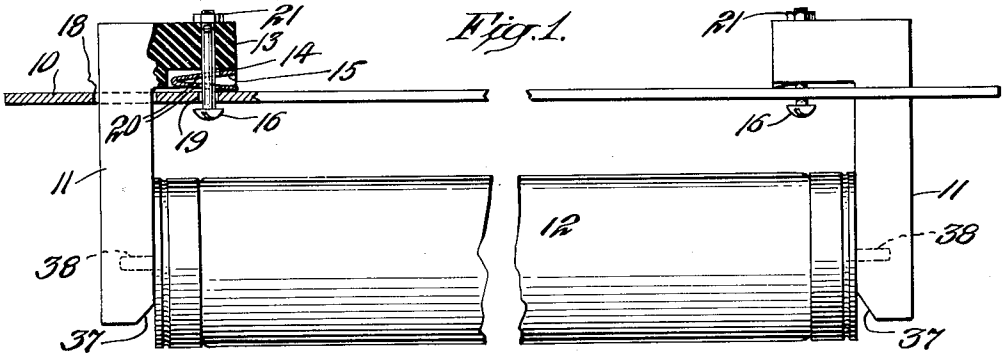


Fig. 2.

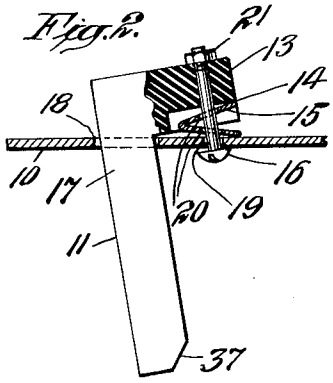


Fig. 3.

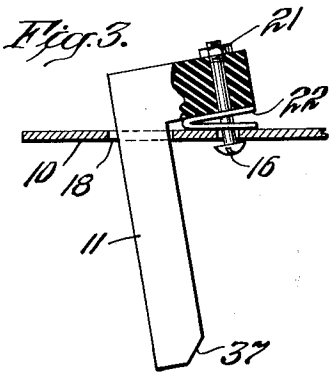


Fig. 4.

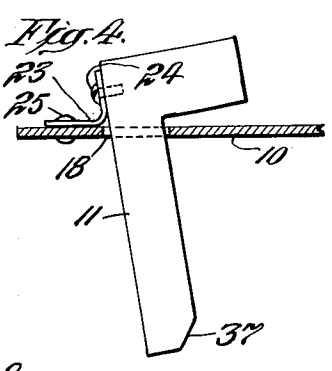


Fig. 5.

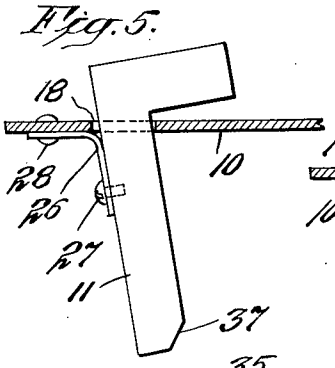


Fig. 6.

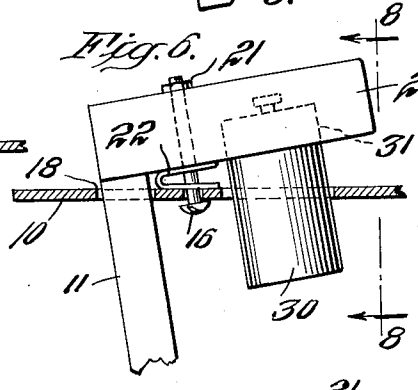


Fig. 8.

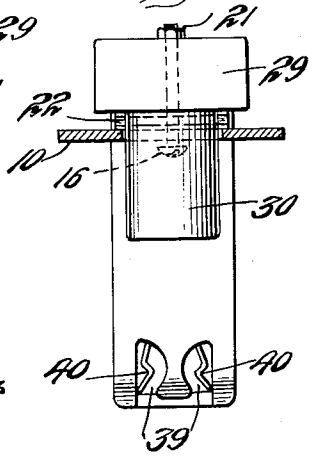
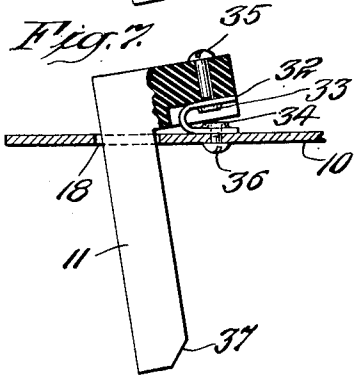


Fig. 7.



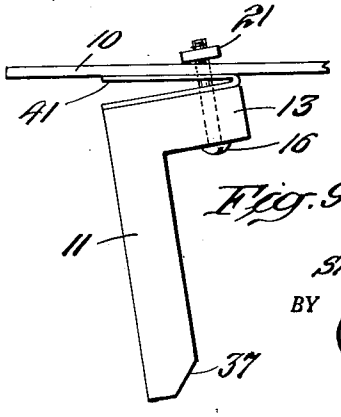


Fig. 9.

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FLUORESCENT LAMP FIXTURE

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2 Claims. (Cl. 173—328)

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The invention here disclosed relates to fluorescent lamp fixtures.

To facilitate the engagement of the lamps in the fixtures, these fixtures have usually been made up with the sockets spaced a distance somewhat greater than the length of a lamp. The contact pins on the ends of the lamps are relatively short so that with the additional spacing thus allowed the sockets, these pins may reach only partly into the sockets, thus accomplishing less than a full mechanical engagement in the sockets and in many instances making only partial electrical contact or actually no electrical connection at all. Consequently with present fixture constructions the lamps many times are only lightly or partly held and thus on the verge of dropping out, and under such conditions the lamps may not even be connected in circuit. Many times the lamps are forced into place between the sockets without proper regard to entering the contact pins into engagement with the socket contacts, imposing a spreading tendency on the sockets and resulting in the poor mechanical support and poor conductivity or lack of conductivity mentioned.

Objects of the present invention are to avoid the objections noted and to provide a construction in which the lamps will be firmly held in place with the contact pins fully and firmly engaged in the sockets.

Other objects of the invention are to provide a construction of the type indicated which will be simple and inexpensive and be readily applicable to existing types of sockets and lamp fixtures.

Other desirable objects and the novel features by which all purposes of the invention are attained are set forth or will appear in the course of the following specification.

The drawing accompanying and forming part of the specification illustrates certain present embodiments of the invention but it will be appreciated that the structure may be further modified, all within the true intent and scope of the invention as hereinafter defined and claimed.

Fig. 1 in the drawing is a broken part sectional view illustrating the main portions of one of the fixtures, showing a lamp engaged in the sockets;

Fig. 2 is a broken part sectional and side view of one of the sockets in the position assumed by it in the absence of a lamp;

Figs. 3, 4, 5, 6 and 7 are similar views illustrating other embodiments of the invention;

Fig. 8 is a cross sectional view of the embodiment shown in Fig. 6, such view being taken on substantially the plane of line 8—8 of Fig. 6.

Fig. 9 is a broken sectional view of another form of the invention.

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In the drawing the base portion of the lamp fixture is indicated at 10, carrying companion opposed lamp sockets 11 for supporting and carrying current to the fluorescent lamp 12.

The lamp sockets 11, instead of being rigidly secured in outstanding, substantially parallel relation are, one or both of them, yieldingly mounted in relatively convergent relation, spaced with their outer ends closer together than the actual length of the lamp and so that to enter the lamp the yieldingly related sockets will have to be forced apart and will then thereafter act to yieldingly grip and hold the lamp in place.

In the first illustrated embodiment appearing in Figs. 1 and 2, the base portion 13 of the socket is formed with a cavity 14 in the face toward the back of the base plate 10 and a small V-shaped or U-shaped bent spring 15 is located in this cavity, acting to rock the base of the socket away from the plate 10 to the extent permitted by a through screw 16.

In the particular arrangement shown, the projecting post portion 17 of the socket extends freely through an opening 18 in the base plate so that it may rock from the inwardly inclined relation shown in Fig 2 to the generally perpendicular position shown in Fig. 1, under the confining influence of the screw 16. The latter is shown as extending freely through an opening 19 in the plate 10 and through clearance holes 20 in the bent spring, said screw projecting through the base 13 of the socket and having a nut 21 applied to the projecting end.

In this form of construction the threaded end of the screw is shouldered or the screw threading terminated at a predetermined fixed point so that with the parts finally secured the screw will allow necessary freedom of movement for the socket to swing inwardly from the Fig. 1 to the Fig. 2 position under pressure of the spring.

While it may be generally desirable to seat the spring completely or partly in the base of the socket, in some instances it may be practical or more desirable to simply interpose the bent spring between the face of the socket base and the back of the mounting plate, as indicated at 22 in Fig. 3. In such a case the spring 22 may be the full width of the socket base instead of being limited to an extent less than the full width, as in the first form described.

Figs. 4 and 5 illustrate angle bent types of springs, that indicated at 23 in Fig. 4 being bent at a slightly acute angle and secured at 24 to the end of the base and at 25 to the back of the mounting plate, and the spring shown at 26, Fig. 5, being bent at an obtuse angle and secured at

27 to the post portion of the socket and at 28 to the front of the mounting plate.

In both instances the springs, one acutely angled and located at the back and the other obtusely angled and located at the front, apply yielding force to hold the socket inclined at an inwardly convergent angle in respect to the companion socket.

Figs. 6 and 8 illustrate a spring of the type shown in Fig. 3 applied to the mounting of a socket of the type having an extended base 29 carrying the lamp starter switch 30. In this case the mounting screw 16, in addition to limiting the inwardly angling spring action of the socket, serves to take the thrust necessarily applied when inserting the starter switch 30 into its socket 31 in the base portion 29.

Fig. 7 illustrates a modified construction in which the U-bent spring 32 is formed with screw seats 33 and 34 in its opposite legs to take the end of a screw 35 securing it to the base of the socket and the end of a screw 36 securing it on the back of the base plate 10. In place of either or both screws in this or in the other embodiments of the invention, rivets or like fastenings may be employed.

In the Figs. 1, 3 and 6 forms of the invention, the bent spring may be simply loosely held in place between the base portion of the socket and the back of the mounting plate, whereas in the Figs. 4, 5 and 7 forms of the invention the springs may be screwed, riveted or otherwise secured to and thus be carried by and made a part of the lamp socket. Both types have their special advantages.

For ease of manipulation the inner corner edges of the lamp sockets may be beveled or chamfered as indicated at 37 to facilitate entry of the lamps in the sockets and to provide inclines engageable by the ends of the lamp tube to wedge the yieldingly related sockets apart into the final, substantially parallel relation.

The inwardly inclined, relatively convergent relation of the lamp sockets, whether one or both be yieldingly supported, causes the ends of the lamp tube to wedge the ends of the sockets apart and in so doing, a slight rotational movement may be required to rock the contact pins 38 of the lamp into position to enter the guide channels 39, Fig. 8, and engage the contact terminals 40. This requirement for relatively spreading the sockets necessitates the pin contacts properly entering and engaging the terminals, and in final position the sockets are tensioned toward the ends of the lamp causing the sockets to exert a continuous yielding grip on the lamp. The sockets thus cooperatively clasp and hold the lamp in the fixture against vibration or other dislodging influences.

In Fig. 9 the invention is shown as incorporated in a "flush" type form of mounting, in which the sockets are supported wholly at the face of the base plate 10. In this instance a V-bent spring 41 is employed, disposed between the face of plate 10 and the back of the laterally extended base portion 13 of the socket, with the spread end of the V disposed in back of the lamp carrying portion of the socket so as to tilt the socket inwardly toward the tube, as before. The socket is confined in this relation by a through screw 16 which passes through clearance holes in the bent spring, as in the constructions shown in Figs. 2 and 3.

The invention is applicable to existing and more or less standard or conventional forms of fixtures and sockets. The spring mounting protects the sockets against strain and may compensate for variations in the spacing or dimensions of the sockets, and variations such as might be occasioned by bending or other malformation of the base plate 10. The heads of the screws 16 being exposed at the front of the base plate enables adjustment to give the sockets a desirable initial setting, as to inclination and spacing to best receive and fit closely against the ends of the inserted lamps. This adjustment also provides for taking up any undesirable lost motion or to take up for any possible wear.

Fig. 1 shows how with this invention the sockets 11 may actually engage the ends of the lamp and the contact pins 38 then enter and engage in the sockets their full length, assuring maximum mechanical support and maximum electrical conductivity. Thus with the invention no gaps or spaces are left between the ends of the lamp and opposing faces of the sockets.

The resilient mounting springs, as illustrated, may extend the full width of the socket bases, as in Figs. 3, 4, 5, 6 and 9, or only partly the width of the socket bases, as in Figs. 2 and 7.

What is claimed is:

1. A fluorescent lamp fixture comprising a supporting base, a fluorescent lamp socket having a lamp supporting portion and a laterally projecting base portion, a fastening loosely connecting said base portion of the socket with said supporting base of the fixture and a spring interposed between said base portion and supporting base for yieldingly rocking the socket into inclined relation on the supporting base, said base portion being disposed at the back of said supporting base and having a seat in the face of the same receiving said spring, and said spring being a strip of spring metal doubled upon itself and of a size to fit within said seat and bear against the back of the supporting base but arranged to collapse fully within the seat to enable said base portion of the socket to directly engage the back of the supporting base.

2. A fluorescent lamp fixture having a supporting base, a fluorescent lamp socket having a lamp supporting portion and a laterally projecting base portion and means for yieldingly mounting said socket on said supporting base, including a substantially U-shaped spring interposed between said supporting base and said laterally projecting base portion of the socket and a fastening extending through said supporting base, the base portion of said socket and the legs of the substantially U-shaped spring, said U-shaped spring being biased to rock the lamp socket into relatively inclined relation on the supporting base and said fastening being adjustable to pull the laterally projecting base portion toward the supporting base against the tension of said spring to reduce the relative inclination of the socket on the supporting base.

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