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T. A. STIFFEL

2,306,908

FLUORESCENT LAMP FIXTURE

Filed March 10, 1941

Fig. 1

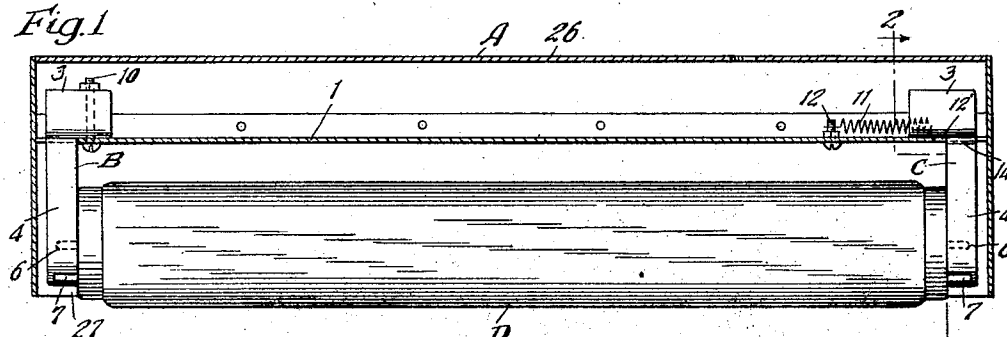


Fig. 2

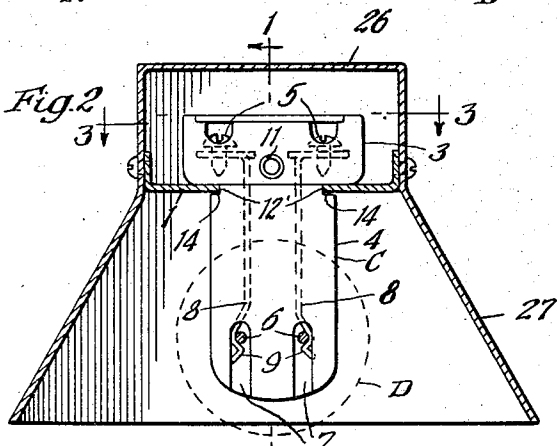


Fig. 4

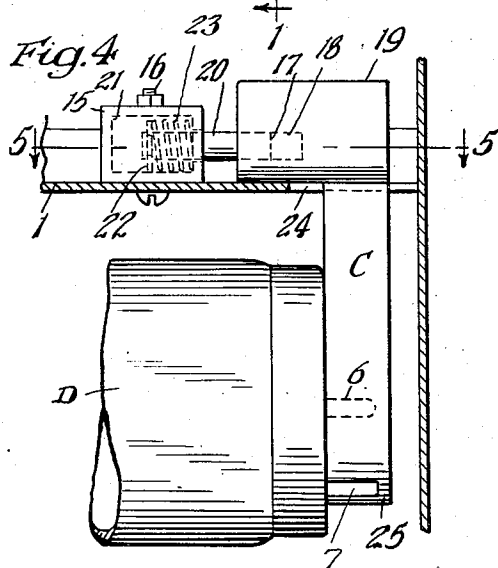


Fig. 3

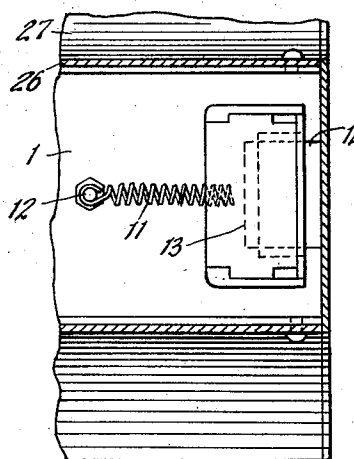
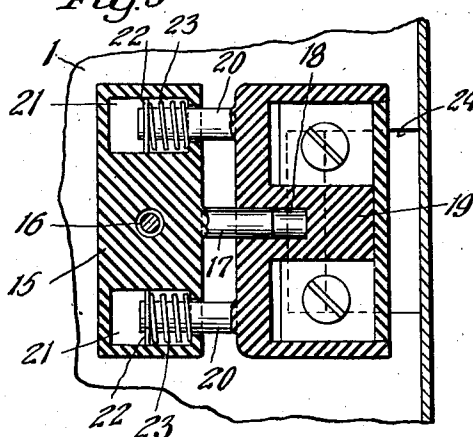


Fig. 5



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UNITED STATES PATENT OFFICE

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FLUORESCENT LAMP FIXTURE

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2 Claims. (Cl. 240—78)

My invention relates to improvements in lighting fixtures and particularly to that type of fixture for use in mounting fluorescent tube lamps.

One of the objects of my invention is to eliminate loose, uncertain, and broken connections between the tube lamp and its socket and hanger members, arising out of the manufacturing irregularities in the lengths of the tube lamps, and the practice of rigidly fastening the hanger sockets in fixed position in the fixtures.

Another object is to provide a fluorescent tube lamp fixture having hanger sockets yieldingly adaptable to the irregularities and variations in the length of the tube.

Other objects of my invention will appear hereinafter by reference to the following description in connection with the accompanying drawing.

Referring to the accompanying drawing,

Fig. 1 is a longitudinal sectional view of a fixture including a tube lamp in which the embodiment of my invention is illustrated, said view being taken substantially on the line 1—1 of Fig. 2;

Fig. 2 is an enlarged transverse section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged plan view on the line 3—3 of Fig. 2 of one end of the structure;

Fig. 4 is an enlarged view in elevation of a modified socket and hanger member; and

Fig. 5 is a detail section on the line 5—5 of Fig. 4.

The fixture A shown in the drawing comprises an elongated mounting plate 1 of metal from the end portions of which depend the hanger sockets B and C. Through these hanger sockets the electrical connections with the terminals 5 of the lamp tube D are made, and at the same time the hangers are utilized to mechanically mount or suspend the tube. For these reasons the hanger sockets are made of suitable insulating material and comprise a mounting or terminal block portion 3 and a socket shank 4. The terminal block portion is positioned above the mounting plate 1 and contains suitable terminals 5 to which are connected the electrical wires from the source of current supply. The socket shank 4 extends below the plate 1 and contains means for contact with the terminal prongs 6 of the lamp tube. This means varies with different forms of socket hangers, but in general the shank is provided with two recesses 7 opening at the end and inner face of the shank, as shown in Fig. 2, so that terminal prongs of the

tube lamp can be entered or inserted into the recesses from below and raised upwardly therein until the prongs engage spring clips 8 within the shank. The spring clips extend to and are connected with the terminals 5 in the terminal block. This provides the electrical connections with the tube. In addition it is usual to form the spring clips with hook portions 9, so that by snapping the prongs by the hook portions the lamp is held against dropping downwardly out of the recesses.

It is the practice in fixtures for these fluorescent lamps to rigidly fasten the hanger sockets to the mounting plate 1 and to space the socket 15 shanks a fixed distance apart according to the length of the tube lamp. In Fig. 1, at the left-hand end, one way of rigidly fastening the hanger is shown. This simply consists of a bolt 10 passed through the plate 1 and the block to 20 rigidly fasten the hanger socket in place.

The fixed spacing of the hangers, however, in practice, is not satisfactory, because the tube lamps are not actually of exact length but instead their lengths vary considerably due to 25 manufacturing irregularities and tolerances. Thus, if the particular tube being used happens to be slightly longer than the space between the hanger, the hangers are forced apart to admit the tube between them. This usually results in breaking the hanger socket. On the other hand, if the tube happens to be shorter than the space, the tube will be insecurely held in place and in electrical contact.

In accordance with my invention, I overcome these difficulties by providing a yielding hanger socket at one end of the fixture, although the hangers at both ends may be so arranged if desired. In Fig. 1 the hanger at the right-hand end is so arranged. Instead of rigidly fastening the terminal block portion 3 to the plate 1, it is permitted to slide longitudinally on the upper face of the plate 1 and a suitable spring 11 is anchored at one end 12 to the plate 1 and at the other end to the block portion 3 of the 40 hanger. The spring acts to yieldingly pull or draw the hanger towards the one at the opposite end. The parts are so proportioned that the inner limit of movement will space the hangers slightly less than the shortest tube. In this structure the plate 1 is provided with an end notch 12' through which the socket shank 4 extends and the inner end 13 of this slot forms the limit stop for the hanger. At the base of the shank where it joins the terminal block, the 45 side walls of the shank are provided with grooves

14 in which the side edges of the slot 12' engage. This interlocks the hanger with the plate to prevent its displacement, guides the hanger in its longitudinal movement, and prevents the hanger from tilting at an angle with respect to the longitudinal axis of the tube; and since the tubes are made with flat ends normal to said axis, the shank will be always maintained yieldingly in contact with and parallel to said flat end.

The structure shown in Figs. 4 and 5 is a modification. A separate insulating block 15 is fixedly fastened to plate 1 by means of the screw 16, and this block is provided with a stud 17 which fits in a guide socket 18 in the end of the terminal block portion 19. This permits longitudinal movement of the hanger and also prevents tilting thereof. The block 19 has two studs 20 which extend through openings in the wall of the fixed block 15 into recess 21 therein. These studs have collars 22 on their ends, and springs 23 surround the studs and are positioned under compression between the collars 22 and the wall of the block so that they yieldingly urge the hanger socket longitudinally toward the hanger at the opposite end of the fixture. The plate 1 has a slot 24 through which the socket shank 25 depends below the plate 1.

The fixture shown has a housing 26 over the plate 1 to conceal the wiring, and the housing has a hood 27 disposed below the plate 1, which with the underface of plate 1 serves as a reflector for the light from the tube lamp.

I claim:

1. In a fixture of the class described, the combination of a fixture frame, a pair of hanger members depending from said frame having a slot therein and having sockets with fixed terminals therein, said hangers being spaced apart to receive between them a fluorescent tube lamp of the type having pin terminals axially projecting from the ends thereof, one of said hanger members being mounted in fixed position on said frame, and the other having guide grooves engaging the frame slot to move bodily parallel with the tube lamp axis to conform the space between said members to the length of the particular tube lamp being used, and spring means acting on said movable hanger member to yieldingly maintain both members in bearing engagement with the ends of the tube lamp.

2. In a fluorescent tube lamp fixture of the class described, the combination of a frame plate, a hanger socket for the tube lamp movable axially of the tube lamp and including a terminal block above the plate and a socket shank extending below said plate for engagement with the end of the tube lamp, said plate having a notch through which said shank extends, and said shank having guide grooves engaging the edges of said notch, and a spring acting on said hanger socket to maintain the shank in engagement with the tube lamp end.

THEOPHILE A. STIFFEL.

CERTIFICATE OF CORRECTION.

Patent No. 2,306,908.

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THEOPHILE A. STIFFEL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, lines 4 and 5, claim 1, strike out "having a slot therein" and insert the same after "frame" and before the comma in line 3, same claim; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 16th day of February, A. D. 1943.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.