

July 7, 1942.

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2,288,939

TUBULAR LAMP FIXTURE

Filed July 22, 1940

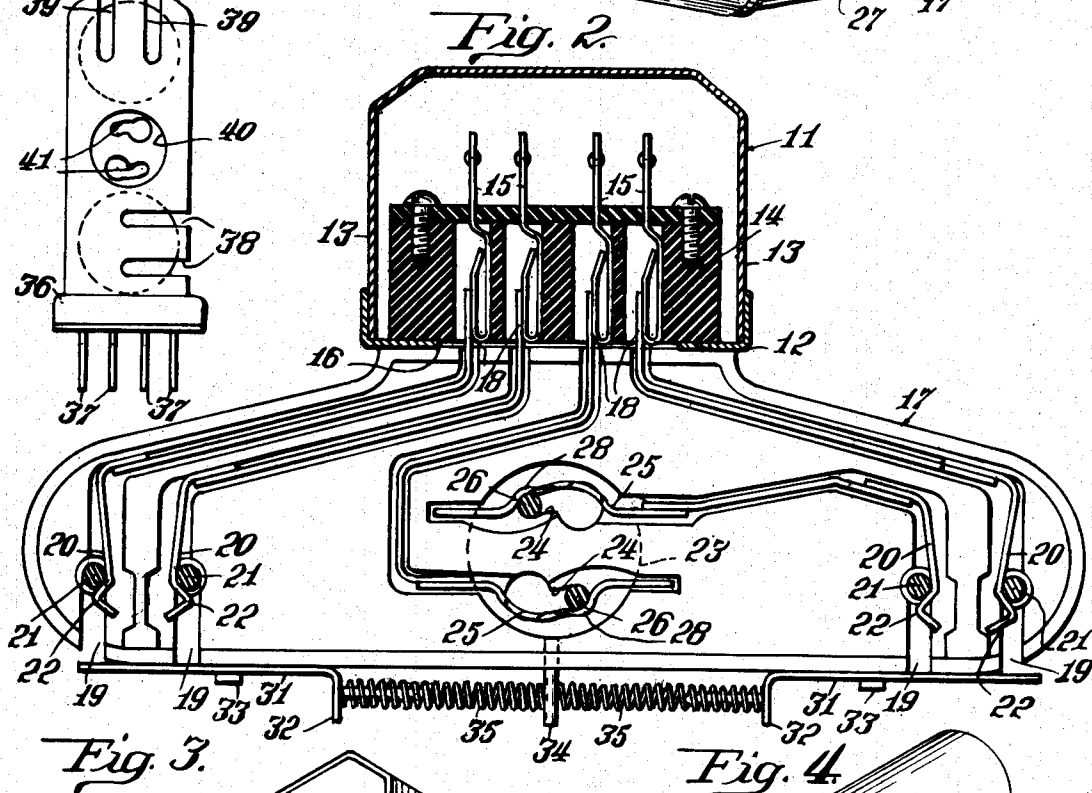
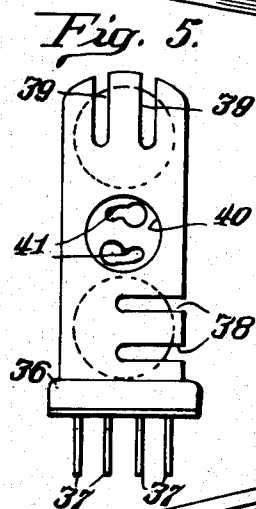
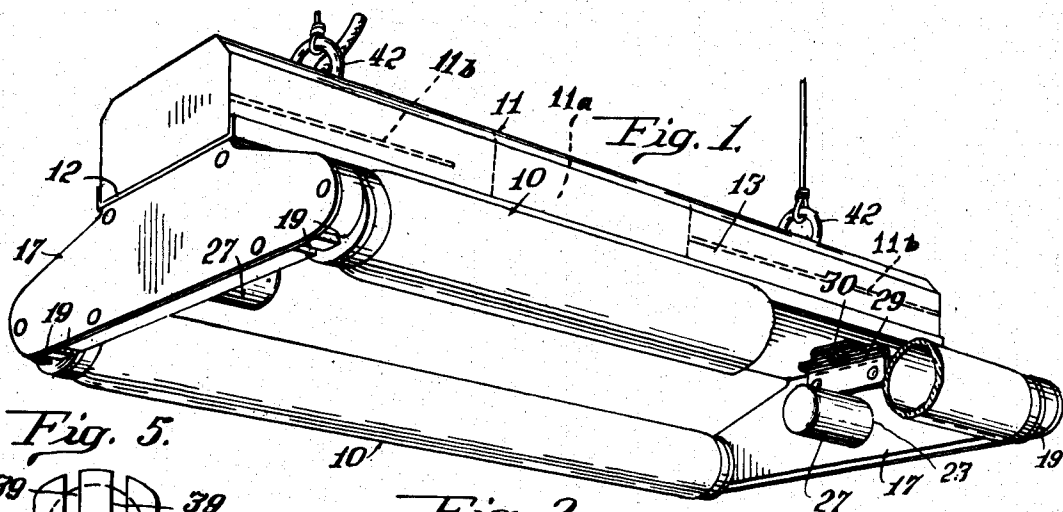


Fig. 3.

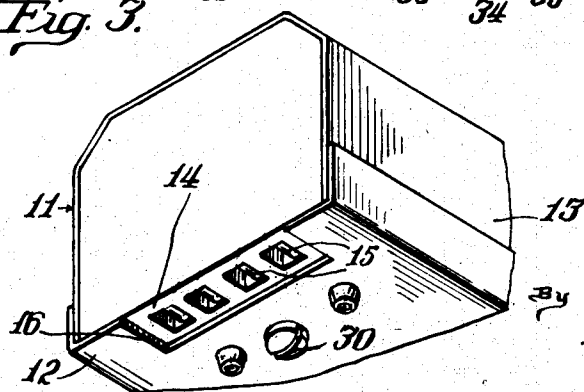
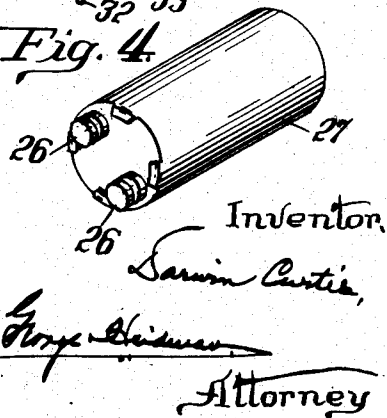


Fig. 4.



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UNITED STATES PATENT OFFICE

2,288,939

TUBULAR LAMP FIXTURE

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Application July 22, 1940, Serial No. 346,745

3 Claims. (Cl. 240-78)

My invention relates to an electric device or fixture for adapting standard light sources for artificial illumination and more especially adapted for the use of tubular electric lamps; the specific embodiment illustrated being more particularly adapted to the use of double ended lamps of the vapor type, although certain portions of the fixture may be employed with electric bulbs or lamps of a different nature.

The invention, more specifically stated, comprises a fixture which, for example, facilitates the use of the elongated light source or lamp known commercially as a fluorescent lamp especially applicable for industrial lighting, show window lighting, cove or recessed lighting and other types and involves a unit or housing for the respective ballast elements—such as transformers, compensators, chokes, condensers and the like employed with the usual gaseous discharge or vapor type of lamp—receptacles and current conducting means intermediate of the ballast elements and the receptacles.

The invention also involves one or more lamp holders which, in addition to effecting electrical relation with the receptacle or receptacles mounted in the housing, provided with means whereby a positive mechanical relation with the housing is provided and the possibility of accidental dissociation of the parts is eliminated.

The invention also contemplates a fixture which includes a combination lamp control and plug-in lampholder for one or more lamps; the housing and lampholder comprising a complete unit or fixture wherein no extraneous wiring by the user is required and hence the possibility of errors in wiring eliminated and installation greatly facilitated.

One object of the invention is to facilitate, for example, the use of elongated lamps by minimizing the amount of time and labor required in wiring, in its assembly as well as in installation, by providing a unit or complete fixture which may be easily and quickly installed.

Another object of the invention is the provision of a fixture adapted for a multiple of elongated light sources or lamps and provided with lampholders that are interchangeable end-to-end and maintain proper electrical circuit connections and which are formed to receive a lamp starter or starting switch.

Another object of the invention is the provision of means, independent of the electrical contact elements, whereby accidental discharge of the lamp from the lampholder is prevented; and a lampholder is provided which connects directly

to the current carrying parts in a ballast housing, wireway or fixture without the need of attaching wires to the terminals thereof.

The above enumerated objects and advantages inherent in the invention will all be more readily comprehended from the following detailed description of the accompanying drawing wherein:

Figure 1 is a perspective view of my improved fixture in suspended position and shown provided with two tubular lamps, an intermediate portion of one of the lamps and portions of the suspending cords and the feed cord broken away.

Figure 2 is a transverse sectional view through one end of the fixture and one of the lamp holding members and also illustrating an automatic lamp-pin slot closing means secured to the lampholder.

Figure 3 is a detail perspective view of one end of the fixture with the lampholder omitted to disclose the holder plug-in or receptacle.

Figure 4 is a perspective view of a type of starter or switch element employed with the type of lamp shown in Figure 1.

Figure 5 illustrates a modified form of lamp and starter holder in elevation.

In the particular exemplification of the invention, the fixture is shown adapted to receive two parallelly arranged tubular lamps indicated at 10, 10, although it will be understood that one or a multiple of lamps may be employed in keeping with the type of lampholder used in the fixture which latter may be suspended or supported in any desired manner.

The fixture consists of a housing 11 of suitable shape and dimensions in which the so-called "ballast" apparatus 11a used with vapor or fluorescent type of lamps (consisting of transformers, chokes, condensers, etc.) are mounted and electrically connected as at 11b. As this "ballast" apparatus is of well known construction and in themselves constitute no part of the invention, further illustration and description thereof is not deemed necessary.

The housing 11, which is of length in keeping with the length of the lamp to be employed, is preferably made of thin sheet metal formed to provide a cover plate 12 shown flanged along its longitudinal edges; the ballast and other elements of the fixture being mounted in the housing. The flanges of the plate overlap the lower edges of the side walls of the portion 13; the cover plate and the other walls of the housing being firmly secured together in any suitable manner after the ballast elements, receptacles

and wiring have been installed within the housing.

The housing 11 at opposite ends is provided with receptacles 14 formed with a number of pin receiving openings and contact springs 15 in keeping with the number of contact posts of the lampholder to be employed; the spring contacts 15 of the receptacles, of course, being electrically wired or connected to the ballast elements enclosed in the housing. In order to enable proper access to the sockets of the receptacles 14, the cover plate 12 is notched or cut out as shown at 16.

The receptacle 14 is especially adapted to the type of lampholder 17 employed in the exemplification and shown provided with four contact posts 18 which are forced into the openings of the receptacles 14 and effect electrical relation with the spring contacts 15 of the receptacle.

The body of each lampholder at its ends is provided with a pair of slots 19 extending upwardly from the lower longitudinal edge and through to the side faces of the holder; the outer side of the body being provided with a cover plate as shown in Figure 1. The holders are provided with suitable spring contacts 20, whose ends are shown angularly offset to provide shoulders which extend into the slots 19 and effect frictional holding engagement with the terminal posts 21 provided at each end of the tubular lamps 10. The posts 21 of the lamps 10 are inserted upwardly through the lower ends of the slots 19, causing the spring contacts 20 to flex laterally until the terminal posts of the lamp pass beyond the shoulders 22 of the spring contacts and allow the latter to spring back to normal position with their shoulders 22 disposed beneath the lamp terminals in holding and electrical relation therewith.

The inner faces of the lampholders 17, preferably intermediate the ends, are each provided with a starter or switch element receiving socket 23 and the inner wall of the socket provided with a pair of oppositely disposed key-hole slots 24.

The holder 17 is also provided with a pair of spring contacts 25 arranged adjacent the slots 24 and adapted to effect electrical and frictional holding engagement with the pins 26, 26 of the type of starter or switch element 27 shown in Figure 4. The pins 26 of the switch are initially inserted in the enlarged ends of the slots 24 and the switch partially rotated (namely counterclockwise in Figure 2) until the pins 26 enter the small ends of slots 24 and into engagement with the bowed portions 28 of the spring contacts which frictionally hold the switch pins in firm electrical relation.

The lampholders 17 on their inner faces and at their upper edges are provided with angle brackets 29, one leg or side whereof is adapted to extend flush with the lower face of housing 11 to which it is secured, as for example by screw 30, or in any other suitable manner whereby the lampholder, in addition to the frictional holding engagement effected by the spring contacts, is positively held against accidental displacement due to vibration, its own weight and the weight of the lamps.

In order to prevent the pins 21 of the lamps 10 slipping through the lower ends of slots 19 as a result of vibration, the lower edge of each lampholder may be provided with means adapted to automatically move across the lower ends of the lamp-pin receiving slots 19 as shown in the modification and lampholder disclosed in

Figure 2. One adaptation of the means is shown applied to the lower or slotted edge of the lampholder shown in Figure 2 and consists of a pair of slidably mounted strips 31, with the inner or opposing ends bent outwardly into finger grasping portions 32. The main body portion of the lampholder 17 is provided with a small projecting lip as at 33 having a groove in its side face for slidably receiving the edge of the strip 31, while the opposite longitudinal side of the strip 31 is slidably held in position either by having the cover plate of the holder (disclosed on the outer side of the lampholder shown at the left in Figure 1), or similar lips on the corresponding edge of the cover plate, overlap the slotted sides of the lips 33. The edge of the lampholder is also provided with a small pin 34, substantially at the longitudinal center of the holder, to which one end of each coil spring 35 is secured while the other ends of the springs are secured to the adjacent strip 31; the springs normally forcing the strips toward the ends of the lampholder and hence across the bottoms of the slots 19; the clearance between the inner ends 32 and the spring binding post 34 being sufficient to permit the outer ends of the strips to move into slot uncovering position. The bent ends 32 provide finger grasping portions whereby the cover-strips may be slid against the action of the springs 35. A positive closure for the lamp-pin receiving slots is provided and dropping of the lamp is made impossible.

In Figure 5 I show a modified form of lamp and switch holder having a base end 36 provided with contact posts 37, with a pair of lamp-pin receiving slots 38 extending transversely of the holder from one longitudinal edge and a pair of lamp-pin receiving slots 39 extending lengthwisely from the end of the holder. It will be understood, of course, that the holder, similar to the holder shown in Figure 2, has suitable spring contacts leading from the posts 37 to the sides of the slots to effect electrical and frictional holding relation with the respective pins of the lamps which are inserted through the ends of the slots in the manner heretofore described.

One side wall of the holder, intermediate of the two pairs of slots, is also provided with a socket 40 which is also preferably provided with a pair of slots 41 similar to those shown in Figure 2 adapted to receive the pins 26 of a starter or switch 27 shown in Figure 4; it being understood that spring contacts are disposed at the perimeters of the slots 41 to effect electrical relation with the starter pins 26.

In the exemplification, the fixture is shown provided with suitable loop members 42 which are shown secured to the top of the control elements and wire enclosing housing 11, although other suitable means whereby the fixture is secured in place may be employed; the fixture, as has been stated, involving a combined element enclosure and wire-way which enables the fixture to be completely assembled by the manufacturer.

The fixture disclosed in the drawing for purposes of exemplification is shown provided with two elongated lamps of the pin base type, but it will be understood that the invention may be employed with a fixture having one or more lamps; the particular embodiment having been described in terms employed for purposes of description and not as terms of limitation, as structural modifications are possible and may be made without, however, departing from the spirit of

my invention as defined in the appended claims.

What I claim is:

1. A lamp fixture of the character described comprising a housing, a wall whereof is provided with slots arranged predetermined distances apart; ballast apparatus arranged in the housing; interchangeable plate-like lampholders with multiple lamp-pin receptacles and with starter receiving sockets arranged intermediate the lamp-pin receptacles, said plate-like lampholders having contact prongs at one end thereof for insertion in said slots of the housing; current carrying elements arranged in the housing intermediate the ballast apparatus and said contact prongs; and means operatively intermediate the lampholders and the housing for rigidly securing the lampholders to the housing.

2. A lamp fixture for tubular vapor lamps comprising a channel housing; a cover therefor provided with openings adjacent its ends; contact holding receptacles arranged in the housing coincident with said openings; ballast apparatus

5 arranged in the housing; current carrying means arranged in the housing in electrical relation with said ballast apparatus; and a plate-like multiple lampholder attached at each end of the channel housing and provided with prongs at the base portion thereof for plug-in engagement with the receptacles, said plate-like lampholders being substantially of the same width as the channel housing at the base portion thereof and of greater width at the lamp holding portion thereof to receive multiple lamp-pin receptacles and starter receiving sockets intermediate thereof, said plate-like lampholders being so constructed as to be readily interchangeable end for end of the housing.

10 3. A lamp fixture for tubular vapor lamps as set forth in claim 2, wherein the lampholders are arranged transversely of the housing with their lamp-pin receiving receptacles disposed in planes beyond the sides of the housing.

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