July 10, 1945. D. J. BILLER 2,380,211

FLUORESCENT LAMP MOUNTING

Filed June 5, 1944

Fig. 1.

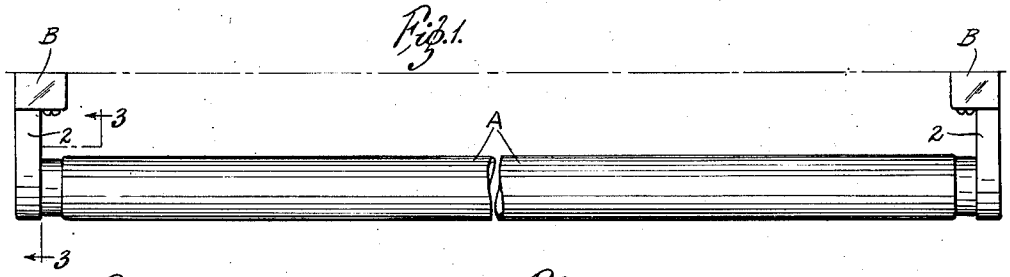


Fig. 2.

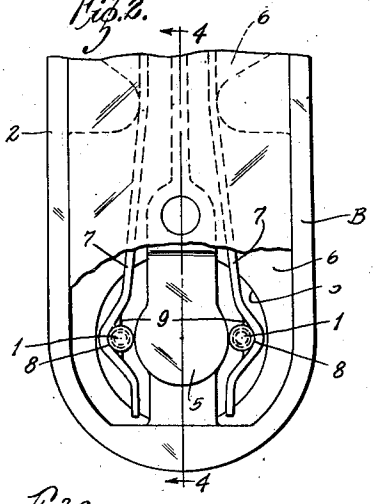


Fig. 4.

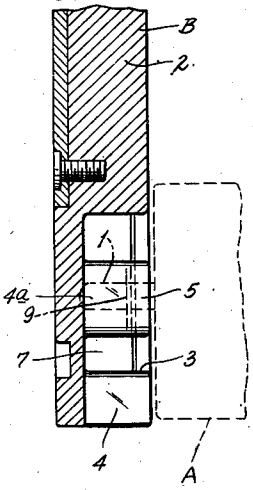


Fig. 6.

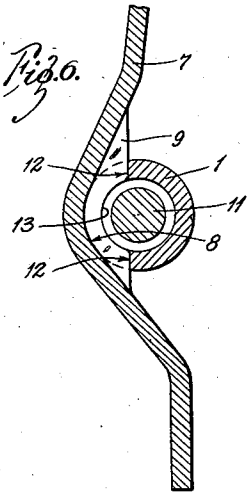


Fig. 3.

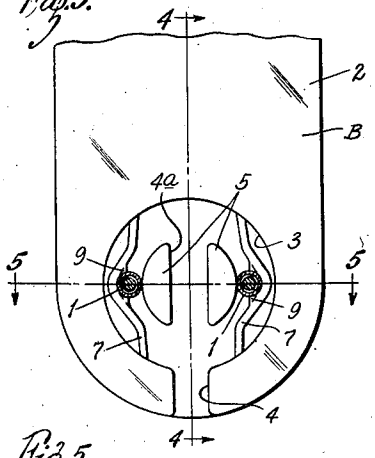


Fig. 7.

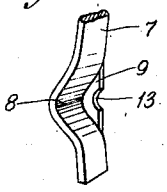


Fig. 8.

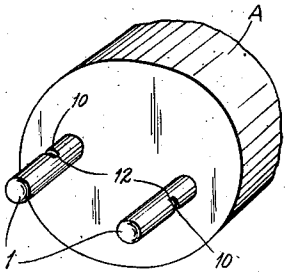
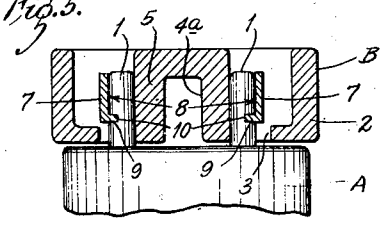


Fig. 5.



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2,380,211

FLUORESCENT LAMP MOUNTING

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Application June 5, 1944, Serial No. 538,803

4 Claims. (Cl. 176—32)

This invention relates to fluorescent lamp mountings of the type wherein the tubular lamp has contact pins projecting from the ends thereof that are supported in sockets provided therefor in the opposing end faces of a pair of fixed lampholders and said pins are inserted in and removed from said sockets by sidewise movement of the lamp and are engaged with and disengaged from the spring contact members in said sockets by rotating said lamp.

With such mountings, tilting, looseness and/or wide spacing of the lampholders results in end play of the lamp therein sufficient to disengage the contact pins from the spring contacts thereof and render the lamp inoperative and sometimes cause the lamp to fall from the lampholders with resulting lamp breakage, damage to objects and injury to persons. The object of the present invention is a simple and economical fluorescent lamp mounting of the above type which will obviate the difficulties above pointed out. The invention consists in providing the lamp contact pins and lampholder spring contacts with cooperating portions that prevent axial disengagement of said contact pins from the springs and lampholders, that are engaged and disengaged by rotating the lamp and that prevent accidental rotation of said lamp. The invention also consists in the lamp mounting and in the lamp and lampholder hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a side elevational view of a fluorescent lamp mounting embodying my invention,

Fig. 2 is an enlarged fragmentary vertical end elevational view of said mounting.

Fig. 3 is an enlarged vertical fragmentary sectional view on the line 3—3 in Fig. 1,

Fig. 4 is a vertical sectional view on the line 4—4 in Fig. 2,

Fig. 5 is a horizontal cross-sectional view on the line 5—5 in Fig. 3,

Fig. 6 is an enlarged vertical sectional view through the cooperating portions of a contact pin and spring,

Fig. 7 is a fragmentary perspective view of one of the spring contacts; and

Fig. 8 is a perspective view of one end portion of the fluorescent lamp.

In the accompanying drawing, my invention is shown embodied in a fluorescent lamp mounting comprising a tubular lamp A and lampholders B for the ends thereof adapted to be secured to a suitable support (not shown). As shown in the drawing, the tubular lamp A has a pair of spaced contact pins or prongs 1 projecting from each end thereof. Each lampholder B comprises a body 2 of insulating material having in the lamp end opposing face thereof an annular recess or socket 3 and a radial slot 4 leading from said recess to the outer edge of said body. The central post 5 formed by the inner wall of the annular socket 3 has a diametral slot 4a therein. Located within a recess 6 in the back of the lampholder B are spring contact blades or members 7 disposed one on each side of the stud 5. The stud or post 5 serves to space the free lower ends of the spring contacts 7.

The spaced contact pins or prongs 1 of the lamp A are moved laterally in alinement through diametral slots 4 and 4a in the lampholder B until both prongs are disposed in the annular socket 3 therein, after which the lamp is rotated ninety degrees to bring said prongs into engagement with concave seats 8 provided therefor in the portions of the spring contacts 7 located on opposite sides of the post 5. The spring contacts 7 grip the prongs or pins 1 of the lamp A and hold them in fixed position against the guide stud or post 5. The fluorescent lamp and lampholder construction thus far described is well known and it is considered unnecessary to illustrate it in detail.

According to the present invention, each spring contact 7 of each lampholder A is provided at the lamp opposing end of the transversely concave lamp pin seat 8 therein with a cross rib 9 adapted to enter a transverse notch or groove 10 provided therefor in the outer side face of the lamp pin 1 in said seat. In accordance with common practice, the lamp pins 1 are made hollow and receive the usual lead wires 11 that are secured therein by dipping the hollow open-ended pins in a bath of molten solder. With this type of contact pin, the semi-circular groove 10 therein forms radial shoulders 12 at the ends of said grooves, which shoulders seat on the rib 9 and thus resist rotary movement of the lamp. The rib 9 is preferably also notched, as at 13, to clear the lead wires 11 in the contact pin cooperating therewith.

By the arrangement described, the lamp A is mounted in tubular lampholders B in the usual manner by passing the contact pins 1 of the lamp through the diametrical slots 4 and 4a in the lampholders into the annular sockets 3 thereof and then rotating the lamp to bring said pins into engagement with the concave seats 8 in the post

opposing, free end portions of the spring contacts 7 of the lampholders. During this operation, the cross ribs 9 in the concave seats 8 slide into the semi-circular cross-grooves or notches 10 provided therefor in the outer side faces of the contact pins 1 and thus prevent endwise withdrawal of said pins from the lampholders, while the shoulders 12 at the ends of said notches seat flatwise against said cross rib and thus prevent accidental rotation of the lamp. Thus, the contact pins 1 are held against axial movement relative to the spring contacts 7, thereby tying the two lampholders together in proper spaced relation and preventing loss of contact between said contact pins and springs and preventing the lamp from falling out of the lampholders and causing lamp breakage, damage to objects and injury to persons. The present lamp may be mounted in standard lampholders, while the present lampholders may be used with lamps of standard construction.

What I claim is:

1. In a fluorescent lamp mounting comprising a tubular lamp having spaced parallel pin contact members projecting from the ends thereof and lampholders having annular sockets and grooves through which said pin contact members are entered into said sockets, and spring contact members secured to said holders and having free end portions disposed in said sockets on opposite sides thereof, whereby said pin contact members are rotatable into engagement with said free end portions of said spring contact members, the improvement which consists in providing the engaging surfaces of said pin and spring contact members with interlocking portions that prevent axial disengagement of said pin contact members from said spring contact members, said interlocking portions comprising a rib on one of said cooperating pin and spring contact members and a groove on the other of said members, said rib and groove extending transverse to the longitudinal axis of said pin.

2. In a fluorescent lamp mounting comprising a tubular lamp having spaced parallel pin contact members projecting from the ends thereof and lampholders having annular sockets and grooves through which said pin contact members are entered into said sockets, and spring contact members secured to said holders and having free end portions disposed in said sockets on opposite sides thereof, whereby said pin contact members are rotatable into engagement with said free end portions of said spring contact members, the improvement which consists in providing the engaging surfaces of said pin and spring contact members with interlocking portions that prevent axial disengagement of said pin contact members from said spring contact members, said interlocking portions comprising a rib on one of said cooperating pin and spring contact members and a groove on the other of said members, said rib and groove extending transverse to the longitudinal axis of said pin, and being held in engagement by the resiliency of the spring contact member, said rib and groove being engaged and disengaged by rotary movement of said lamp.

3. In a fluorescent lamp mounting comprising a tubular lamp having spaced parallel contact pins projecting from the ends thereof and lampholders having annular sockets and grooves through which said pin contact members are entered into said sockets, and spring contact members secured to said holders and having free end portions disposed in said sockets on opposite sides thereof whereby said pin contact members are rotatable into engagement with said free end portions of said spring contact members, the improvement which consists in providing the engaging surfaces of said contact pin and spring contact members with interlocking portions that prevent axial disengagement of said pin contact members from said spring contact members, said interlocking portions comprising ribs on said free end portions of said spring contact members and transverse grooves in said pin contact members adapted to be engaged and disengaged by rotary movement of said lamp, said ribs contacting flatwise with the bottoms of said grooves and such contact being maintained by the resiliency of said spring contact members.

4. In a fluorescent lamp mounting comprising a pair of spaced lampholders having in their opposing faces annular sockets and grooves leading thereto, spring contact members secured to said holders and having free end portions disposed in said sockets on opposite sides thereof, said free end portions having grooves therein disposed lengthwise of said sockets and a tubular lamp having spaced parallel contact pins at the ends thereof that are entered into said sockets through the grooves leading thereto and are rotatable into engagement with the grooves in said spring contacts, the improvement which consists in providing the remote sides of said contact pins with transverse grooves and the grooves of said spring contact members with cross-ribs adapted to fit within and bear resiliently against the bottoms of said grooves and thereby prevent axial disengagement of said contact pins from said spring contacts, said ribs and grooves being engaged and disengaged by rotary movement of said lamp.

DAVID J. BILLER.