Dec. 30, 1941. H. C. JONES 2,268,152

FLUORESCENT UNIT

Filed Jan. 25, 1940 2 Sheets-Sheet 1

Fig. 1

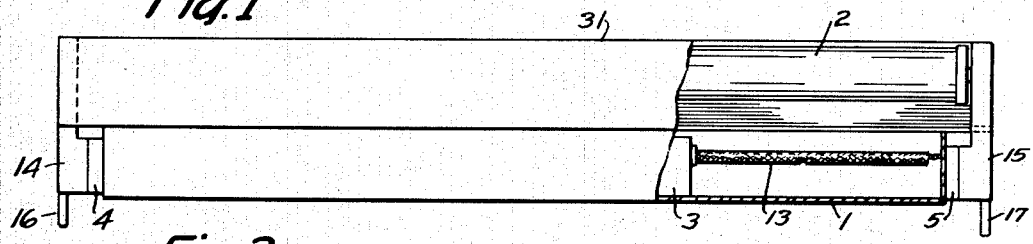


Fig. 2

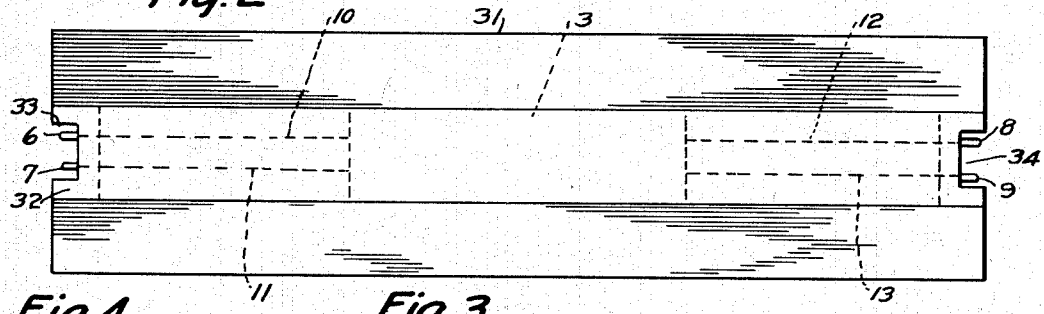


Fig. 4

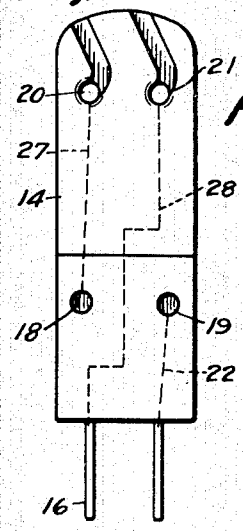


Fig. 5

Fig. 3

Fig. 6

Fig. 7

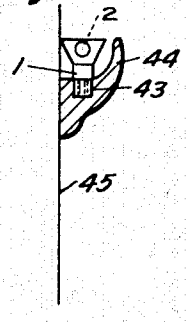


Fig. 8

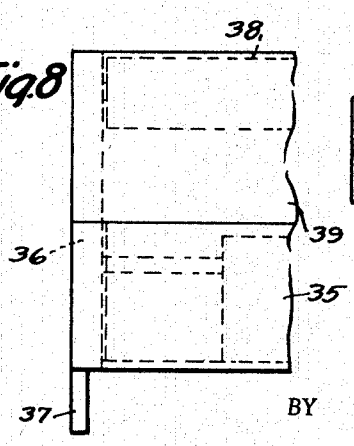
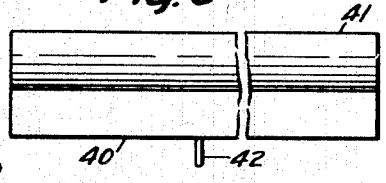


Fig. 9



INVENTOR.

Henry C. Jones

BY James Hanison Bowen

ATTORNEY.

Dec. 30, 1941. H. C. JONES 2,268,152

FLUORESCENT UNIT

Filed Jan. 25, 1940 2 Sheets-Sheet 2

Fig. 10

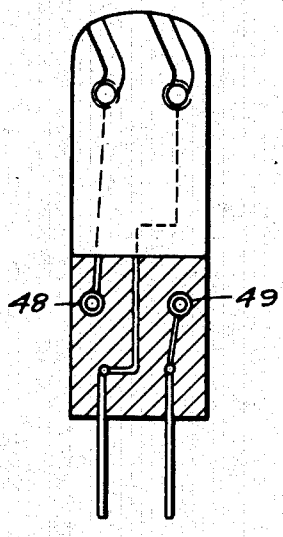


Fig. 11

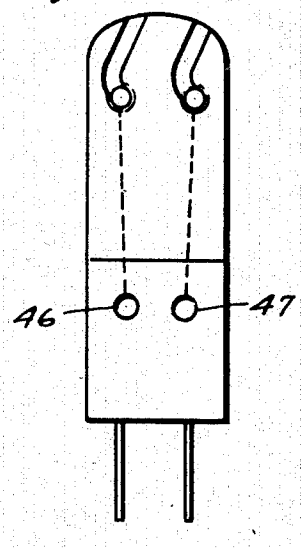
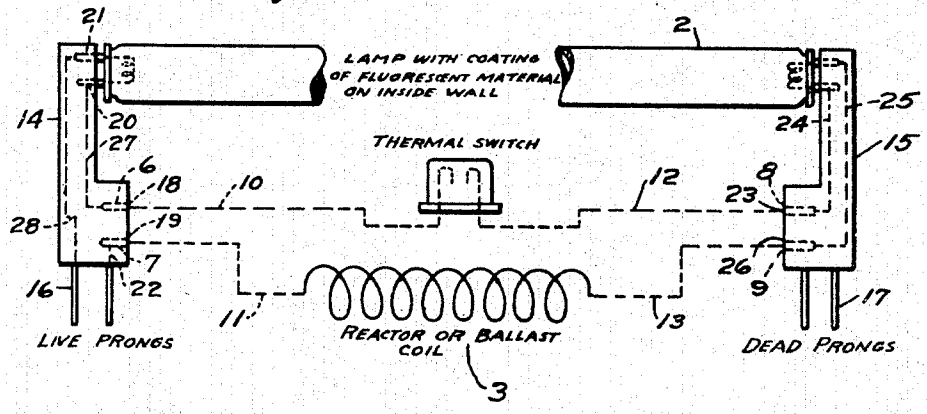


Fig. 12



INVENTOR.

Henry C. Jones

BY James Harrison Bowen

Patented Dec. 30, 1941

2,268,152

UNITED STATES PATENT OFFICE

2,268,152

FLUORESCENT UNIT

Henry C. Jones, Bronxville, N. Y.

Application January 25, 1940, Serial No. 315,501

6 Claims. (Cl. 240—1)

The purpose of this invention is to provide a fluorescent unit which in itself is complete and may be used by readily plugging it directly into electrical outlets or the like.

The invention is a relatively long casing, adapted to accommodate a lighting tube, with plugs at the ends having contacts for the ends of the tube and also contacts by which the casing may be mounted in electrical outlets, and the casing is designed to house a control unit or ballast and switch and suitable wiring to connect the control unit to the plugs and tube. The unit is also provided with a reflector positioned behind the tube and this may be mounted upon the casing and may provide a cover or closure therefor.

There are several tubular lighting units of the incandescent filament type with contacts at the ends of the tube to which are attached plugs that may be plugged directly into electrical sockets, whereas tubes using an electrical arc to actuate fluorescent material coated on the tube require a control unit or ballast coil and starting switch and these must be connected through plugs, one having connections to supply current to the unit from electrical outlets, and the other, having connections only, to transfer current from the control unit to the lighting tube.

The object of this invention is, therefore, to provide a complete fixture for fluorescent tubes which may readily be plugged in the same as similar fixtures using filament tubes.

Another object is to provide a complete fixture for lighting tubes of the fluorescent type which may readily be held in spaced sockets by plug contact prongs extending therefrom.

Another object is to provide a fixture for lighting tubes of the fluorescent type in which the tube holding sockets or plugs are removable to facilitate packing.

A further object is to provide a plug for lighting fixtures having control units therein in which a circuit may pass through the plug, control unit, and tube.

And a still further object is to provide a complete fixture for lighting tubes of the fluorescent type which is of a simple and economical construction.

With these ends in view the invention embodies a relatively long narrow casing suitable for housing a control unit, with contact prongs extending at the ends of the casing, a reflector, and plugs removably held on the prongs at the ends of the casing and fitted at their upper ends for receiving lamp contacts, and having contacts for electrical outlets at the opposite or lower ends.

Other features and advantages of the invention will appear from the following description, taken in connection with the drawings, wherein:

Figure 1 is a view showing a side elevation of the fixture with part broken away.

Figure 2 is a plan view of the fixture.

Figure 3 is a cross section through the fixture.

Figure 4 is a view showing one of the plugs at the end of the fixture.

Figure 5 shows a side elevation of the lower part of the plug.

Figure 6 is a detail showing a section through one end of the casing with part broken away and with the plug indicated by broken lines.

Figure 7 is a view illustrating the fixture in picture molding for indirect lighting.

Figure 8 is a detail showing an alternate design in which the plug is made integral with the casing.

Figure 9 is a view similar to that shown in Figure 1 with part broken away and showing an alternate design in which the contacts are provided at a point intermediate of the casing.

Figure 10 is a view showing a plug similar to that shown in Figure 4 with the lower part shown in section.

Figure 11 shows the plug at the opposite end with the lower sockets closer together than those of the plug shown in Figure 10.

Figure 12 is a diagrammatic view showing a wiring diagram with the positions of the lower sockets and prongs, which should be behind one another, distorted for the purpose of illustration.

In the drawings the unit is shown as it may be made wherein numeral 1 indicates the casing, numeral 2 the lighting tube, and numeral 3 the control unit, as described in catalogue pages GEA-3293B of the General Electric Company.

The casing is of a rectangular shape and is relatively long and the control unit 3 fits in the casing and may be located at the center as shown or at any point therein. At the ends of the casing are insulating blocks 4 and 5 with prongs 6 and 7 extending from the block 4 at one end and 8 and 9 extending from the block 5 at the other and these prongs are connected to the control unit 3 by wires 10 and 11 at one end and 12 and 13 at the other.

At the ends of the casing are plugs 14 and 15 with contact points 16 and 17 extending therefrom and these points are spaced and formed so that they may be inserted in wall sockets or electrical outlets which may be spaced to correspond

with the length of the casing of the unit or the length of the casing may be made to correspond with the distances between the outlets; and the contact points of one plug may be connected in the circuit of the unit whereas the points of the plug at the opposite end may stop at the base providing a dummy plug, the function of which is to support the end of the unit, and provide electrical connections between the control unit and the end of the tube.

The live plug, which in this design is indicated by the numeral 14, may be formed as shown in Figure 4 with receiving openings 18 and 19 for the prongs 6 and 7 and sockets 20 and 21 for the terminals of the light tube 2. This plug is wired with one of the contacts 16 connected by a wire 22 to the point 19 and from the point 19 to the control unit by the wire 10 and the opposite terminal of the control unit is connected by the wire 12 to the plug 15 at the point 23 and the point 23 is connected to one of the terminals of the tube 2 by a wire 24 with the other terminal at this end of the tube connected by a wire 25 to the point 26 and from the point 26 back to the control unit through the prong 9 and wire 13. The terminal at the opposite end of the control unit is connected by the wire 11 and prong 7 to the point 18 and from the point 18 to the socket 20, where it contacts one terminal of the tube 2 at this end, by a wire 27, and the other terminal of the tube is connected by a wire 28 to the other contact 16. It will be understood, however, that these circuits may be made in any other manner.

The casing 1 is formed with outwardly flared flanges 29 and 30 and a reflector 31 is formed so that it will rest in the flanges and be positioned under the tube 2 with the straight portion 32 at the base notched at the points 33 and 34 to fit around the plugs. It will be understood that the reflector may be of any other shape or design.

In Figure 8 the casing, which is indicated by the numeral 35, is formed with the plugs 36 made integral therewith and contacts 37 similar to the contacts 16 and 17 are provided at one end with means for holding a lighting tube 38 at the other, and a reflector 39 may also be provided as shown.

Figure 9 shows a unit 40 with a reflector 41 and contacts 42 located intermediate of the ends of the casing and Figure 7 shows a unit with the casing 1 mounted in spaced electrical sockets 43 in molding 44 on a wall 45.

The plugs shown in Figures 10 and 11 are similar to those shown in Figures 4 and 3, respectively, and in Figure 11 it will be noted that sockets 46 and 47, similar to sockets 23 and 26, are closer together than sockets 48 and 49, corresponding with the sockets 18 and 19.

The wiring diagram shown in Figure 12 illustrates a thermal switch 50 and a reactor or ballast coil 51, and it will be understood that these may be incorporated in the control unit 3, or provided independently as may be desired.

It will be understood that other changes may be made without departing from the spirit of the invention. One of which changes may be in the use of a casing of any other shape or design, another may be in the use of other means for removably mounting the plugs on the casing, and still another may be in the use of a plurality of units in combination or in the use of a plurality of control units in one unit, in which a plurality of lighting tubes may also be used.

The construction will be readily understood from the foregoing description. In use the unit may be provided as shown and described, and as electrical outlets and fluorescent units are generally uniformly spaced by most manufacturers, the length of the casing may be correspondingly uniform, so that it is only necessary to insert the plug contacts in the outlets, and the unit is ready to light, and when in place it may be held by any means.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent, is:

1. A lighting unit for fluorescent tubes comprising an elongated base compartment, a control unit in said compartment, an outer compartment with a reflecting inner surface, a fluorescent tube positioned in the outer compartment, and circuit carrying plugs at the ends of said unit providing connecting means between the control unit and tube, and with one of said plugs adapted to provide contacting means for supplying current to the unit.

2. A lighting unit as described in claim 1, in which the plugs are provided with prongs adapted to be inserted in wall sockets.

3. A unit as described in claim 1, in which the connection to the circuit is made through one plug only.

4. A lighting unit for fluorescent tubes, comprising an elongated base compartment, a control unit in said base compartment, an outer compartment, a fluorescent tube in said outer compartment, and removable plugs at the ends of the unit having sockets and connectors providing connecting means between the control units and light tube and between the control unit and a source of current supply.

5. A lighting unit for fluorescent tubes, comprising a base compartment, a control unit in said base compartment, an outer compartment, a fluorescent tube in said outer compartment, and plugs at the ends of the unit having sockets and connectors providing connecting means between the control unit and light tube and a source of current supply.

6. A lighting unit for fluorescent light tubes comprising a relatively long narrow casing with contact prongs extending at the ends with the prongs at one end spaced further apart than those of the other, said casing adapted to house a control unit with the terminals of the unit connected with the prongs, plugs having receiving sockets adapted to be placed on the said prongs, contact prongs extending from the ends of the said plugs, said plugs having additional sockets for the terminals of a light tube, and a reflector positioned upon the casing, said unit characterized in that the plug at one end of the casing provides connections from the control unit to the light tube and one of the prongs of the plug at the other end connects with one of the receiving sockets with the other receiving socket connecting with one of the tube sockets and the other tube socket connecting with the other prong extending from the end of the plug.

HENRY C. JONES.