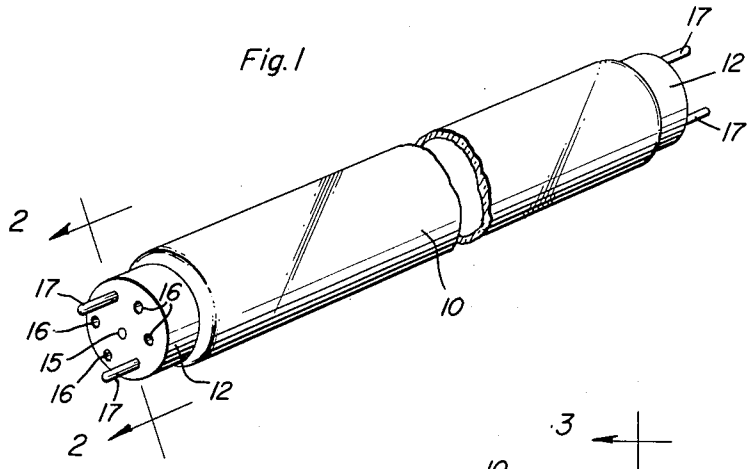
March 5, 1957 B. M. MALE 2,784,336

TRIPLE LIFE FLUORESCENT LAMP

Filed March 6, 1956

Fig. 1



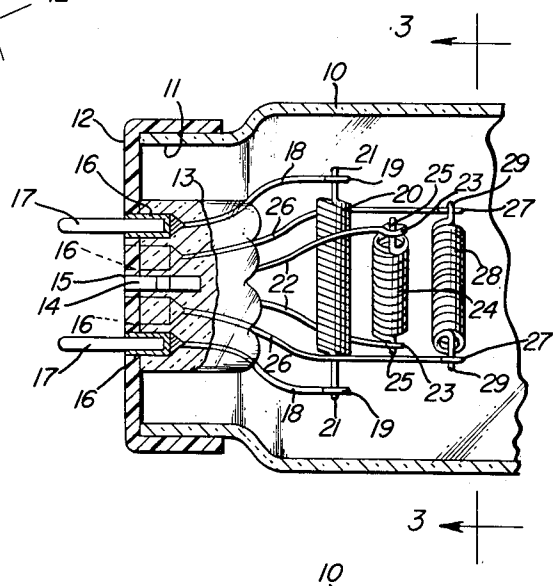


Fig. 2

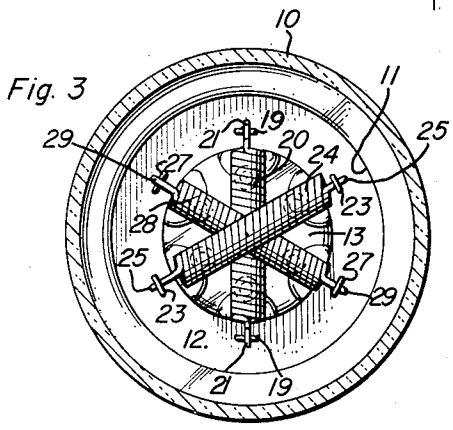


Fig. 3

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United States Patent Office 2,784,336 Patented Mar. 5, 1957

2,784,336

TRIPLE LIFE FLUORESCENT LAMP

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Application March 6, 1956, Serial No. 569,877

4 Claims. (Cl. 313—243)

This invention relates to fluorescent lamps.

Conventional fluorescent lamps have two cathodes, one being located at each end of the lamp. These cathodes are covered with an emission coating and when the coating becomes encrusted, the lamp will no longer light and has consumed its burning hours (the average fluorescent lamp has approximately 7500 burning hours).

It is accordingly a principal object of the present invention to provide a fluorescent lamp which extends the burning hours of the lamp to approximately 22,500 hours.

It is another object of the present invention to provide a triple life fluorescent lamp of the above type which can be manufactured for only a few cents additional cost per lamp over that of the conventional fluorescent lamps now used.

Other objects of the invention are to provide a triple life fluorescent lamp bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a fluorescent lamp embodying the features of the present invention;

Fig. 2 is an enlarged fragmentary vertical sectional view thereof taken along the line 2—2 of Fig. 1; and

Fig. 3 is a transverse sectional view taken along the line 3—3 of Fig. 2.

Referring now more in detail to the drawing, 10 represents the usual hollow, cylindrical elongated glass tube integrally formed at the opposite ends thereof with the reduced cylindrical end portions 11 on which are mounted the base caps 12 by suitable base cement, in a manner well known to those skilled in the art.

The usual stem press 13 is secured within the cap 12 by suitable base cement and includes the usual exhaust valve 14 which communicates with the central opening 15 in the base cap.

In the practice of my invention, the stem press 13 at the outer end thereof is provided with six equi-angularly spaced conductor sleeves or receptacles 16, the outer ends of which are open and extend through suitable openings provided in the cap 12 and are lined therewith, substantially as illustrated. The sleeves 16 are arranged in oppositely disposed pairs and are adapted to selectively receive therewithin a pair of separable base pins 17 of electrically conductive material for connecting a single pair of such receptacles with the conventional fluorescent light socket, as will be obvious.

A first pair of anodes or conductive wire supports 18 extend inwardly through the stem press 13 and terminate in the oppositely disposed loops 19, the outer ends of the anodes 18 being in electrical contact with the receptacles 16 or more particularly with a pair of such oppositely disposed receptacles. A first cathode 20 of conventional

design is mounted between the loops 19 by means of the end loop portions 21.

A second pair of anodes 22 extend inwardly through the stem press 13 beyond the anodes 18 and terminate in the oppositely disposed loops 23, the outer ends of the anodes 22 being in electrical contact with a second pair of oppositely disposed receptacles 16. A second cathode 24 identical with the cathode 20 is mounted between the loops 23 by means of the end portions or loops 25.

A third pair of anodes 26 extend inwardly through the stem press 13 beyond the anodes 22 and terminate in the oppositely disposed loops 27, the outer ends of the anodes 26 being in electrical contact with the remaining pair of oppositely disposed receptacles 16. A third cathode 28 identical with the cathodes 20 and 24 is mounted between the loops 27 by means of the end loops 29. As shown in Fig. 3, the cathodes 20, 24 and 28 are longitudinally spaced apart and are rotated angularly with respect to each other in equi-angularly spaced relationship.

It will be seen that there are provided three sets of anodes 18, 22 and 26 which support the three cathodes 20, 24 and 28 in three separate electrical circuits, three such cathodes being provided at each end of the lamp. As shown in Fig. 2, the base pins 17 are inserted into the receptacle 17 corresponding to the anodes 18 whereby to complete the circuit of the outermost cathodes 20 only.

In operation, when the first cathode 20 has failed, and the lamp will no longer light, due to the heavy emission coating thereon, the two base pins 17 at each end of the lamp are pulled out and inserted into the next pair of sleeves or receptacles 16, forming a second circuit that will provide an additional 7500 burning hours. When the second cathode 24 fails to light the lamp due to the heavy emission coating, the base pins 17 are again removed and inserted into the third set of sleeves or receptacles 16 to connect the cathode 28 in the circuit and to provide an additional 7500 burning hours or a total of approximately 22,500 total burning hours.

Although in the drawing only two additional cathodes have been shown, it will be readily apparent that three or four or more additional cathodes can be similarly connected with less than a ten percent loss of intensity at the expiration of the 22,500 or more burning hours, this loss being attributed to the use of the existing phosphorescent coating, argon gas and mercury losses during normal burning hours. Each cathode is so located and spaced from the other cathodes that they will not come into contact with each other and cause a short. It will be noted that each cathode is set at a different angle to each other in their fixed position.

The range of burning life of the above fluorescent lamp has been approximated at 22,500 hours. However, the life of a lamp is determined by the number of "starts" or "ons" and "offs," and the range could vary from 22,500 to 52,500 burning hours per lamp, depending on the number of starts during the life of the lamp.

The receptacles 16 are color coated, for example two red, two yellow and two green, in order that the pins 17 may be inserted into the proper receptacles upon readjustment for use of the next cathode.

While various changes may be made in the detail construction, it shall be understood that such charges shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A fluorescent lamp comprising an elongated hollow substantially cylindrical transparent tube, base cap means on opposite ends of said tube and closing the same, stem press means mounted on the inside of each of said base cap means, a plurality of oppositely disposed, angularly spaced, pairs of receptacles of conductive material

mounted in the outer end of said stem press means and opening outwardly through said base cap means, a pair of separable base pins of conductive material adapted to be inserted selectively into a pair of said receptacles for electrical connection with the fluorescent lamp sockets, a plurality of pairs of oppositely disposed anodes extending inwardly through said stem press means, the outer ends of said anodes being in electrical contact with said receptacles each pair of anodes being in connect with a pair of said oppositely disposed receptacles, the inner ends of each pair of said anodes being longitudinally spaced apart, and a cathode mounted between the inner ends of each pair of said anodes whereby to provide a fluorescent lamp of increased life by the removal of said base pins from said first pair of receptacles upon the coating of the first cathode and the insertion of said base pins into a second pair of oppositely disposed receptacles to connect the next cathode in the circuit, three pairs of equi-angularly spaced receptacles being provided, three pairs of equi-angularly spaced anodes being connected to oppositely disposed pairs of said receptacles, said cathodes being longitudinally spaced apart and equi-angularly spaced apart from each other.

2. A fluorescent lamp according to claim 1, the inner ends of said anodes terminating in loop formations which cooperate with loop formations at the ends of said cathodes whereby to mount the cathodes on said anodes.

3. A fluorescent lamp according to claim 1, said receptacles being color coated to facilitate the correct insertion of the base pins into the next pair of receptacles.

4. A fluorescent lamp according to claim 1, said stem press means including a centrally located exhaust valve opening through said base cap means.

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