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2,216,974

BY-PASS FOR LUMINOUS TUBE SYSTEMS

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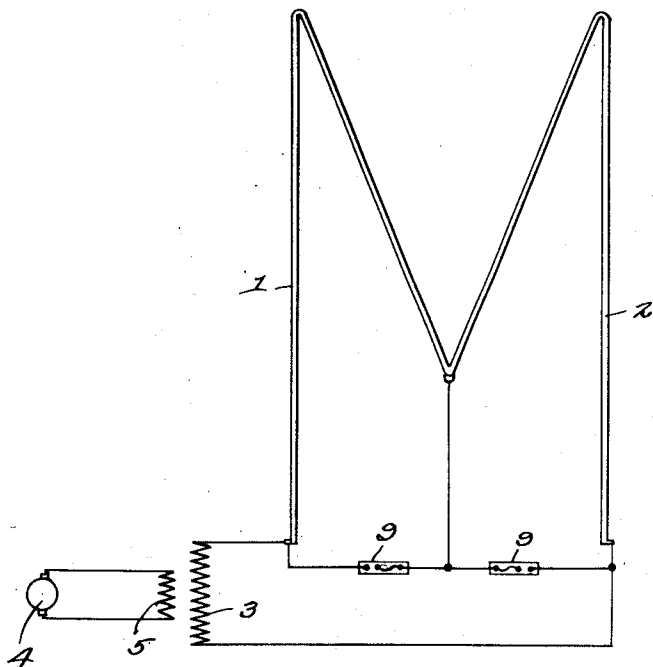


Fig. 1.

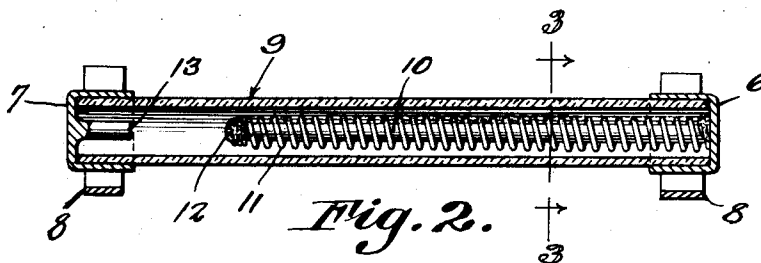


Fig. 2.

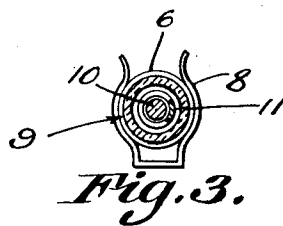


Fig. 3.

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BY-PASS FOR LUMINOUS TUBE SYSTEMS

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1 Claim. (Cl. 200—118)

This invention relates to a by-pass designed primarily for use in connection with neon lamps. Heretofore where a number of lamps such as constitute, for example, a neon sign, have been used, it has been the practice to connect several of the sign elements in series with the result that should a break occur in one of the sections of the series, all of the members of the series are rendered inactive and thereafter considerable difficulty has been experienced in locating the trouble.

I am aware that means have heretofore been devised for overcoming these disadvantages. For example the patent to Wood, No. 1,955,571, shows a by-pass to be positioned in parallel with each of the sign sections. It has been found in practice, however, that a by-pass of the type therein disclosed is expensive to manufacture and does not always operate as efficiently as desired.

An object of the present invention is to provide a by-pass adapted to be located in parallel with each of the sections of the neon sign and, because of its simple construction, can be easily assembled and installed and can be produced at low cost.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing

Figure 1 is a view showing in diagram a circuit in which are located by-passes such as constitute the present invention.

Figure 2 is an enlarged central longitudinal section through the by-pass.

Figure 3 is a section on line 3—3, Figure 2.

Referring to the figures by characters of reference, 1 and 2 designate separate neon sign members or tubes connected in series to the secondary 3 of a high tension transformer including a generator 4 and a primary 5. In the structure illustrated the tubes or lamps 2 are combined to form the letter "M".

A cut-out such as constitutes the present invention is positioned in parallel with each of the tubes or lamps 1 and 2 and, as shown particularly in Figure 2, each of these by-passes includes opposed metal caps 6 and 7 formed of a conducting material each of which is adapted to be detachably seated in firm engagement with a clip 8 constituting a terminal in the secondary circuit. Detachably seated in the two caps 6 and 7 are the ends of a tube 9 formed preferably of glass

and from which the caps can be removed readily. One of these caps has a stem 10 secured at one end to the center thereof and extending longitudinally within the tube 9 for a portion of the length of the tube. A coiled spring 11 is secured at one end to cap 6 and is extended around the stem 10, the free end of this stem being provided with a fusible connection 12 between the spring and the stem so that the spring is held normally under compression.

Extending inwardly from the center of cap 7 is a pin 13 and this is normally spaced from the spring and is at all times spaced from the stem 10 as shown in Figure 2.

The fusible connection indicated at 12 is unaffected by the current when the lamp with which the by-pass is associated is properly functioning. However should a tube or lamp become defective so as to direct the current to stem 10 and pin 13, the generated heat would be sufficient to melt the fusible connection 12. Consequently tensioned spring 11 would be released and would immediately close the gap by coming into contact with cap 7 thereby completing a circuit about the faulty tube or lamp so that none of the other illuminated portions of the apparatus would be put out of service. While this by-pass is especially advantageous when used in connection with neon signs, it also provides a means whereby rooms of a building can be illuminated with neon lights, one by-pass being provided for each light so that when one is put out of service the others will not be affected.

Importance is attached to the fact that the parts of this by-pass can be easily produced and assembled. For example the spring 11 can be placed under tension and put in proper position on the cap 6 and stem 10 and thereafter the stem and spring can be inserted into one end of the tube 9 and the two caps placed in position. These caps can then be snapped into clips 8 or other fastening devices employed for holding the by-pass in circuit.

What is claimed is:

A by-pass for luminous tube systems, including a tubular member of insulating material, a cap removably mounted on each end of said member for engagement with a terminal, a conducting stem and a conducting pin extending into the tube from the respective caps, a spring mounted on the stem and connected at one end thereto, and fusible means on said stem and the other end of the spring for holding the spring normally under compression, said means when melted, constituting means for releasing the spring for positioning about the pin and in engagement with the cap of the pin.

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