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D. W. ATCHLEY, JR
ELECTRIC DISCHARGE LAMP
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2,279,907

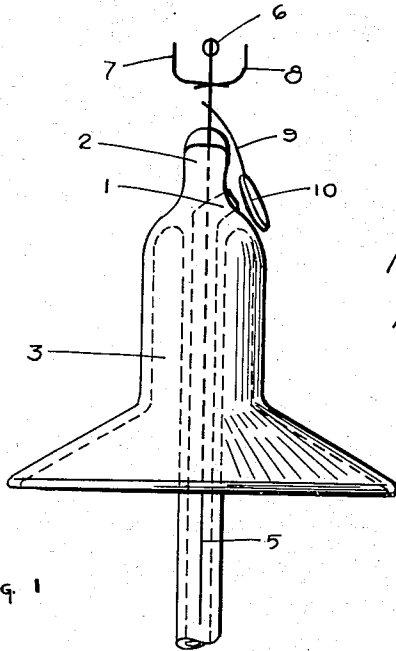


Fig. 1

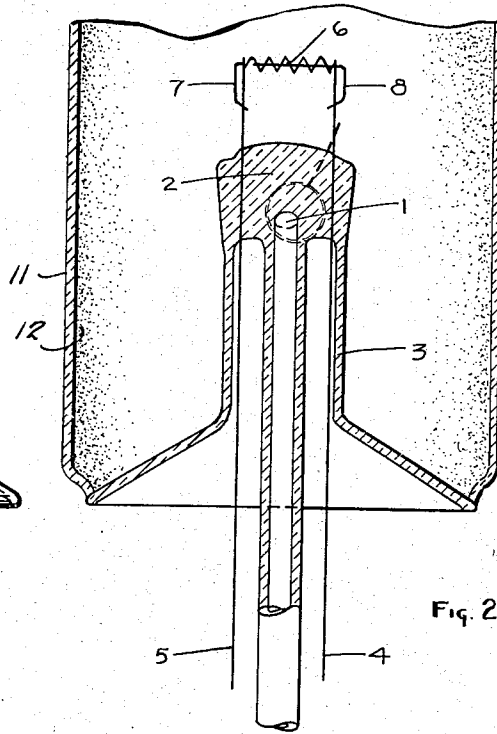


Fig. 2

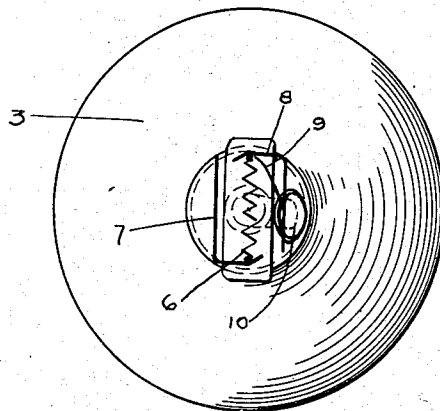


Fig. 3

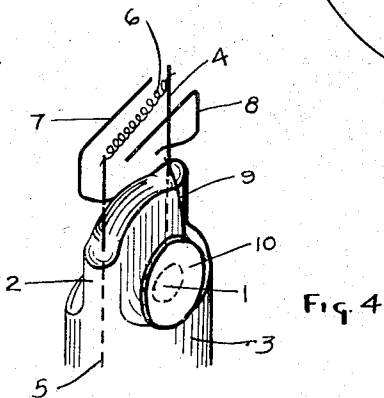


Fig. 4

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ELECTRIC DISCHARGE LAMP

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3 Claims. (Cl. 176-126)

This invention relates to the stems of electric gaseous discharge lamps, and more particularly to the position at which the vent from the exhaust tubing extends out of the press of the stem.

In the manufacture of electric gaseous discharge lamps with a coating of luminescent material on the inner walls thereof, two problems in stem structure have proven to be difficult of solution; one has been the blowing off of the coating of luminescent material from the walls of the lamp due to a sudden pressure change in the lamps, and the other has been the breaking up and contamination of the alkaline earth oxide coating on the filaments due to the location of the electrode in the suction path of the vacuum pump during the exhaust process.

Accordingly, therefore, an object of this invention is to provide a stem structure that will obviate the possibility of the luminescent coating being blown off the inner walls of the lamp.

Another object is to provide a stem structure that will help reduce the contamination and breaking-up of the alkaline earth oxide coating on the filament.

A further object is to provide a stem of a structure such that it may be readily manufactured on a regular incandescent lamp stem machine rather than requiring a special machine for gaseous discharge lamp stems.

Further objects, advantages and features will be apparent from the specification below taken in conjunction with the accompanying drawing in which:

Figure 1 is a side elevational view of the stem assembly.

Figure 2 is a front sectional view of the stem assembly with the stem shield shown dotted.

Figure 3 is a top view of the stem assembly.

Figure 4 is a front perspective view of the stem assembly.

Similar reference characters refer to similar parts throughout the several views of the drawing.

Whether the vent through the press of the stem of a fluorescent lamp be located on the side or on the top of the press, any sudden pressure change in the lamp has often tended to cause the coating to be blown off the walls of the lamp.

Although the top of the stem press would apparently be the most logical position for the vent, it has proven to be quite disadvantageous due to the extensive exhausting process that is normally employed. When the vent is located on top of the press it is then in a direct line with the alkaline earth oxide coated filament.

Since the lamps are heated to a high temperature, as well as flushed several times, during the exhausting process, the many impurities drawn off thereby are drawn across the coated filament located in the exhaust path to the exhaust tubing. Contamination of the coated electrode is the result. Lower emission and shorter life are but two of the disadvantages that thereby accrue to the filament.

In view of these difficulties and disadvantages, I have devised a stem structure that eliminates these undesirable conditions. The vent 1 through the press 2, in the stem 3, is blown through the side of the press as is done in standard incandescent lamp manufacture. On the lead-in wires 4 and 5, are mounted the oxide coated filament 6 and the auxiliary electrodes 7 and 8. To one of the lead-in wires, for example 4, is attached the metal arm 9 of nickel, for example. To the arm 9 is attached the shield 10 of nickel or some similar metal. In a stem structure of this type, any excessive pressure change in the lamp 11 will not blow the coating 12, of luminescent material off the walls of the lamp because the shield will be located between the vent and the walls of the lamp.

With the vent 1, located on the side of the press 2 instead of on the top, the oxide coated filament 6 is no longer in the direct exhausting line. Thus the contamination of the oxide coated filament due to the several flushing operations in the exhausting process is obviated and higher emission and longer life for the filament results.

With the vent located on the side of the press and the shield located between the vent and the walls of the lamp, mercury condensation on the walls, due to the path through which the mercury travels into the lamp, is obviated. Since a small quantity of mercury is introduced into the lamp after it is exhausted and before it is tipped off, the mercury often strikes the walls of the lamp when it drops down from the vent in the stem. Since the lamp is still hot from the exhaust oven when the mercury is introduced, mercury condensation on the walls of the lamp very often takes place. This discoloration has a very undesirable effect on the appearance of the lamp and should be avoided. The shield in my invention deflects the mercury away from the walls of the lamp as it comes out of the vent in the stem and directs it downward to the opposite end of the lamp.

What I claim is:

1. In a stem for electric gaseous discharge

lamps having a coating of luminescent material therein and a vent in the side of the stem: lead-wires projecting through the top of said stem, an arm attached to and extending from one of said lead wires, and a shield attached to the end of said arm and located near and in line with said vent, said shield protecting the luminescent coating on the walls of the lamp from the vent discharge.

2. In a stem for electric gaseous discharge lamps having a coating of luminescent material therein, said stem having a vent in the side thereof: lead-in wires projecting through the top of said stem, an arm attached to and extending

from one of said lead-in wires, and a shield attached to the end of said arm in line with and spaced from said vent, said shield protecting the luminescent coating on the walls of the lamp from the vent discharge.

3. An electric gaseous discharge lamp comprising: a tubular envelope; a coating of fluorescent material on the inside of said tubular envelope; a stem for closing an end of said envelope, said stem having a vent in the side thereof; and a shield located between said vent and said coating of fluorescent material, said shield protecting said coating from the vent-discharge.

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