

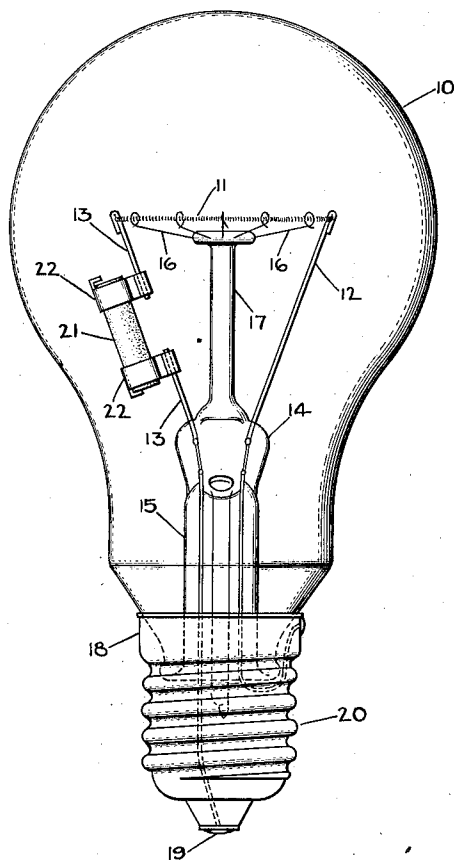
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INCANDESCENT ELECTRIC LAMP

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UNITED STATES PATENT OFFICE

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INCANDESCENT ELECTRIC LAMP

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2 Claims. (Cl. 176—16)

My invention relates to incandescent electric lamps, and more particularly to incandescent lamps having a resistance in series with the filament.

It has heretofore been proposed to connect a resistance in series with the filament of an incandescent lamp in order to minimize the surge of current which occurs when the circuit is closed and thereby prevent destruction of the filament. Such a resistance is particularly useful with incandescent lamps used for projection and photographic purposes which are normally operated at a high over-load.

One of the objects of the present invention is to provide a resistance of a special type which will increase and make more uniform the life of such incandescent lamps. According to my invention, the lamp is provided with a resistance in series with the filament which is conductive at ordinary temperatures and has a high negative temperature-resistance coefficient, preferably considerably higher than that of carbon.

Further features and advantages of my invention will appear from the following description of species thereof and from the drawing.

The drawing is an elevation of an incandescent lamp comprising my invention. The lamp comprises a bulb 10 which is preferably filled with an inert gas such as argon or nitrogen or a mixture thereof. The said bulb 10 contains a filament 11, preferably of tungsten which has a positive temperature-resistance coefficient. The filament 11 is connected to lead wires 12, 13, portions of which are sealed in the press portion 14 of a stem tube 15. The said filament 11 is supported by wires 16, the ends of which are embedded in the end of an arbor 17 extending from the stem press 14. The lead wires 12, 13 are electrically

connected to the shell 18 and end contact 19 respectively, of a base 20. A short cylindrical resistance body 21 is inserted in the lead wire 13 in series with the filament 11, being supported by a pair of suitable clamps 22.

The resistance body 21 consists of an oxide which is conductive at ordinary temperatures and has a high negative temperature-resistance coefficient, such as a body of uranium dioxide. Such a resistance body not only prevents the initial surge of current through the filament 11 when the circuit is closed, but because of its character and because it is placed in the bulb 10 which is filled with inert gas, it assures values of resistance which are always substantially the same, thereby resulting in a long and uniform lamp life. Other oxides are also suitable for the resistance body providing they have sufficient conductivity at ordinary room temperatures and their resistance remains the same over a wide range of voltages.

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

1. An incandescent electric lamp comprising a bulb containing a filament having a positive temperature-resistance coefficient and also containing a resistance electrically connected in series with said filament, said resistance consisting of an oxide which is conductive at ordinary temperatures and has a high negative temperature-resistance coefficient.
2. An incandescent electric lamp comprising a bulb containing a filament having a positive temperature-resistance coefficient and also containing a resistance body of uranium dioxide electrically connected in series with said filament.

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