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GLOW-DISCHARGE DIGIT LAMP

Filed May 29, 1961

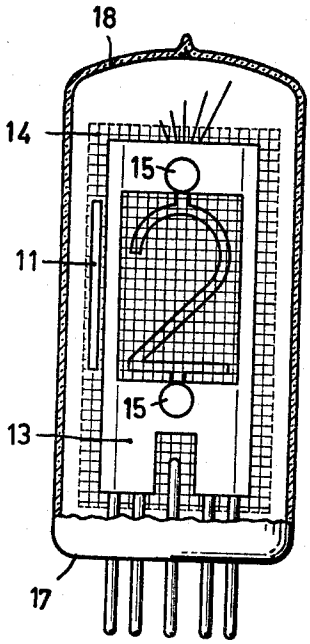


FIG.1

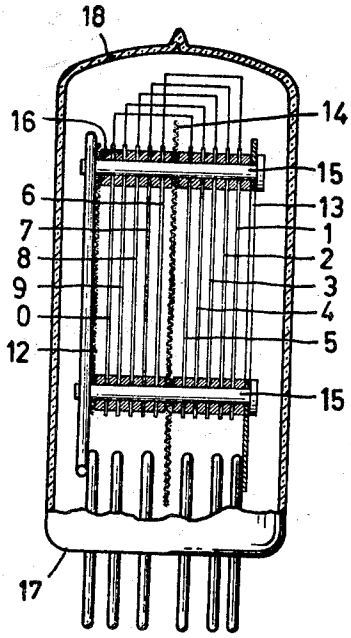


FIG.2

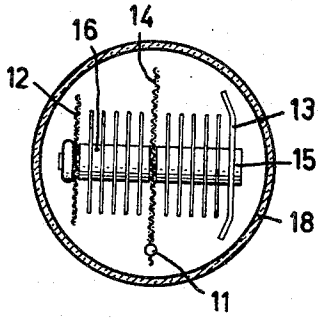


FIG.3

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GLOW-DISCHARGE DIGIT LAMP

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4 Claims. (Cl. 313—109.5)

The invention relates to a glow-discharge digit lamp in which ten cathode digits are arranged behind each other in parallel planes in two groups of five between which a screen is arranged, an anode being associated with each group of five and each individual digit of one group being connected with a digit of the other group.

The above-mentioned lamps are already known and the advantage is that with only eight supply pins one out of ten digits may be made visible at will, since two pins are required for the anodes, one pin for the screen and five pins for the five times two digits. In the known lamps, the cathode digits are arranged parallel to the bottom of the lamp. This entails fairly long connections between digits and supply pins.

For various applications, it is desirable to reproduce numbers up to about 20 with the aid of a digit lamp. However, the application of two digit lamps arranged side by side is fairly expensive, whilst moreover too much space would be occupied in the apparatus.

The invention has for its object to provide a simple construction which solves the problem concerned in a simpler manner.

In a glow-discharge digit lamp in which ten cathode digits are arranged behind each other in parallel planes in two groups of five between which a screen is arranged, an anode being associated with each group of five and each individual digit of one group being connected with a digit of the other group, according to the invention, the assembly of electrodes is arranged parallel to the axis of the lamp, the screen substantially passing through the axis of the lamp and having a larger extent than the remaining electrodes, whilst a cathode digit in the form of a 1 is arranged at the side of this screen or in an elongated aperture of the latter so that, when this 1 and one of the remaining ten digits luminesce, the numbers of from 10 to 19 may be reproduced.

An additional supply pin is required for the additional digit, but lamp sockets with nine pins are very commonly used. Therefore, the requirement to reproduce the digits of from 0 to 19 may be satisfied in a simple manner. This additional digit is arranged so that it is adapted to luminesce both when the first and when the second electrode is switched on. The connections between the supply pins and the digits may be short and the volume of the lamp is utilized satisfactorily. An application of this lamp is, for example, the indication of the channel switched on in a television receiver.

The invention will now be described more fully with reference to the accompanying drawing in which

FIG. 1 is an elevation of a partly developed bulb of a lamp according to the invention,

FIG. 2 is a section parallel to the axis and at right angles to the elevation of FIG. 1, and

FIG. 3 is a section at right angles to the axis of the lamp.

In the figures, the cathode digits are designated by 1 to 10. Together with the anodes 12, the first of which

is partly grid-shaped, the digits are stacked on enamel-coated pins 15 by means of ceramic spacers 16. The screen is designated by 14. In an aperture in the screen, an additional cathode digit 11 is arranged which has the form of a 1. The bottom of the lamp is denoted by 17 and the bulb by 18. As is common practice in biquinary lamps, the screen voltage is half the anode voltage. The digits are pairwise connected with each other on the upper side.

What is claimed is:

1. A glow-discharge indicator tube comprising a gas-filled envelope having a transparent window, a stack of character-shaped cathode electrodes arranged in at least two groups, an anode associated with each group of cathodes whereby with a potential applied between a cathode of one group and the anode associated therewith a glow discharge appears at said cathode, and a separate character-shaped cathode electrode spaced from said stack and being positioned in glow-discharge relationship with the anode associated with each stack whereby with a potential applied thereto said cathode can glow.

2. A glow-discharge indicator tube comprising a gas-filled envelope having a transparent window, a stack of character-shaped cathode electrodes arranged in two groups of five cathodes, an anode associated with each group of cathodes whereby with a potential applied between a cathode of one group and the anode associated therewith a glow-discharge appears at said cathode, and a separate character-shaped cathode electrode spaced from said stack and positioned in glow-discharge relationship with the anode associated with each stack whereby with a potential applied thereto said cathode can glow.

3. A glow-discharge indicator tube comprising a gas-filled envelope having a transparent window, a stack of character-shaped cathode electrodes arranged in two groups of five cathodes, a screen electrode between the two groups of electrodes, an anode associated with each group of cathodes whereby with a potential applied between a cathode of one group and its associated anode a glow-discharge appears at said cathode, and a separate character-shaped cathode electrode spaced from said stack and in the plane of said screen and in glow-discharge relationship with the anode associated with each stack whereby with a potential applied thereto said cathode can glow.

4. A glow-discharge indicator tube comprising a gas-filled envelope having a transparent window, a stack of character-shaped cathode electrodes arranged in two groups of five cathodes each, a screen electrode separating said groups in said stack, each cathode of one group being connected to one cathode of the other group, an anode associated with each group whereby with a potential applied between a cathode of one group and the anode associated therewith a glow-discharge appears at said cathode, and a separate character-shaped cathode electrode spaced from said stack and in the plane of said screen and in glow-discharge relationship with the anode associated with each stack whereby with a potential applied thereto said cathode can glow.

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