Nov. 12, 1935. G. GAIDIES 2,020,726

GASEOUS ELECTRIC DISCHARGE DEVICE

Filed Sept. 26, 1933

Fig. 1

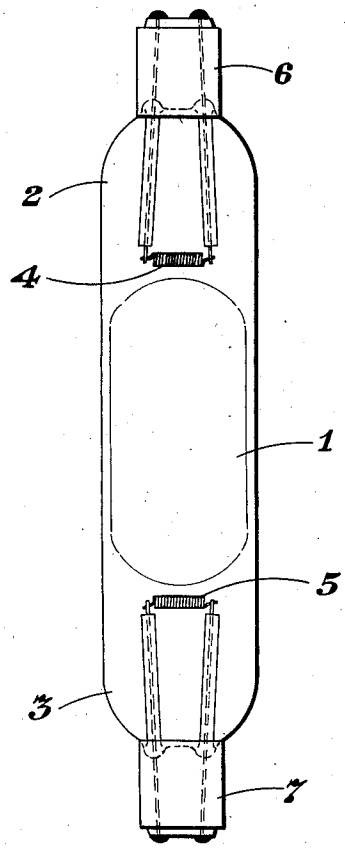
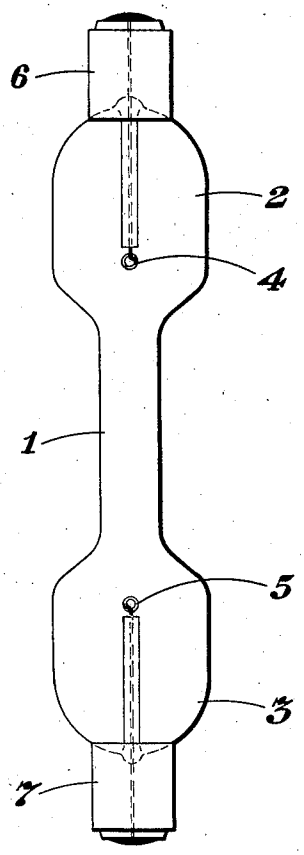


Fig. 2



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GASEOUS ELECTRIC DISCHARGE DEVICE

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Application September 26, 1933, Serial No. 691,056
In Germany October 1, 1932

2 Claims. (Cl. 176—122)

The present invention relates to gaseous electric discharge devices generally and more particularly the invention relates to such devices useful in the art generally and particularly as beacons or the like.

The object of the present invention is to provide a high intensity light source. A further object of the invention is to provide a gaseous electric discharge device wherein a discharge of low current density is a high intensity light source. Still further objects and advantages attaching to the device and to its use and operation will be apparent to those skilled in the art from the following particular description.

In accordance with these objects the invention comprises a gaseous electric discharge device the container of which has a flattened mid-portion and which device comprises thermionic electrodes at each end thereof and a gaseous atmosphere comprising a metal vapor, such as sodium vapor, in said container. The thermionic electrodes, the sodium vapor and the flattened portion of the container, which sends out a greater proportion of the emitted light in a direction normal to the plane of the greater axes of cross-section of the flattened portion, cooperate so that the device is a high intensity light source of large area.

In the drawing accompanying and forming part of the specification an embodiment of the invention is illustrated in which

Fig. 1 is a front elevational view, and

Fig. 2 is a side elevational view.

Referring to the drawing the new and novel gaseous electric discharge device comprises a container having a flattened mid-portion 1 and two cylindrically shaped end parts 2 and 3. Electrodes 4 and 5 are sealed into said parts 2 and 3 respectively. Said electrodes 4 and 5 consist of a coiled metal filament, such as a tungsten filament, covered with an electron emitting material, such as barium oxide and is electron emitting when heated. The current leads for said electrodes 4 and 5 are connected to contacts on the bases 6 and 7 respectively attached to the container of said device.

The container has a gaseous filling therein comprising a starting gas, such as neon or argon, and a metal vapor, such as sodium vapor. The gaseous electric discharge between said electrodes 4 and 5 first takes place in the gas. The heat of the discharge vaporizes the sodium, which is solid at room temperature, and the sodium vapor participates in the discharge during the operation of the device. The light emitted by the gaseous electric discharge device during the operation thereof is rich in yellow radiations characteristic of the sodium vapor. The luminous discharge is evenly distributed in the flattened portion during the operation of the device.

The thermionic electrodes 4 and 5, the sodium vapor and the flattened part 1 of the container, which part sends out a large proportion of the light emitted by the gaseous electric discharge in a direction normal to the plane of the greater axes of cross-section of the flattened portion, cooperate to make the device a high intensity light source of large area useful in beacon work or the like.

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

1. A gaseous electric discharge lamp device comprising a container, thermionic electrodes sealed therein, a gaseous atmosphere therein comprising sodium vapor, said container having a flattened mid-portion to direct a large proportion of the light emitted by the gaseous electric discharge between said electrodes in a direction normal to the plane of the greater axes of cross-section of the flattened portion of said container whereby an evenly distributed, high intensity light field of large area is emitted.

2. A gaseous electric discharge lamp device comprising a container, thermionic electrodes sealed therein, a gaseous atmosphere therein comprising a starting gas and sodium vapor, said container having a flattened mid-portion to direct a large proportion of the light emitted by the gaseous electric discharge between said electrodes in a direction normal to the plane of the greater axes of cross-section of the flattened portion of said container whereby an evenly distributed, high intensity light field of large area is emitted.

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