

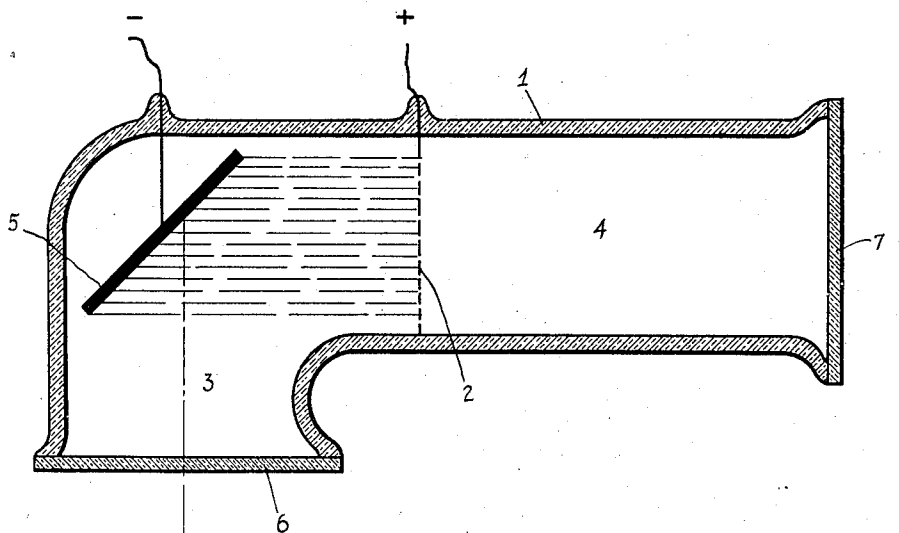
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LIGHT AMPLIFIER

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LIGHT AMPLIFIER

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For some purposes such as television there exists a demand for ways and means adapted to change directly feeble luminous impressions into strong light actions. The present invention is intended to serve the said purpose.

The principal aims and objects of the present invention are diagrammatically illustrated by the single figure of the attached drawing.

As shown by the drawing, illustrating a preferred embodiment of the invention, a glass vessel 1 is subdivided by the electron-permeable partition 2 into the two chambers 3 and 4 one of which, say, chamber 3, is exhausted to very low pressure, that is, to a high vacuum, whereas the other chamber 4, for example, contains a gas subject to a low pressure.

The high-vacuum chamber contains a photoelectric cathode 5 to which is imparted a high negative potential in reference to the partition wall 2. If the photo-electric coat is feebly irradiated across the window 6 then the electrons issuing from the cathode 5, under the influence of the strong electrical field, undergo high acceleration whereby they are rendered capable of traveling through the partition 2 and of causing ionization in space or chamber 4 of the gas and thereby luminescence thereof. In the presence of an adequately high accelerative potential a larger volume of light will emerge through window 7 than had entered into the apparatus by way of the input window 6.

Having now described my invention, what I

claim and desire to secure by Letters Patent is the following:

1. A light amplifier system which comprises an envelope divided into a pair of chambers one of said chambers being a high vacuum chamber and the other of said chambers being a gas filled chamber, an electron permeable partition separating said chambers, a photoelectric element positioned in the chamber subjected to a high vacuum, and a voltage source for producing within the tube an electrical field to cause a flow of electrons from the high vacuum chamber to the gas filled chamber to cause the gaseous filling thereof to become ionized upon the passage of photoelectrons through said electron permeable partition whereby a magnified effect of the light initiating the photoelectron stream is obtained in said gas filled chamber.

2. A light amplifier which comprises an envelope divided into a plurality of separated chambers, a photoelectrically responsive electrode element in the first of said chambers, an electron permeable partition separating said chambers one from the other, a gaseous filling contained within the second of said chambers, and a voltage source connected between the electron permeable and the photoelectrically responsive electrode to cause the photoelectrons to pass from the first chamber into the gas filled chamber so that the gaseous content thereof is ionized upon the passage of photoelectrons through said medium.

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