

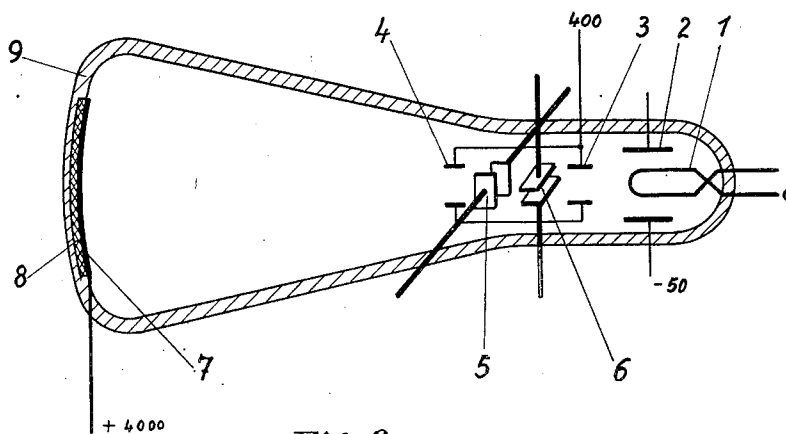
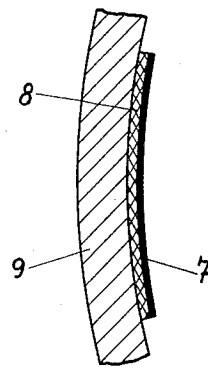
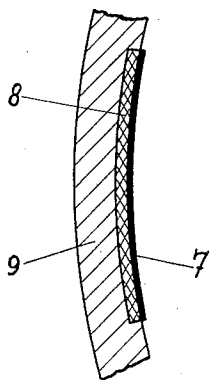
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BRAUN TUBE

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BRAUN TUBE

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5 Claims. (Cl. 250—27.5)

The present invention relates to Braun tubes having a fluorescent picture receiving screen.

Braun tubes are known wherein the fluorescent screen is made conductive and is used as an anode or is earthed for the purpose of avoiding an accumulation of negative wall charges.

In these known Braun tubes there is arranged a thin metallic layer between the glass wall and the fluorescent layer. This metallic layer causes considerable losses of light produced by the cathode ray on the fluorescent substance.

Further, these known Braun tubes possess the disadvantage that the fluorescent substance may easily be burnt out in the case that the cathode ray is directed for a longer time on to the same point of the fluorescent screen.

One object of the present invention is to provide a Braun tube which allows of a more full utilization of the light produced in the fluorescent layer.

A further object of the invention is a Braun tube wherein a burning out of the fluorescent layer cannot occur.

Still further objects of the invention will be seen from the following description.

According to the invention, there is employed as luminous screen any desired luminous substance of a known kind, which substance is connected with the glass of the bulb in the manner known per se by sintering in or by attaching said substance by means of water-glass preferably potassium water glass or the like, and is then furnished with an extremely thin, coherent metal coating. The thickness of this metal coating should be such that the same offers the least possible resistance to the electrons (i. e., is as thin as possible), but on the other hand represents a homogeneous, coherent reflectory surface. By means of this reflectory coating it is accomplished that the whole of the light produced in the fluorescent layer by the cathode ray is radiated towards the front i. e., towards the spectator. The loss of intensity which is caused upon the passage of the electrons through the metal coating is relatively small, and the effective radiating power of the tube is in this manner ceteris paribus practically doubled by the reflectory effect of the metallic coating. The metal coating may consist of any desired metal having highly reflectory properties, such as copper, silver or tin, and may be deposited on the layer of fluorescent material by any desired process of the known kind. Preferably there is employed a thin silver reflector, which is produced on the finished layer (i. e., the fluorescent layer already firmly

connected with the glass wall of the tube by sintering, adhesives or the like) by means of a chemical process of the kind known per se (reduction of a suitable watery silver salt solution); processes of this kind being described in nearly each manual of chemistry, a full description of the particulars of said well known processes cannot be looked at as necessary. Naturally there may also be employed for the purpose of production any other known suitable method. However, thin coatings of the requisite properties may be produced in the most simple fashion with the use of the chemical process referred to in the above.

The metallic coating of the invention may be employed as one anode of the tube.

In Figs. 1 and 2 there are shown two embodiments of the fluorescent screen according to the invention, while Fig. 3 shows by way of example one form of embodiment of a Braun tube having a fluorescent screen according to the invention.

Fig. 1 shows an arrangement in which the luminous substance is sintered into the glass wall. In the arrangement according to Fig. 2 the fluorescent layer is connected with the glass, for example by cementing. In the drawing 7 is the reflectory metal coating, 8 the fluorescent coating, and 9 the glass-wall of the Braun tube.

In Fig. 3, 1 is a thermionic cathode, 2 a Wehnelt cylinder, 3 and 4 two anodes of equal potential, between which there are situated the pairs of deflecting plates 5 and 6, 7 the metallic reflector which is raised to a considerably higher potential and acts as third anode, 8 the luminous coating, and 9 the wall of the tube.

Naturally, it is also possible to use only one or two anodes respectively.

The luminous screen according to the invention, furnished with a metallic coating, is extremely insensitive to heat, provides a considerably greater intensity of light, and will endure for a much greater length of time than the known screens.

I claim:

1. A Braun tube for reproducing purposes comprising an envelope, a cathode and an anode mounted in operative relationship thereto, means for deflecting the cathode ray, a layer of a fluorescent substance mounted at one end of said envelope, and a thin, homogeneous, coherent, metallic coating mounted on the side of the fluorescent layer facing said cathode.

2. A Braun tube for reproducing purposes comprising an envelope, a cathode and an anode

mounted in operative relationship thereto, means for deflecting the cathode ray, a layer of a fluorescent substance mounted at one end of said envelope, and a thin, homogeneous coherent, metallic coating of highly reflectory properties mounted on the side of the fluorescent layer facing said cathode.

3. A Braun tube for reproducing purposes comprising an envelope, a cathode and an anode mounted in operative relationship thereto, means for deflecting the cathode ray, a layer of a fluorescent substance mounted at one end of said envelope, and a thin, homogeneous, coherent, metallic coating permeable to electrons and of highly reflectory properties mounted on the side of fluorescent layer facing said cathode.

4. A Braun tube for reproducing purposes comprising an envelope, a cathode and an anode mounted in operative relationship thereto, means for concentrating the cathode ray, means for controlling the cathode ray, means for deflecting

the cathode ray, a layer of a fluorescent substance mounted at one end of said envelope, and a thin, homogeneous, coherent, metallic coating permeable to electrons and of highly reflectory properties mounted on the side of the fluorescent layer facing said cathode.

5. A Braun tube for reproducing purposes comprising an envelope, a cathode and an anode mounted in operative relationship thereto, means for concentrating the cathode ray, means for controlling the cathode ray, means for deflecting the cathode ray, a layer of a fluorescent substance mounted on the bottom of said envelope, and a thin, homogeneous, coherent, metallic coating permeable to electrons and of highly reflectory properties mounted on the side of the fluorescent layer facing said cathode said metallic coating being adapted to be connected with a high positive potential.

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