

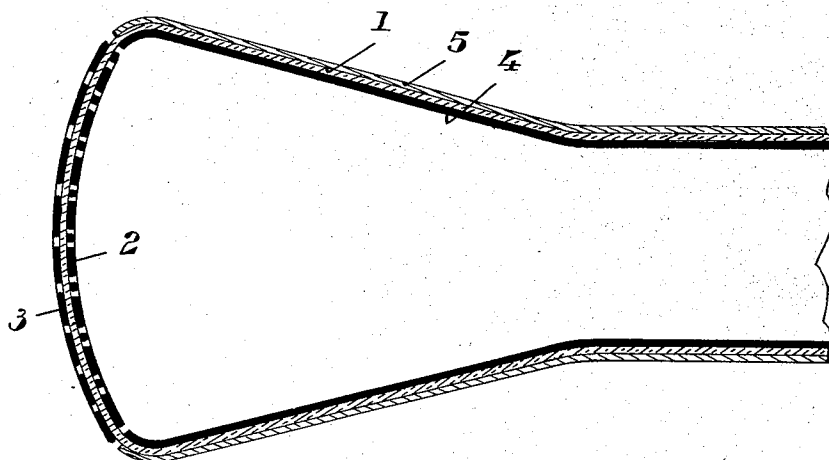
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M. VON ARDENNE

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BRAUN TUBE FOR PRODUCING TELEVISION IMAGES RICH IN CONTRAST

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Inventor:

Manfred von Ardenne

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BRAUN TUBE FOR PRODUCING TELEVISION
IMAGES RICH IN CONTRAST

Manfred von Ardenne, Berlin, Germany

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8 Claims. (Cl. 250—27.5)

This invention relates to envelopes for Braun tubes for producing television images rich in contrast.

Experiments have shown that the maximum range of contrast which is capable of being obtained with Braun tubes having envelopes of the known kind is considerably limited by the purely optical nature of these envelopes. There occurs on the inner wall of the bulb in the case of these tubes a multiple reflection of the fluorescent light, which results in the fact that a certain proportion again passes to the fluorescent screen in the form of secondary light. This effect is apparent to a particularly high degree in connection with tubes the envelopes of which are metal-coated on the exterior, as in these there is a practically complete reflection of the light. The deficiency in question is particularly disturbing in the case of large extent of movement of the beam of light and large fluorescent screens, and more particularly also in the case of tubes having bulbs with wide angle of opening.

The object of the invention is an envelope for Braun tubes the entire wall of which, with the exception of the fluorescent screen, is constructed in such fashion that a reflection is unable to take place at the same in the interior of the bulb.

It is possible for this purpose to blacken the inside of the wall of the bulb, for example by spraying on graphite or finely divided soot. A coating of this nature has been found to be adequately vacuum-proof, and is relatively simple to produce, as the application and the subsequent drying requires only a very short time.

Practically the same effect may be obtained if the darkening layer is applied to the outside of the envelope, for example in the form of an intermediate layer between the wall of the envelope and the metallic coating. In this manner the application of the metallic coating is at the same time considerably facilitated, as the same adheres to the layer of carbon much more readily and to a much better degree than to the glass wall.

It is also possible to employ envelopes, which are made opaque, more particularly on the inside. The opacity as such considerably diminishes the power of reflection of the envelope wall, and improves the adhesion of the light-absorbing layer which may possibly be applied.

Naturally it is also possible, in place of graphite or carbon, to employ other suitable light-absorbing substances.

The matting operation, however, is preferably performed, not with a sand blast, but by the use

of one of the known chemical matting processes. To avoid the so-called halo effect frequently observed in the case of Braun tubes and based on similar causes to the halo effect occurring in connection with photographic plates, it is possible in accordance with the invention to apply to the outside of the bottom portions of the envelope—to the inside of which there is secured the luminous screen—a coating composed of a substance, the refractive index of which is greater than the index of refraction of the glass. This coating with preference may be weakly colored.

In the drawing a form of embodiment of the invention is illustrated by way of example. In the same 1 is the envelope having a neck portion, a bulb portion and a bottom portion, the bottom portion having the luminous coating 2, a layer composed of light-absorbent material, for example graphite or carbon 4, and the outer metallic coating 5. On the outside of the bottom portion there may be provided an additional coating 3 of suitable thickness consisting of a material, the refractive index of which is greater than the index of refraction of the glass of the bulb.

The measure according to the invention prevents the formation of secondary light by reflection within the tube, and accordingly permits of the production of images rich in contrast.

I claim:

1. An envelope for Braun tubes comprising a neck portion, a bulb portion and a bottom portion, all of said portions being combined to form one structural unit, said neck and said bulb portion each consisting of matted, dark glass, said bottom being substantially transparent and being provided at its side facing the inside of said envelope with a luminescent coating.

2. An envelope for Braun tubes comprising a neck portion, a bulb portion and a bottom, said neck and said bulb portion each having at the inside a surface of highly light absorbing properties and each being furnished at the outside with a metallic coating, said bottom being substantially transparent and being provided at its side facing the inside of said envelope with a layer of a luminescent substance.

3. An envelope for Braun tubes comprising a neck portion, a bulb portion, and a bottom portion, all of said portions being combined to form one structural unit, said bottom being provided at its side facing the inside of the envelope with a layer of a luminescent substance, said bottom being substantially transparent and being furnished at its outside with a coating of a substantially transparent material, the refractive index

of which is greater than the index of refraction of the glass of which said bottom consists.

4. An envelope for Braun tubes comprising a neck portion, a bulb portion, and a bottom portion, all of said portions being combined to form one structural unit, said bottom being provided at its side facing the inside of the envelope with a layer of a luminescent substance, said bottom being substantially transparent and being furnished at its outside with a coating of a substantially transparent material, the refractive index of which is greater than the index of refraction of the glass of which said bottom consists, the material of which the last mentioned coating consists being slightly coloured.

5. An envelope for Braun tubes comprising a neck portion, a bulb portion, and a bottom portion, each of said portions consisting of glass, all of said portions being combined to form one structural unit, said neck and said bulb portion each having at the inside a coating of highly light absorbing properties, said bottom being provided at its side facing the inside of the envelope with a layer of a luminescent substance, said bottom being substantially transparent and being furnished at its outside with a coating of a substantially transparent material, the refractive index of which is greater than the index of refraction of the glass of which said bottom consists.

6. An envelope for Braun tubes comprising a

neck portion, a bulb portion, and a bottom portion, all of said portions being combined to form one structural unit, said neck and said bulb portion each consisting of matted, dark glass, said bottom being provided at its side facing the inside of the envelope with a layer of a luminescent substance, said bottom being substantially transparent and being furnished at its outside with a coating of a substantially transparent material, the refractive index of which is greater than the index of refraction of the glass of which said bottom consists.

7. An envelope for Braun tubes comprising a neck portion, a bulb portion, and a bottom, said neck and said bulb portion each having at the outside a non-metallic coating of highly light absorbing properties, said bottom being substantially transparent and being provided at its side facing the inside of said envelope with a layer of a luminescent substance.

8. An envelope for Braun tubes comprising a neck portion, a bulb portion, and a bottom, a non-metallic coating of highly light absorbing properties on the outsides of both said neck and said bulb portions, a metallic coating on said coating of highly light absorbing properties, said bottom being substantially transparent and being provided at its side facing the inside of said envelope with a layer of a luminescent substance.

MANFRED VON ARDENNE.