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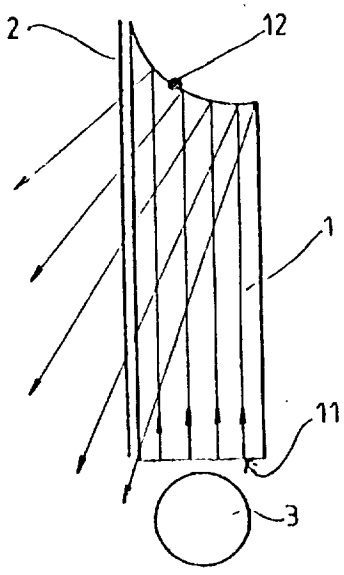
(57) Abrégé :

a) Display and indicating panel.

b) Panel characterized in that the edge face (12, 121, 122, 122') of the sheet (1) forming the display surface (2), opposite that (11) equipped with the light source (3, 3'), includes a reflective surface which is not perpendicular to the display surface.



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"Display and indicating panel"

The present invention relates to a display and indicating panel, especially an advertising display panel or a road sign, formed by a transparent sheet illuminated via the edge face using a distributed light source.

Such a display panel is already known, especially a panel equipped with an independent power supply, like the panel described in document FR 91/06459. This display panel is very useful for receiving information or displays on the rear face of the transparent sheet. In this case, the information is very bright and perfectly legible. On the other hand, all information applied to the front face of the transparent sheet is not very legible except by contrast (for example letters or numbers). Moreover, a drawing will only be barely visible.

However, in a few cases, and for various reasons, the display cannot be made on the back of the transparent sheet and is thus on its front face. The object of the present invention is to create a display panel, of the type defined above, making it possible to receive the displays or information on its front face, while still exhibiting excellent illumination characteristics of these displays and information.

For this purpose, the invention relates to a display or indicating panel corresponding to the type defined above, characterized in that the edge face of the sheet forming the display surface opposite that equipped with the light source includes a reflective surface which is not perpendicular to the display surface.

The display panel according to the invention is of a particularly simple construction. It may be a display and indicating panel in which the light source is supplied either from the electric mains or from an independent power supply included with it.

Depending on the shape of the cross-section of the reflective surface forming the edge face of the panel opposite the light source, there will be a uniform

distribution of the light or a distribution modulated according to the effects to be produced.

According to other advantageous characteristics of the invention:

- the reflective surface is an inclined plane surface;
- the inclined surface goes virtually from one edge of the panel to the other;
- the reflective surface is a curved surface.

According to the principle mentioned above, it is also possible to produce a two-sided display and indicating panel formed by two transparent sheets in which in both cases the edge opposite the distributed light source is a reflective surface. In general, this reflective surface is an oblique surface going from one edge of the panel to the opposite edge.

Depending on the information displayed, for reasons of aesthetics or for integration in a location, the display panel can have a rectangular, square or polygonal shape, with a distributed light source on at least two sides or a light source distributed in a mixed manner over portions of a side.

The present invention will be described below in a more detailed manner with the help of the appended drawings in which:

- Figures 1, 2, 3 are diagrammatic sectional views of three examples of display and indicating panels according to the invention;
- Figure 4 is a more detailed view of an example of a display panel adopting the principle of the example of Figure 1 with an independent power supply.

According to the very diagrammatic section of Figure 1, the invention relates to a display and indicating panel, such as an advertising display panel, a road sign or a street information panel, for which only the transparent sheet 1 has been shown. This transparent sheet 1 carries on its front face the surface 2 to be displayed. This is, for example, a poster, a street map,

etc.

At the bottom part in the drawing is the light source 3 which illuminates the edge face 11 of the sheet. By definition, this edge face 11 is a surface perpendicular to the large faces of the sheet (and thus of the panel), especially the face which receives the poster or the information 2. The other edge face 12, opposite the edge face 11, has, in cross-section, the shape of a curve whose tangent at any point is not perpendicular to the large face of the transparent sheet. In the case shown, this is a concave curve which reflects the rays emitted by the light source, along the arrows indicated, to the display surface 2. Depending on the shape of the curve of the surface 12, there will be either a uniform or a non-uniform distribution of the reflected rays, according to the lighting effects to be obtained.

Figure 2 shows another embodiment example of the invention. In this figure, as in Figure 3 and the following figures, the same references as in Figure 1 have been used to designate the same elements.

In the second embodiment example, the edge face 121 opposite the edge face 11 of the sheet 1 is a plane and inclined surface which reflects the rays, as is depicted by the lines and arrows, through the display surface 2 which is, as previously, the front face of the transparent sheet 1.

The example of Figure 3 corresponds to an extreme case of the one in Figure 2, with a head-to-tail arrangement of two sheets 1, 1' like the one in Figure 2.

The edge face of the panel 1 opposite the edge face 11 via which the distributed light source 3 injects light into the sheet 1 extends from the "upper" edge of the sheet 1 right to its "lower" edge so that the sheet 1 has, in cross-section, a triangular shape. This reflective surface 122 reflects the incident light rays delivered by the light source 3, along the arrows indicated, through the display surface 2.

The same applies for the other sheet 1' placed head to tail. This other sheet 1' also includes a

reflective surface 122' forming, in fact, the arris of the sheet opposite the arris 11' via which the light emitted by the distributed light source 3' penetrates. The light rays are sent through the display surface 2', as indicated. This arrangement of Figure 3 makes it possible to produce a very thin double-sided display panel.

In the various drawings of Figures 1 to 3, according to a common convention, the panels are cut vertically and the light source 3 is placed in the region of the lower arris of the sheet, assumed to be rectangular or square. However, it is possible also to illuminate the sheet via one of its vertical edge faces without thereby modifying in any way the characteristics of the invention.

Figure 4 shows the application of the general sheet of Figure 1 in the embodiment of a display and/or indicating panel with an independent power supply. This display panel 100, the display surface 102 of which is on the front face of the transparent sheet 101, is illuminated by a light source 6 placed in the base of the sheet against its edge face 111. This light source is, for example, a linear array of photodiodes. This light source 6 is powered from a battery 7 via a regulator 8 which is itself connected to a solar panel 9. The regulating circuit 11 is also connected to a connector 9a allowing emergency power to be supplied from the alternating mains.

Figures 5, 6 and 7 show three embodiment examples of independent panels like the one in Figure 4, but double-sided; the upper arris of the sheets of the panels then correspond respectively to the embodiment of Figures 1, 2 and 3. Thus, the upper arris of the double panel of Figure 5 includes a rounded upper arris 131. The double display panel of Figure 6 includes two oblique upper arrises 141 and the display panel of Figure 7 two highly oblique arrises 151, 151, as in Figure 3.

The various elements of the power supply, are not detailed, these having already been described.

The display panel according to Figures 4 to 7 is, in general, a panel with an independent power supply which must be autonomous and can be arranged at any point, and the entire electrical installation is, in general, placed in a base 106, 107, 108, 109 forming a support.

CLAIMS

1. Display and/or indicating panel, especially an advertising display panel or road sign, illuminated via the edge face from a distributed light source, which panel is characterized in that it is composed of the head-to-tail combination of two transparent sheets (1, 1'), the reflective surfaces (122, 122') of which go from one side of each sheet (1, 1') to the other.

2. Display panel according to Claim 1, characterized in that the reflective surface is an inclined plane surface (121, 122, 122').

3. Display panel according to Claim 1, characterized in that the reflective surface is a curved surface (12).

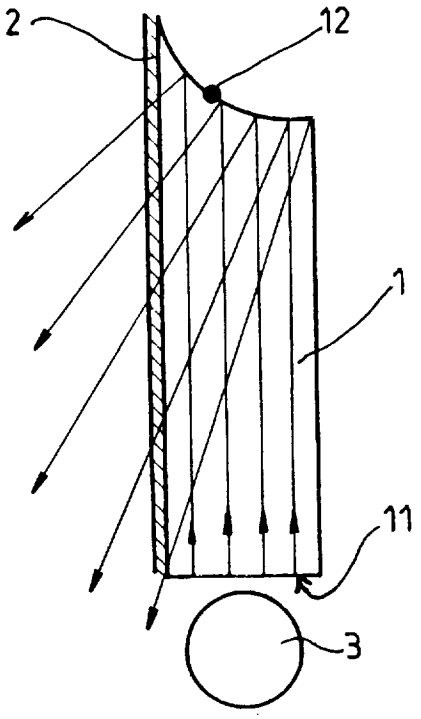

FIG.1

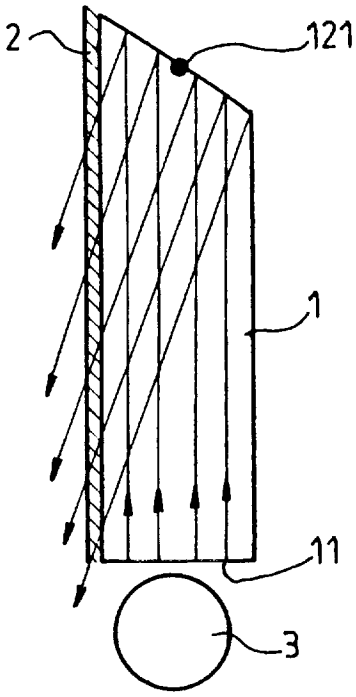

FIG.2

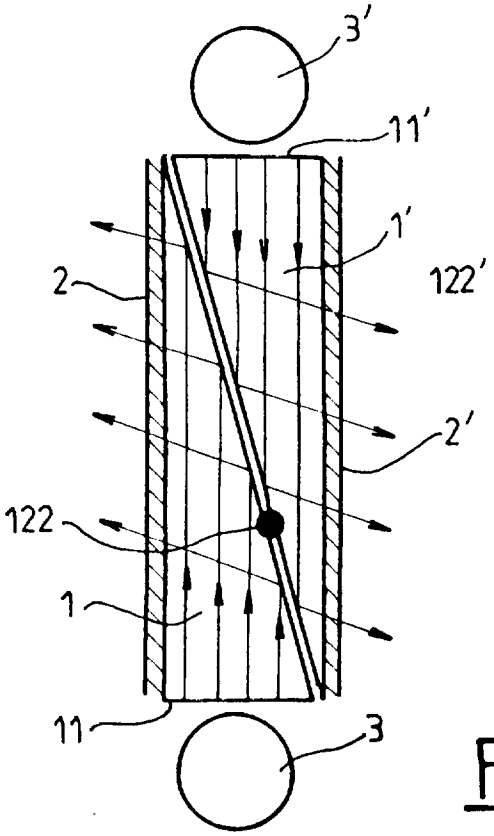

FIG.3

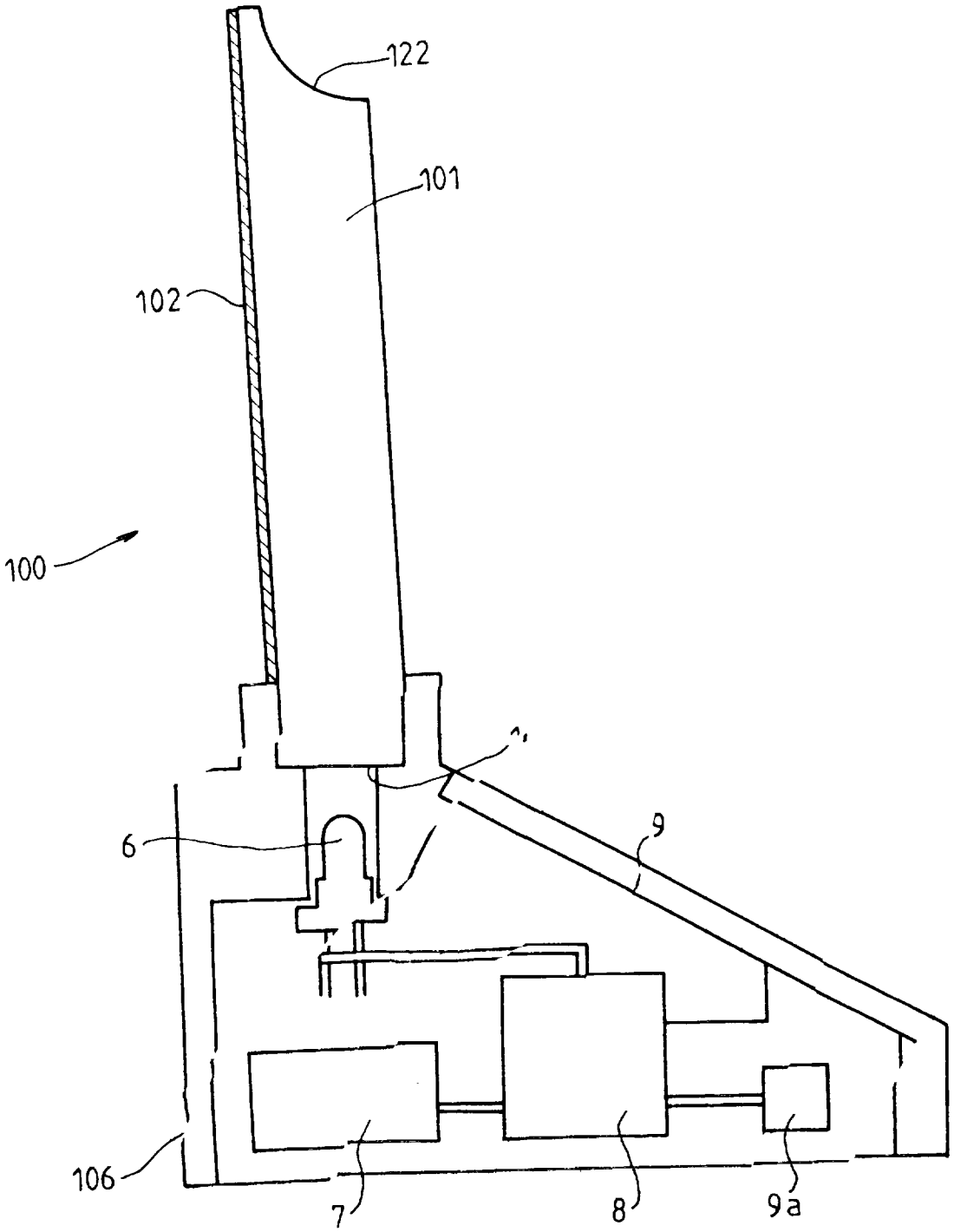

FIG. 4

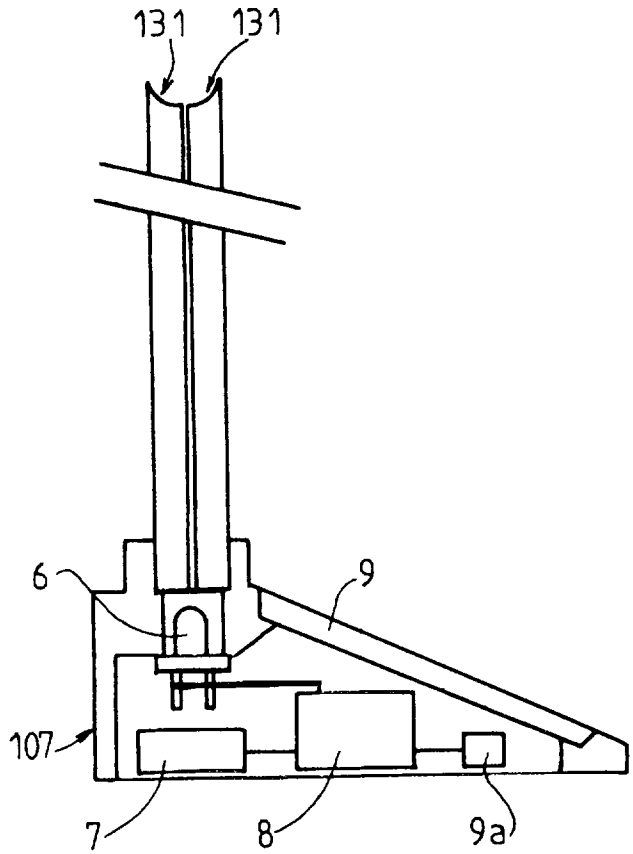

FIG.5

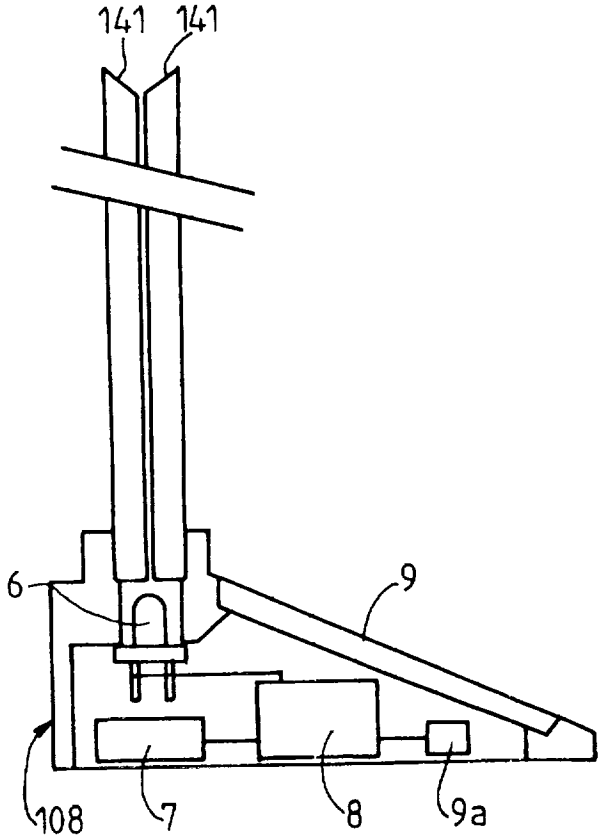

FIG.6

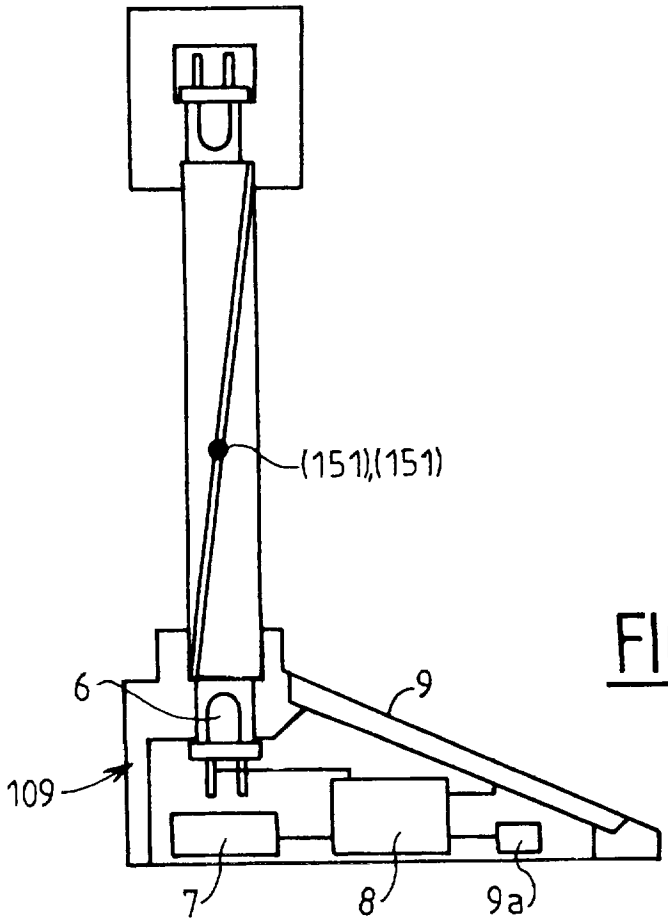

FIG.7