the ambient air causes both reflected and transmitted light to scatter or otherwise be diffused.

[0032] In some embodiments, the matt surface may be formed on a polariser film. More specifically, the polarising film may be formed from a protective transparent layer encapsulating a polarising layer.

[0033] According to one embodiment, the step of altering the matt surface to provide the front screen with an optically smooth surface includes applying an at least partially transparent coating to the matt surface. Preferably, the coating is applied as a flowable substance and subsequently hardened to form an optically flat outer surface.

[0034] Preferably, the coating is of a material with substantially the same refractive index as the material having the matt surface.

[0035] Preferably, the coating flows over, around and/or inside any optical irregularities, distortions, protrusions, or discontinuities of said matt surface to a sufficient thickness to form a substantially optically flat outer surface.

[0036] The coating may be applied by a variety of methods including painting, spraying, sputtering, vapour deposition, slurry coating, chemical deposition, screen printing or roll coating.

[0037] In an alternative embodiment of the present invention, the step of altering the matt surface to provide the front screen with an optically smooth surface includes attaching an optically smooth transparent film to the matt surface by a transparent adhesive interposed between the film and the matt surface.

[0038] Preferably, the adhesive is initially applied to a lower surface of the film, though alternatively, the adhesive may be applied to the matt surface independently from the film.

[0039] Preferably, the said adhesive and film arc of materials having substantially the same refractive index as the material having the matt surface.

[0040] Preferably, the adhesive is capable of flowing over, around and/or inside any optical irregularities, distortions, protrusions, or discontinuities of said matt surface to a sufficient thickness to form a substantially optically fat outer surface.

[0041] It should be appreciated that the term film means any layer or material that performs the function as described above.

[0042] In a yet further embodiment of the present invention, the step of altering the matt surface to provide the front screen with an optically smooth surface includes removing the existing the material having the matt surface and replacing same with a material having an optically smooth surface.

[0043] Preferably said material having an optically smooth surface is a polariser film, preferably formed from a protective transparent layer encapsulating a polarising layer.

[0044] According to a further aspect of the present invention, there is provided a display produced by any one of the above-described methods.

[0045] Consequently, it has been found that by performing the step of altering the matt surface to provide the front screen with an optically smooth surface as described in any of the above-described embodiments, any effect of the scattering or diffusion of light both transmitted through and reflected from the display technology (in this example LCD screen) is substantially ameliorated.

[0046] When a screen which has been converted in accordance with the present invention is used with 3-dimensional technology as described previously, a highly improved clarity in the images viewed on the rear screen is achieved.

[0047] The application of any of the aforementioned steps for altering the matt surface of the front screen to an optically smooth surface does not interfere in any way with the operation of the diffuse bi-refringent film in that there are no visible colour patches and/or moire interference discernible to viewer.

[0048] The present invention also has a number of other advantages including the creation of images with improved clarity with a wide angle of view, but without requiring the production of expensive customised screens.

[0049] This invention allows all the necessary diffusion of the image on the rear screen to be achieved immediately in front of the rear screen, thus giving the greatest angle of view for the given amount of diffusion, due to the diffuse or scattering element being as far away from the viewer as possible.

BRIEF DESCRIPTION OF DRAWINGS

[0050] Further aspects of the present invention will become apparent from the following description which is given by way of example only and with reference to the accompanying drawings in which:

[0051] **FIG. 1** shows a schematic cross sectional view through a first preferred embodiment of the present invention;

[0052] **FIG. 2** shows a schematic cross sectional view through a second preferred embodiment of the present invention; and

[0053] **FIG. 3** shows a schematic cross sectional view through a third preferred embodiment of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

[0054] The FIGS. **1-3** illustrate preferred embodiments of the present invention implemented with a dual screen display (**1**) composed of a plurality of transparent imaging screens in the form of a front LCD screen (**2**), parallel to, but spaced apart from a rear display screen (**3**) provided with a backlight (**4**).

[0055] It should be apparent to one skilled in the art that a number of alternative display technologies may be utilised in place of the LCD screens. Furthermore, although **FIG. 1** shows a single screen (**2**) in front of the rear display (**3**) for the sake of clarity and convenience, any number of additional (at least partially transparent) imaging screens (**2**) may be incorporated. Although the rear screen (**3**) may also be an LCD screen, it will be apparent that alternative, non-transparent display technology may be employed.