visible through the transparent conductive film thus has lowered contrast. Moreover, the image on the display visible through the transparent conductive film is greatly diffused due to the surface roughness of the film, so that it is seen with decreased sharpness.

[0051] In the transparent conductive film **1** according to this embodiment, in order to overcome the drawbacks in the related art, it is preferable to provide the fine irregularities on the transparent resin layer without using organic or inorganic fine beads usually used for providing irregularities. Specifically, the fine irregularities can be provided by embossing, in which an embossing plate (preferably, an embossing roller) is pressed, optionally with heating, onto a transparent resin layer that has been or is being formed. More preferably, a die whose die face has irregularities that are the inverse of the desired fine irregularities to be provided, is filled with a transparent resin excellent in curing characteristics, such as an ultraviolet-light-curing resin, and is covered with a transparent plastic film; thereafter, ultraviolet light is applied to cure the transparent resin in the die and, at the same time, to integrate the transparent resin and the transparent plastic film into one, from which the die is then separated.

[0052] To provide the fine irregularities, the die for providing irregularities may be pressed onto the transparent resin that has been applied to the transparent plastic film, or the application of the transparent resin and the lamination of the transparent resin layer may be simultaneously conducted by feeding the transparent resin between the transparent plastic film and the die for providing irregularities. Namely, any technique can be employed as long as the transparent resin can be interposed between the transparent plastic film and the die for providing irregularities. Such a technique is superior to the conventional embossing technique, particularly in terms of the reproduction of the configuration of a die face, so that it can impart the desired optical properties more easily. Moreover, although a surface roughened by the conventional embossing technique is disadvantageous in that it returns to its original smooth surface with time, a surface provided with irregularities by a technique in which a transparent resin is interposed between a transparent plastic film and a die for providing irregularities is free from such a disadvantage. A fine irregularity layer having fine irregularities, showing sufficiently high hardness can thus be obtained by the latter technique.

[0053] (Process of Producing Transparent Conductive Film)

[0054] A process of producing the transparent conductive film **1** as shown in **FIG. 1A, 1B** or **2** will be described by referring to **FIG. 3**.

[0055] As shown in **FIG. 3**, after laminating a transparent conductive layer **4** to one surface of a transparent plastic film **2** (**FIG. 3**(*a*)), an ionizing-radiation-curing resin is interposed between the surface of the transparent plastic film **2** to which the transparent conductive layer **4** is not laminated and the die face **12***a* of a die **12** for providing irregularities, thereby laminating an ionizing-radiation-curing resin layer **17** to this surface of the transparent plastic film **2** (**FIG. 3**(*b*)). The irregularities of the die face **12***a* of the die **12** for providing irregularities are suitable for forming, on the exposed surface of the ionizing-radiation-curing resin layer **17**, fine irregularities having a maximum height (Rmax) of 0.5 to 2.0 μm. More preferably, the fine irregularities that are the inverse of the irregularities of the die face **12***a* of the die **12** for providing irregularities have a ten-point mean roughness (Rz) of 0.35 to 1.5 μm.

[0056] By using an ultraviolet light irradiator **18**, ultraviolet light is then applied to the ionizing-radiation-curing resin layer **17** interposed between the transparent plastic film **2** and the die face **12***a* of the die **12** for providing irregularities. The ionizing-radiation-curing resin layer **17** is thus cured, and, at the same time, is adhered to the transparent plastic film **2** (**FIG. 3**(*c*)).

[0057] Lastly, the cured ionizing-radiation-curing resin layer (fine irregularity layer **3'**) provided with the fine irregularities that are the inverse of the irregularities of the die face **12***a* of the die **12** for providing irregularities is separated, together with the transparent plastic film **2**, from the die face **12***a* of the die **12**, thereby obtaining a transparent conductive film **1** composed of the transparent plastic film **2**, the fine irregularity layer **3** and the transparent conductive layer **4** (**FIG. 3**(*d*)).

[0058] In the production process shown in **FIG. 3**, the transparent conductive layer **4** is laminated to one surface of the transparent plastic film **2** before forming the fine irregularity layer **3** on the other surface of the transparent plastic film **2**. However, the transparent conductive layer **4** may also be laminated in the following manner: as shown in **FIG. 4**, after forming the fine irregularity layer **3** on one surface of the transparent plastic film **2** (FIGS. **4**(*a*), (*b*) and (*c*)), the transparent conductive layer **4** is laminated to the exposed surface of the fine irregularity layer **3** (FIG. (*d*)), or to the surface of the transparent plastic film **2** to which the fine irregularity layer **3** is not laminated (**FIG. 4**(*e*)).

[0059] The production processes shown in **FIGS. 3 and 4** can be conveniently effected by the use of an embossing machine **10** as shown in **FIG. 5**. The embossing machine **10** shown in this figure is useful for forming the fine irregularity layer **3** on the surface of the transparent plastic film **2** by using an ultraviolet-light-curing resin (ionizing-radiation-curing resin).

[0060] As shown in **FIG. 5, a** transparent plastic film **2** unrolled at the upper left-hand corner of the figure is delivered toward an embossing roller (die for providing irregularities) **12**. The embossing roller **12** has a surface (die face) **12***a* provided with irregularities that are the inverse of the desired fine irregularities to be provided.

[0061] A coating head **13** is placed under the embossing roller **12**, and an ultraviolet-light-curing resin **14** is fed to the coating head **13** from a reservoir (not shown in the figure) through a pipe **16**. The ultraviolet-light-curing resin **14** fed is forced out from the coating head **13** situated right under the embossing roller **12**, through a slit **15** facing to the top of the coating head **13**, and is applied to the roughened surface (die face) **12***a* of the embossing roller **12**. Thereafter, this ultraviolet-light-curing resin applied is shifted to the upper left hand as embossing roller **12** rotates (clockwise rotation in the case shown in the figure) and is laminated as an ultraviolet-light-curing resin layer **17** to the transparent plastic film **2** in a space between the embossing roller **12** and a nip roller **11***a* situated on the transparent-plastic-film-unrolling side.

[0062] Instead of laminating the transparent plastic film **2** to the ultraviolet-light-curing resin layer **17** after forming the