

182 sandwiched between the electrode **52** becoming the key element and the electrode pattern **29e** to present the programmable sense of touch which gives the concave and convex feeling with respect to operator's finger or the like by the protuberant shape or the cave-in shape of the electrically conductive rubber **182** in which the amount of swelling of the portion of the electrically conductive rubber **182** is adjusted or by the original shape without conducting electricity.

[0375] The following will describe a modification example (No. 1) of the display device in the input device **800**. FIG. **42** shows a configuration of a display device **229** with a touch-sensitive variable sheet function, which is applicable to the input device **800**. The display device **229** shown in FIG. **42** includes the transparent touch-sensitive sheet member **180** constituting the touch-sensitive sheet member and the display unit **29** on the touch-sensitive sheet member **180**. The electrode pattern **29e** and the wiring pattern group **57** which are concurrently used by the touch-sensitive sheet member **180** and the display unit **29** are also included. In this example, as the display unit **29**, a liquid crystal display device is used instead of the organic EL device, and a back light **29g** is provided in the lowest layer. With respect to the other members and functions, the members similar to those of the display device **129** are used and the functions similar to those of the display device **129** are included, so that the explanation thereof will be omitted.

[0376] In this example, the touch-sensitive sheet member **180** is provided on the back light **29g** shown in FIG. **42**. The base film **181** is provided on the back light **29g**, and the electrically conductive rubber **182** and the intermediate layer film **183** are layered on this upper portion. The electrically conductive rubber **182** is bonded on the upper portion of the base film **181** by an adhesive agent or the like. As the electrically conductive rubber **182**, a sheet shaped polymer material (artificial muscle) having transparency and also electric conductivity is used.

[0377] In the bottom surface of the electrically conductive rubber **182**, the electrodes **52** are arranged at the positions each corresponding to the individual operation key, as shown in FIG. **42**. The plurality of electrodes **52** are respectively connected to the above-mentioned wiring pattern group **57**. The intermediate layer film **183** is bonded on the upper portion of the electrically conductive rubber **182** by an adhesive agent or the like. The display unit **29** which forms the liquid crystal display device is bonded on the upper portion of the intermediate layer film **183** by an adhesive agent or the like.

[0378] The display unit **29** includes the sealing layer **29a**, the liquid crystal material **29f**, the intermediate layer film **29c**, the base panel **29d**, the electrode pattern **29e** and the back light **29g**. The sealing layer **29a** has a frame shape shown in FIG. **38** and is provided on the intermediate layer film **183**, which enables the liquid crystal material **29f** to be sealed up.

[0379] The intermediate layer film **29c** is bonded on the upper portion of the sealing layer **29a** and the liquid crystal material **29f** by an adhesive agent or the like. The base panel **29d** is arranged on the upper portion of the intermediate layer film **29c**. The electrode pattern **29e** which is concurrently used by the touch-sensitive sheet member **180** and the display unit **29** is arranged on the lower surface side of the base panel **29d**. The above-mentioned wiring pattern group **57** together with the electrode pattern **29e** of the display unit **29** is connected to the driving power supply **55A**, not shown, which applies the DC driving voltage to the electrode **52** and the electrode pattern **29e** of the liquid crystal display device for

every individual operation key. At that time, the DC driving voltage may be applied with the voltage-level thereof being changed. In this manner, the display device **229** that is applicable to the input device **800** is configured.

[0380] The display device **229** thus configured having the liquid crystal display device on the touch-sensitive sheet member **180** may present the input operation accompanied with the concave and convex feeling when the icon images or the like displayed on the display unit **29** are touched with the operator's finger and the finger slides on the upper portion of the electrically conductive rubber **182** under the display screen, even if the display surface thereof is observed to be a flat shape. Thus, it becomes possible to provide the input device **800** with the programmable touch-sensitive input sheet for icon touch.

[0381] The following will describe a modification example (No. 2) of the display device in the input device **800**. FIG. **43** shows a configuration of a display device **329** with a touch-sensitive variable sheet function, which is applicable to the input device **800**. The display device **329** shown in FIG. **43** includes the transparent touch-sensitive sheet member **180** and the display unit **29** on the touch-sensitive sheet member **180**. The electrode pattern **29e**, which is concurrently used by the touch-sensitive sheet member **180** and the display unit **29**, and wiring pattern groups **57**, **58**, which are arranged respectively, are also included. In this example, as the display unit **29**, an organic EL device is used instead of a liquid crystal display device.

[0382] In this example, the touch-sensitive sheet member **180** includes the base film **181** shown in FIG. **43** and layered intermediate layer film **183** and electrically conductive rubber **182** on the base film **181**. The intermediate layer film **183** may be omitted. The intermediate layer film **183** is bonded on the upper portion of the base film **181** by an adhesive agent or the like and the electrically conductive rubber **182** is bonded on the intermediate layer film **183** by the same agent. As the electrically conductive rubber **182**, a sheet shaped polymer material (artificial muscle) having transparency and electric conductivity is used.

[0383] A film portion **184** for wiring is provided on the upper portion of the electrically conductive rubber **182**. As the film portion **184**, an insulated and transparent polyimide based film member is used. The wiring pattern group **57** for the touch-sensitive variable sheet is provided on the bottom surface side of the film portion **184** and the wiring pattern group **58** for the organic EL device is provided on the front surface side thereof. In this example, the electrodes **52** shown in FIG. **43** are arranged at the positions each corresponding to the individual operation key image on a front surface side of the electrically conductive rubber **182**, and the plurality of electrodes **52** are connected to the wiring pattern group **57** respectively.

[0384] The display unit **29** having the organic EL device is bonded on the upper portion of the film portion **184** for wiring by an adhesive agent or the like. The display unit **29** includes the sealing layer **29a**, the self-light-emitting organic material **29b**, the intermediate layer film **29c**, the base panel **29d** and the electrode pattern **29e**. The sealing layer **29a** has a frame shape shown in FIG. **38** and is provided on an intermediate layer film **29b**, which enables the self-light-emitting organic material **29b** to be sealed up.

[0385] The intermediate layer film **29c** is bonded on the upper portion of the sealing layer **29a** and the self-light-emitting organic material **29b** by an adhesive agent or the like.