from the surroundings, so that dust and moisture that have adverse influence on SAW propagation are completely shut out.

[0049] Each of the inner second protrusions **202** has such a cross-sectional shape as to reduce the contact area with the glass substrate **2**. When the transparent resin film **4** is strongly pressed through a touch operation, the contact area of the top end of each second protrusion **202** with the glass substrate **2** is too small to affect SAW propagation. Even if the transparent resin film **4** is pressed with a very strong force, the transparent resin film **4** does not touch the transducers **3**, and accordingly, does not affect transmission and reception of SAWs.

[0050] Like the touch panel **100** in accordance with the first embodiment, the touch panel **200** in accordance with the second embodiment has the transparent resin film **4** made of a material that easily absorbs SAWs, such as cycloolefin, so as to further increase the operability. Also, in the touch panel **200**, the dot spacers **6**, the dike protrusions **201**, and the second protrusions **202** are made of materials that do not easily absorb SAWs, such as acryl. With this structure, erroneous input can be prevented even if an object other than the film member touches the glass substrate **2**. Thus, the detection accuracy can be increased.

Third Embodiment

[0051] **FIG. 6** is a section view of a touch panel in accordance with a third embodiment of the present invention. In the touch panel **300** in accordance with the third embodiment, the outermost surface of the transparent resin film **4**, which is the same as that of the first embodiment, is subjected to antiglare treatment. In this manner, reflections from the surface can be reduced. In **FIG. 6**, the same components as those of the foregoing embodiments are denoted by the same reference numerals as the corresponding ones of the foregoing embodiments, and explanation of them is omitted herein.

Fourth Embodiment

[0052] **FIG. 7** is a section view of a touch panel **400** in accordance with a fourth embodiment. In **FIG. 7**, the same components as those of the foregoing embodiments are denoted by the same reference numerals as the corresponding ones of the foregoing embodiments, and explanation of them will be omitted in the following description. In the touch panel **400** in accordance with the fourth embodiment, a transparent resin case **401** is integrally molded, instead of the transparent resin film **4**. Small protrusions **402** and **404** are provided in the corresponding operation area on the substrate-facing surface, so as to give the operation area the same thickness as the outer peripheral regions of the operation area.

[0053] As shown in **FIG. 7**, the small protrusions **402** are dot spacers. Although not shown, the small protrusions **402** may have concavities and convexities, so that interference fringes can be prevented. In the touch panel **400**, dike protrusions **403** that are formed in the outer peripheral regions on the substrate-facing surface of the transparent resin case **401** to avoid the transducers **3** are also integrally molded with the transparent resin case **401**.

[0054] Also, in the touch panel **400**, the second protrusions **404** are formed in the inner peripheral regions on the substrate-facing surface of the transparent resin case **401**. The inner peripheral regions are not to touch the transducers **3**. In this structure, the second protrusions **404** are designed to be closer to the glass substrate **2** than the dot spacers **402** to the glass substrate **2**. The second protrusions **404** are also integrally molded with the transparent resin case **401**.

[0055] The touch panel **400** in accordance with the fourth embodiment may be used as a part of the casing of a small device such as a portable telephone.

Fifth Embodiment

[0056] **FIG. 8** is a section view of a touch panel in accordance with a fifth embodiment. In **FIG. 8**, the same components as those of the foregoing embodiments are denoted by the same reference numerals as the corresponding ones of the foregoing embodiment, and explanation of them will be omitted in the following description. The touch panel **500** in accordance with the fifth embodiment has a transparent conductive film **501** (such as an ITO film) formed on one surface of the transparent resin film **4**. This transparent conductive film **501** is shielded, as shown in **FIG. 8**.

[0057] With the transparent conductive film **501**, the visibility of the display screen deteriorates due to a decrease of the light transmittance and a change of color. Particularly, in a case where certain electrostatic resistance is required, the transparent conductive film **501** serves as a shield layer to increase the electrostatic resistance. As the touch detection in accordance with this embodiment is a SAW method with high durability, a touch panel that has a longer life than a conventional resistive-film touch panel while having the same electrostatic resistance as the resistive-film touch panel can be realized. Although the transparent conductive film **501** is provided on the lower surface of the transparent resin film **4** in **FIG. 8**, it is possible to form a transparent conductive film on the upper surface of the transparent resin film **4**.

[0058] In accordance with the fifth embodiment, the problem with an insulating glass surface having a poor shielding effect and poor electrostatic resistance can be eliminated.

Sixth Embodiment

[0059] **FIG. 9** is a section view of a touch panel in accordance with a sixth embodiment. In **FIG. 9**, the same components as those of the foregoing embodiments are denoted by the same reference numerals as the corresponding ones of the foregoing embodiments. The touch panel **600** in accordance with the sixth embodiment has a polarizing plate **602** bonded to the outermost surface of a transparent resin film **601**.

[0060] So as to minimize the amount of light reflected from the surface of the touch panel **600**, a polarizing plate is required for the use in an automobile. The touch panel **600** can properly operate with the polarizing plate **602** bonded to the outermost surface.

[0061] It is of course possible to combine the touch panel **600** with a $\lambda/4$ phase difference plate to form a circular polarizing panel.

[0062] A conventional touch panel with a polarizing plate has good visibility, restraining surface-reflected light and