[0040] As shown in **FIGS. 1 and 2**, a touch panel **10** according to the embodiment has a lower substrate **11** made of a transparent substrate such as glass or a transparent plastic film and an upper substrate **12** made of a transparent and flexible substrate such as a transparent plastic film, opposing each other with a predetermined spacing therebetween. Inner surfaces of the lower substrate **11** and the upper substrate **12** respectively have a lower transparent electrode **15** and an upper transparent electrode **16**, made of, e.g., indium tin oxide, formed on substantially the entire surfaces corresponding to at least an input area by a finger, a pen, or the like.

[0041] As shown in **FIG. 2**, the lower transparent electrode **15** is connected to wires **31** and **32** at the upper and lower sides shown in the drawing, respectively, and the upper transparent electrode **16** is connected to wires **33** and **34** at the left and right sides shown in the drawing, respectively. In the touch panel **10** according to the embodiment, the upper substrate **12** and the lower substrate **11** are assumed to lie at the operator side and the display device side having the touch panel **10**, respectively.

[0042] As shown in enlarged scales in **FIGS. 3 and 4**, the inner surfaces of the lower substrate **11** and the upper substrate **12** can include large numbers of fine projections **21** and **22**, respectively. The lower transparent electrode **15** and the upper transparent electrode **16** are formed in accordance with the configurations of the inner surfaces of the lower substrate **11** and the upper substrate **12** having the projections **21** and **22**, respectively. The projections **21** and **22** are not shown in **FIGS. 1 and 2**, because they are too small compared to the sizes of the lower substrate **11** and the upper substrate **12**, and to the spacing between these substrates.

[0043] The projections **21** and **22** may be made of members different from those of the lower substrate **11** and the upper substrate **12**. As shown in **FIGS. 3 and 4**, however, the projections **21** and **22** are preferably integrated with the lower substrate **11** and the upper substrate **12**, respectively, so as to simplify the fabrication step for the projections **21** and **22**. Techniques for integrally forming the projections **21** and **22** with the lower substrate **11** and the upper substrate **12**, respectively, include a method in which a mold having a pattern of the projections **21** and **22** is pushed into one of the surfaces of a flat plastic film which is softened by heating. The shapes and the patterns of the projections **21** and **22** will be described in greater detail later.

[0044] The spacing between the lower substrate **11** and the upper substrate **12**, having the lower transparent electrode **15** and upper transparent electrode **16**, respectively, i.e., the spacing between the lower transparent electrode **15** and the upper transparent electrode **16**, is on the order of several micrometers, and an air space **13** is interposed between the lower substrate **11** and upper substrate **12**, i.e., between the lower transparent electrode **15** and upper transparent electrode **16** as shown in **FIG. 4**. A large number of spherical spacers **14**, each having a diameter equal to the spacing between the lower substrate **11** and the upper substrate **12** (about several micrometers), is disposed between the lower transparent electrode **15** and upper transparent electrode **16** so as to avoid contact of the lower transparent electrode **15** and upper transparent electrode **16** in the event of no input by a finger, a pen, or the like.

[0045] The resistive contact-type touch panel **10** has a structure in which the flexible upper substrate **12** is deformed at a position of the upper substrate **12** pressed by a finger, a pen, or the like from its outer surface, causing the upper transparent electrode **16** to come into contact with the lower transparent electrode **15** at the pressed position. This structure allows the touch panel **10** to perform position detection.

[0046] The principal of the position detection in the touch panel **10** according to the embodiment will be described briefly with reference to **FIG. 2**. For position detection in the horizontal direction shown in the drawing, a predetermined voltage is applied across the wires **33** and **34** of the upper substrate **12** so as to provide the upper transparent electrode **16** with a potential gradient in the horizontal direction while providing the entire lower transparent electrode **15** with an equipotential. Thus, a horizontal position is detected based on the principal in which the detected voltage varies depending on the position where the lower transparent electrode **15** and the upper transparent electrode **16** are put in contact with each other by a finger, a pen, or the like.

[0047] In the meantime, position detection in the vertical direction shown in the drawing is accomplished in a similar fashion to that in the horizontal direction shown in the drawing. That is, a predetermined voltage is applied across the wires **31** and **32** of the lower substrate **11** so as to provide the lower transparent electrode **15** with a potential gradient in the vertical direction shown in the drawing while providing the entire upper transparent electrode **16** with an equipotential. Thus, a vertical position is detected based on the principal in which the detected voltage varies depending on the position where the lower transparent electrode **15** and the upper transparent electrode **16** are put in contact with each other by a finger, a pen, or the like.

[0048] With the above-described principal of position detection in the vertical and horizontal directions, a position (a coordinate point), where the lower transparent electrode **15** and the upper transparent electrode **16** are put in contact with each other by a finger, a pen, or the like, is detected.

[0049] The shapes and patterns of the projections **21** and **22** respectively formed on the inner surfaces of the lower substrate **11** and the upper substrate **12** will be described. As shown in **FIGS. 3 and 4**, each of the projections **21** and **22** can be formed as a truncated quadrangular pyramid. Reference numerals **21A** and **22A** respectively represent the bottoms of the projections **21** and **22**, and reference numerals **21B** and **22B** respectively represent the tops of the projections **21** and **22**. The cross-sectional area of each of the projections **21**, parallel to the outer surface of the lower substrate **11**, is formed to decrease continuously from the bottom **21A** to the top **21B** of the projection **21**. The same applies to the combination of each of the projections **22** of the upper substrate **12**, and the bottom **22A** and the top **22B** of the projection **22**.

[0050] The bottom **21A** of the projection **21** lies on the display device side (the lower side shown in the drawing) and the top **21B** of the projection **21** lies on the operator side (the upper side shown in the drawing). The bottom **22A** of the projection **22** lies on the operator side (the upper side shown in the drawing) and the top **22B** of the projection **22** lies on the display device side (the lower side shown in the drawing).

[0051] As also shown in **FIG. 3**, arranged on the inner surfaces of the lower substrate **11** and the upper substrate **12**