are the projections **21** and **22** in a substantially periodical manner in three directions shown in the drawing; the vertical and horizontal directions which are orthogonal to each other, and the diagonal direction, thus being arranged in a substantially matrix configuration as a whole.

[**0052**] Pitches **P1**, **P2** and **P3** of the projections **21** and **22** in the horizontal, vertical, and diagonal directions shown in the drawing are arranged to be shorter than any wavelength of visible light. The pitches **P1**, **P2** and **P3** of the projections **21** and **22** can be preferably equal to or shorter than approximately one fifth of the shortest wavelength of visible light, in other words, about 450 nm. The shorter the pitches **P1**, **P2** and **P3** of the projections **21** and **22**, the better, however, the pitches are preferably arranged to range from 10 to 100 nm since pitches shorter than 10 mn cause the fabrication step of the projections **21** and **22** to become more complicated. Though illustrated in an exaggerated manner, the pitches **P1**, **P2** and **P3** of the projections **21** and **22** are extremely small, that is, on the order of nanometers, while the distance between the lower transparent electrode **15** and the upper transparent electrode **16** is on the order of micrometers.

[**0053**] In this embodiment, as described above, the lower transparent electrode **15** can be formed over the inner surface of the lower substrate **11** having the large number of fine projections **21** arranged with the substantially periodical pitches **P1**, **P2**, and **P3** shorter than any wavelength of visible light. Thus, projections and depressions having a predetermined shape are formed on the inner surface of the lower transparent electrode **15** with the substantially periodical pitches **P1**, **P2**, and **P3** shorter than any wavelength of visible light. The same applies to the combination of the upper transparent electrode **16**, the upper substrate **12**, and the large number of fine projections **22**.

[**0054**] When the projections and depressions are formed in a substantially periodical manner on the inner surface of the lower transparent electrode **15**, light incident from the air space **13** is reflected and diffracted at the lower transparent electrode **15**. However, the projections and depressions formed with the substantially periodical pitches **P1**, **P2**, and **P3** shorter than any wavelength of visible light reduce the light reflection and diffraction at the boundary between the air space **13** and the lower transparent electrode **15**. The projections and depressions thus increase the light transmission on the lower transparent electrode **15**. The same applies to the combination of the upper transparent electrode **16** and the air space **13**.

[**0055**] According to the embodiment, the light reflection and diffraction at the boundary between the air space **13** and the lower transparent electrode **15** and at the boundary between the air space **13** and the upper transparent electrode **16** are thus reduced, thereby providing the analog resistive contact-type touch panel **10** having high light transmittance.

[**0056**] According to the embodiment, the lower substrate **11** and the upper substrate **12** are provided with the projections **21** and **22**, respectively. Accordingly, both kinds of light reflection decrease: one for light incident from the operator side and reflected at the surface of the lower transparent electrode **15**, and the other for light emitted from the display device side and reflected at the surface of the upper transparent electrode **16**.

[**0057**] It should be understood that the present invention is not limited to a structure in which both the lower substrate **11** and the upper substrate **12** are provided with the projections **21** and **22**, respectively, but may include another structure in which at least one of the lower substrate **11** and the upper substrate **12** is provided with projections. The latter structure reduces at least one of the two kinds of light reflection: one for light incident from the operator side and reflected at the surface of the lower transparent electrode **15**, and the other for light emitted from the display device side and reflected at the surface of the upper transparent electrode **16**.

[**0058**] When the projections **21** and **22** are formed only in one direction in a substantially periodical manner, polarized light travelling orthogonal to the direction does not see the periodic structure of the projections **21** and **22**. In other words, reflection and diffraction of the polarized light are not reduced at the boundary between the air space **13** and the lower transparent electrode **15** and at the boundary between the air space **13** and the upper transparent electrode **16**. Since the projections **21** and **22** are arranged in a substantially periodical manner in at least two directions including two mutually orthogonal directions in the embodiment, reflection and diffraction of all visible light are reduced at the boundary between the air space **13** and the lower transparent electrode **15** and at the boundary between the air space **13** and the upper transparent electrode **16**.

[**0059**] Further, each of the projections **21** is formed in the embodiment such that the cross-sectional area of the projection **21**, parallel to the outer surface of the lower substrate **11**, continuously decreases from the bottom **21**A to the top **21**B of the projection **21**. Defining the shape of the projection **21** as described above serves to make a gradual change in the effective refractive index in the region between the air space **13** and the outer surface of the lower substrate **11**, thereby further reducing the light reflection and diffraction at the boundary between the air space **13** and the lower transparent electrode **15**. The same applies to the combination of each of the projections **22**, the bottom **22**A and the top **22**B of the projection **22**, the upper substrate **12**, and the upper transparent electrode **16**.

[**0060**] This reduction in the light reflection and diffraction will be described briefly with reference to **FIG. 5**. Because the difference in refractive indexes of the substrate and the transparent electrode is negligibly small in comparison to that in refractive indexes of air and the substrate or of air and the transparent electrode, the substrate and the transparent electrode will be regarded as an integral unit in the following description. The term "the substrate/transparent electrode" stands for the integral unit of the substrate and the transparent electrode. **FIG. 5** is a sectional view of the substrate/transparent electrode having prismatic projections formed periodically on the surface thereof, and illustrates the air space formed on the projection side of the substrate/transparent electrode.

[**0061**] As shown in **FIG. 5**, the refractive index of air space is "1", and that of the substrate/transparent electrode is assumed to be "n". Thus, the effective refractive indexes in the horizontal direction shown in the drawing are "1" in the region above the projections where only the air space resides, and "n" in the region below the projections where only the substrate/transparent electrode resides. Meanwhile, the effective refractive index in the horizontal direction shown in the drawing is "m" in the region where the