[0085] **FIG. 10** shows an embodiment of a display image presented on the display section of the touch panel input device as the first embodiment thus constructed in accordance with the present invention. The display image shown in **FIG. 10** is a selection screen for "YES" and "NO" presented on the display section including an LCD or the like. By touching a desired item of "YES" or "NO" through the touch panel, the user inputs input data for the desired item.

[0086] **FIG. 11** shows in a cross-sectional view a state in which data is inputted by a finger from the touch panel input device of the first embodiment. As can be seen from **FIG. 11**, the first transparent film **11** of layer A is distorted by pressured of the finger. Resultantly, the first transparent resistive film **12** comes into contact with the second transparent resistive film **13**. However, the third transparent resist film **16** is supported by the dot spacers **19** not to be accordingly brought into contact with the fourth transparent resistive film **17** in layer B by the depression of the finger. That is, the films **16** and **17** are kept separated from each other.

[0087] When the device is used dedicatedly for finger input, the controller **23** shown in **FIG. 8** receives from the touch panel controller **22** information indicating presence or absence of contact between the films **12** and **13** of layer A. When the contact is sensed, the controller **23** additionally receives information of coordinates of the contact point. According to the coordinate values, the controller **23** determines a selected one of the selection items presented on the display section **24**, for example, "YES" or "NO" in **FIG. 10**. According to a result of the determination, the controller **23** displays a screen image and conducts post processing.

[0088] As above, when the device **100** is employed exclusively for fingers, the device **100** can be used in the same way as for a finger-input touch panel by receiving a state of contact between the transparent resistive films **12** and **13** of layer A.

[0089] **FIG. 12** shows in a cross-sectional view a state in which data is inputted by a pen in the touch panel input device as the first embodiment. Referring to **FIG. 12**, description will be given of operation in which an image is drawn by a pen on the touch panel **21** and coordinates associated with the image is inputted to the touch panel input device.

[0090] In **FIG. 12**, when a pen depresses the first transparent film **11** of layer A to input data, the film **11** is distorted and then the first transparent resistive film **12** is brought into contact with the second transparent resistive film **13**. Moreover, the third transparent resistive film **16** comes into contact with the fourth transparent resistive film **17**.

[0091] When the device is exclusively used for a pen, the controller **23** of **FIG. 8** presence/absence of contact between the films **16** and **17** of layer B receives from the touch panel controller **22**. When the contact is present, the controller **23** further receives coordinates of the contact point. In a pen input mode, even when part of a hand touches the touch panel surface as shown in **FIG. 13**, the controller **23** can appropriately control operations using the input coordinates of layer B, not the input coordinates of layer A. Therefore, only the coordinates associated with the pen input can be received without input errors.

[0092] When the device is used dedicatedly for a pen, even if a finger touches the touch panel by mistake, since the touch by the finger causes the contact only in layer A, there does not occur any input error.

[0093] Description will now be given of an operation example to automatically determine that an input from the touch panel **21** is conducted by a finger(tip) or a pen in the touch panel input device in the first embodiment configured as above in accordance with the present invention.

[0094] **FIG. 14** shows in a plan view a display example of a virtual keyboard presented on the display section in an input operation for the automatic determination. In **FIG. 18**, when pressure by a finger is senses on a particular character displayed in the virtual keyboard, the transparent resistive layers of layer A is in a contact state. When pressure by a pen is detected, the transparent resistive layers of layer A and those of layer B are in a contact state.

[0095] Therefore, in the automatic determination of the finger or pen input, when the controller **23** detects the contact state in layer A of the touch panel **21** and does not detect the contact state in layer B, the controller **23** can determine that the data is inputted by a finger. When the contact state in layer A of the touch panel **21** and the contact state in layer B are detected, the controller **23** can determine that the data is inputted by a pen.

[0096] Description will now be given in detail of an input operation by displaying, for example, the virtual keyboard of **FIG. 14** on the display section **14**. In FIGS. **14** to **16**, Japanese characters is used only to explain the present invention. The present invention is not restricted to the characters. Each key of the virtual keyboard on the display section is, for example, a size of about 5 millimeters (mm) by about 5 mm. The size is too small for the finger input operation. That is, only a selected key among these keys cannot be correctly pressed by the finger, and hence the user must employ a pen.

[0097] When a pen is used to input data via the virtual keyboard, the controller **23** automatically determines the pen input operation according to the conditions described above and then receives coordinates of a contact point between the transparent resistive films of layer B in the touch panel **21**. According to the coordinates, the controller **23** identifies a key pushed by the pen and inputs a pertinent character to the device.

[0098] When a finger is used to touch the virtual keyboard, the controller **23** automatically determines the finger input mode as above and then receives information of coordinates of a contact point between the transparent resistive films of layer A in the touch panel **21**. The controller **23** divides the image of the virtual keyboard into four partitions or areas as shown in **FIG. 15** to identify in which one of the areas the coordinates belong in the image.

[0099] After having identifies the area of the contact point, the controller **23** controls the display section **24** to display a magnified image of the pertinent area as shown in **FIG. 16**. When the coordinates belong in a plural of the four partitions or areas, then the controller **23** controls the display section **24** to display in following order of a number of the coordinates belonged to the partitions or areas is large (or small).

[0100] In the virtual keyboard of **FIG. 16**, each key has a size of about 10 mm by about 10 mm. The size allows an