fixed conductor layer **7** is grounded through a resistor to monitor the electric potential in a wait state in the absence of pressure detection. The electric potential of the fixed conductor layer **7** is at ground electric potential when the movable plate **3** is not pressed. When the conductor layers **6** and **7** come in contact with each other as a result of pressing, the movable conductor layer **6** supplies the resistor with a current and the electric potential of the fixed conductor layer **7** increases to a certain potential level. Thus, pressing the movable plate **3** can be detected when a predetermined voltage threshold is set, and the electric potential of the fixed conductor layer **7** exceeds the predetermined threshold.

[**0083**] When a pressure is detected, the pressure detecting circuit operates to detect the pressed position. When the pressure is detected, the first drive circuit **10**, which impresses the drive voltage on the piezoelectric substrate **2** also starts. This operation is described later.

[**0084**] The pressed position is detected in the X direction and in the Y direction respectively. When the pressed position in the X direction is detected, a voltage for detecting a coordinate is impressed on the X impressing side leader electrode **8***a*. Simultaneously, the X ground side leader electrode **8***b* is grounded to form a constant electric potential gradient across the movable conductor layer **6**. The electric potential at the pressed position is read out as the electric potential of the fixed conductor layer **7** when the fixed conductor layer **7**, which comes in contact with the movable conductor layer **6**, is set as a high impedance. A voltage detection circuit such as an A/D converter connected with either one of the Y impressing side leader electrode **9***a* and the Y ground side leader electrode **9***b* reads the electric potential at the contact position. Because the constant electric potential gradient is formed across the movable conductor layer **6**, the electric potential at the contact position is a value proportional to a distance in the X direction from the X ground side leader electrode **8***b* to the X impressing side leader electrode **8***a*, and is used for detecting the X coordinate of the pressed position.

[**0085**] When the pressed position in the Y direction is detected, a constant electric potential gradient in the Y direction is formed across the fixed conductor layer **7**. A voltage detection circuit connected to the X impressing side leader electrode **8***a* or the X ground side leader electrode **8***b* reads the electric potential at the contact position in the same way as described above. The electric potential at the contact position is a value proportional to a distance in the Y direction from the Y ground side leader electrode **9***b* to the Y impressing side leader electrode **9***a*. This electric potential is used for detecting the Y coordinate of the pressed position.

[**0086**] These X and Y coordinate detecting modes are repeated, and the pressed position as a result of pressing the input operation surface **3** a is detected in the X and Y directions. The pressed position data, comprising the X coordinate and the Y coordinate, are provided to a processing device such as a personal computer (not shown in the drawings).

[**0087**] As long as the touch panel input device **1** detects pressure on the movable plate **3**, the pressure detecting circuit repeats the detection of the pressure and the pressed position. When pressure is first detected after a period of time when pressure is not present, the first drive circuit **10** starts to impress the drive voltage on the piezoelectric substrate **2** to vibrate the support substrate **4**.

[**0088**] The first drive circuit **10** is a simple circuit as shown in **FIG. 4**. The pair of drive electrodes **2***a* and **2***b* of the piezoelectric substrate **2** are connected with the output of the transformer circuit **14**. When a pressure is detected, a vibration trigger signal with a period of 5 to 10 msec is provided for the transformer circuit **14**, a DC low voltage power supply momentarily impresses a few volts on the transformer circuit **14**. Thus, an induction voltage from the coils is generated in the transformer circuit **14**. A drive voltage of about ±40 V is impressed on the piezoelectric substrate **2**.

[**0089**] When the drive voltage is impressed on the piezoelectric substrate **2**, the piezoelectric substrate **2** cyclically contracts and expands to vibrate the support substrate **4** to which the piezoelectric substrate **2** is fixed. The waveform of the drive voltage for driving the piezoelectric substrate **2** is a pulse waveform generated momentarily. The support substrate **4** vibrates while the drive voltage is impressed. Because a vibration with a large amplitude is generated, even in a momentary period, an operator feels the vibration transmitted to the fingertip through the movable plate **3** which is in contact with the support substrate **4**, with sufficient strength to recognize that the pressing operation is detected.

[**0090**] Thus, the first drive circuit **10** for generating the vibration can be an extremely simple circuit without requiring an oscillation circuit, or an oscillation circuit for amplification, for maintaining the vibration for a certain period.

[**0091**] Because the vibration of the support substrate **4** is directly associated with the contraction and the expansion of the piezoelectric substrate **2**, the drive voltage waveform for driving the piezoelectric substrate **2** can be changed as shown in individual drawings in FIGS. **5**(*a*)-**5**(*d*) to provide a slight vibration change for an operator.

[**0092**] **FIG. 5**(*a*) shows a drive voltage waveform for providing a click feeling similar to one generated for an operator when the operator presses a push button supported by a disc spring. A pulse with a period of 5 to 10 msec is generated twice after a pressure is detected. As a result, the support substrate **4** momentarily vibrates twice.

[**0093**] **FIG. 5**(*b*) shows a drive voltage waveform of sinusoidal AC with a frequency of 20 to 30 Hz. This impresses a sinusoidal wave vibration with the same frequency on the support substrate **4**. As a result, an operator feels a vibration similar to that experienced if a vibrating motor were vibrating the support substrate **4**.

[**0094**] **FIG. 5**(*c*)) is a drive voltage waveform of AC with a period of several hundreds of microseconds. The support substrate **4** vibrates with the same period. Because the vibrating frequency of the support substrate **4** is several kilo hertz, although the vibration frequency is too high for an operator to detect the vibration in a finger, the vibration has the audio frequency. The vibration generates an operation sound if the support substrate **4** is a glass substrate or the like. This permits generating a sound to transmit the input operation feeling to an operator, without the necessity to provide an independent speaker for generating the operation sound.