

piezoelectric unit 315. At this time point, the display of the operation panel image relating to the application #A may be changed to, for example, a menu screen or the like. Thereafter, the process shifts to step ST13.

[0208] If the application execution instruction other than the execution instruction of the application #A is set at the above-mentioned step ST2, the process shifts to step ST7. At the step ST7, the CPU 32 branches the control thereof depending on whether the application execution instruction is an execution instruction of the application #B or an execution instruction of the other application. If the application execution instruction is the application #B, the process shifts to step ST8 where the CPU 32 reads the control information of the application #B. The CPU 32 controls the display unit 29 so as to change over the display based on the control information.

[0209] At that time, the CPU 32 outputs an image signal Sv based on the control information to the display unit 29. On the display unit 29, there are displayed the icon images of the key K18 of "etc", the key K19 of "REW", the left facing arrow stop key K20, the right facing arrow stop key K21, the left facing fast-forward key K22, the fast-forward key K23, the reproduction key K24 and the stop key K25, which form the icon images of the second group, and at the same time, the video of the reproduction application or the like (referred to as FIG. 19B).

[0210] Also, the CPU 32 outputs the instruction data D based on the control information to the air-circulation unit 3. The air-circulation unit 3 executes a changeover control so as to open the valve body 305 and to shut off the valve body 304 based on the instruction data D in order to select the flow channel 2b. The blower 3b sends the air to the flow channel 2b selected by the flow channel changeover unit 3a. The piezoelectric unit 315 constituting the blower 3b adjusts an amount of the air. The piezoelectric unit 315 is controlled by the instruction data D inputted from the CPU 32. This control enables the concave and convex touch feeling of the eight element bag portions E18 to E25 of the second group to be changed.

[0211] In this embodiment, the display region of the key K18 of "etc" corresponds to the element bag portion E18 shown in FIG. 18 and similarly, the display region of the key K19 of "REW" corresponds to the element bag portion E19. The display region of the left facing arrow stop key K20 corresponds to the element bag portion E20, the display region of the right facing arrow stop key K21 corresponds to the element bag portion E21 and the display region of the left facing fast-forward key K22 corresponds to the element bag portion E22. Further, the display region of the fast-forward key K23 corresponds to the element bag portion E23, the display region of the reproduction key K24 corresponds to the element bag portion E24, and the display region of the stop key K25 corresponds to the element bag portion E25. When the slide operation or the press operation is executed, the respective display regions enable the concave and convex touch feeling to be given to the operator's finger.

[0212] Then, the CPU 32 executes the application #B at step ST9. The application #B is the processing for reproducing video information by operating, for example, the key K18 of "etc", the key K19 of "REW", the left facing arrow stop key K20, the right facing arrow stop key K21, the left facing fast-forward key K22, the fast-forward key K23, the reproduction key K24 or the stop key K25.

[0213] Thereafter, the process shifts to step ST10 where the CPU 32 judges an end of the application #B. If there is no

end-instruction of the application #B, the process returns to the step ST9 where the display unit 29 continues the operation panel display relating to the application #B. If there is the end instruction of the application #B, the process shifts to step ST11 where the CPU 32 transmits the instruction data D to the air-circulation unit 3 so as to control stopping the piezoelectric unit 315. Thereafter, the process shifts to step ST13.

[0214] It should be noted that if the application execution instruction other than the applications #A and #B is set at the step ST7, then the process shifts to step ST12. The other application is executed at the step ST12. In the processing in this other application, for example, a waiting image or the like is displayed on the display unit 29 by changing over the display screen. Also, the air-circulation unit 3 does not select any of the flow channels 2a and 2b, so that the changeover control for shutting off the valve body 304 and the valve body 305 is executed based on the instruction data D. The piezoelectric unit 315 stops the driving thereof based on the instruction data D inputted from the CPU 32. This control enables any of the twenty five element bag portions E1 to E25 of the first and second groups to lose the concave and convex touch feeling.

[0215] Thereafter, the process shifts to step ST13 where the end of the input processing in the mobile phone 600 is judged. For example, the CPU 32 detects power-OFF information. If the power-OFF information is not detected, the process returns to the step ST1 where the above-mentioned processing is repeated. If the power-OFF information is detected, the input processing in the mobile phone 600 ends.

[0216] In this manner, the mobile phone 600 as the third embodiment is provided with the embodiment of the input device 300 so that it becomes possible to provide a structure in which the convex and concave shape or the pressure changes on the operation screen corresponding to the applications #A and #B with respect to the slide operation or the press operation of the user's finger. Consequently, the operation panel building mode (icon image+sense-of-touch-representing unit) can be executed by the sense of touch representation function depending on the touch-sensitive variable sheet unit 103 and by the display function of the icon image of the display unit 29, so that it becomes possible to provide the mobile phone 600 with the programmable touch-sensitive variable sheet function for the icon touch. Moreover, it is possible to improve miniaturization and operability of the input device 300, thereby enabling the reduction of the miss-operation, the cost down and the simplification of the manufacturing process of the mobile phone 600 to be realized.

[0217] Although, in this embodiment, a case of the touch-sensitive variable sheet unit 103 having the twenty five element bag portions E1 to E25 has been described with respect to the touch-sensitive sheet member, it is not limited to this; the touch-sensitive variable sheet unit having twenty five apertures p1 to p25 for presenting a sense of touch at predetermined positions of the base member 1 may be constituted. Then, even if the sense of touch given to the operator's finger 30a is changed by sending the air to these apertures p1 to p24 from the blower 3b, by feed-back controlling this blower 3b by the piezoelectric unit 315 and the CPU 32, and by adjusting an amount of the air blown out of the aperture p1 to p24, the similar effect can be obtained.

Embodiment 4

[0218] FIG. 24 shows a configuration of an input device 400 as a fourth embodiment, to which an embodiment of a