

index of air is made as 1 and the light transmittance thereof is made as 100%. The base member 1 preferably has thickness of 0.01 to 5 mm.

[0107] As the above-mentioned base member 1, there can be used an acrylic-based transparent material (hereinafter, referred to as transparent material), a polycarbonate-based (PC-based) transparent material, a polyethylene terephthalate-based (PET-based) transparent material, a polyether sulfone-based (PES-based) transparent material, a polyarylate-based (PAR-based) transparent material, a polyether ether ketone-based (PEEK-based) transparent material, a liquid crystal polymer-based (LCP-based) transparent material, a polytetrafluoroethylene-based (PTFE-based) transparent material, a polystyrene-based transparent material, a styrene-based transparent material, and an urethane-based transparent material, a silicon-based transparent material. As the above-mentioned base member 1, there can be also used a transparent material formed by mutual synthesis or the like of all the materials of a polytetrafluoroethylene-based (PTFE-based) material, a fluorine-based resin material, a cycloolefin polymer-based (COP-based) material, an acrylonitrile-butadiene-styrene-based (ABS-based) material and the like. Further, as the above-mentioned base member 1, there can be used a transparent material derived from one of all the above-mentioned materials, a non-transparent material of all the above-mentioned materials and a polymer alloy which is formed by mixing a material within all the above-mentioned materials and rubber or the like.

[0108] Also, as the base member 1 and the flow channel panel 2, the following synthetic resins may be used in general (there exist materials overlapped with the contents mentioned above): a phenol resin (PF), an epoxy resin (EP), a melamine resin (MF), an urea resin (UF), an unsaturated polyester resin (UP), an alkyd resin, polyurethane (PUR), thermoset polyimide (PI), polyethylene (PE), high density polyethylene (HDPE), medium density polyethylene (MDPE), low density polyethylene (LDPE), polypropylene (PP), polyvinylchloride (PVC), polyvinylidene chloride, polystyrene (PS), and polyvinyl acetate (PVAc), polytetrafluoroethylene (PTFE) (Teflon-trademark), an acrylonitrile butadiene styrene resin (ABS), an AS resin, an acrylic resin (PMMA), polyamide (PA), nylon, polyacetal (POM), polycarbonate (polycarbonate-based transparent material), modified polyphenylene ether (m-PPE, modified PPE, PPO), polybutylene terephthalate (PBT), polyethylene terephthalate (polyethylene terephthalate-based transparent material), a polyethylene terephthalate material including a glass resin (polyethylene terephthalate-based transparent material-G), glass-fiber reinforced polyethylene terephthalate (GF-polyethylene terephthalate-based transparent material), cyclic polyolefin (COP), polyphenylene sulfide (PPS), polysulfone (PSF), polyether sulfone (polyethersulfone-based transparent material), amorphous polyarylate (PAR), a liquid crystal polymer (LCP), polyether ether ketone (PEEK), thermoplastic polyimide (PI), polyamide-imide (PAI), a transparent material formed by mutual synthesis or the like of all the above-mentioned materials, a transparent material derived from one of all the above-mentioned materials, a non-transparent material (which is used as nonskid sheet) of all the above-mentioned materials, and a polymer alloy which is formed by mixing a material within all the above-mentioned materials and rubber or the like.

[0109] The following will describe shapes of the flow-out ports of the aperture p1 and the like with reference to FIG. 5 to FIG. 13. FIG. 5A shows a shape example of a flow-out port

Q1 and FIG. 5B is a cross-section view thereof taken along an arrow of X1-X1 shown in FIG. 5A. The flow-out port Q1 shown in FIG. 5A is formed at each of the terminal portions of the apertures p1 to p24 as shown in FIG. 4 and the shape thereof has a base circle. The aperture p1 or the like is formed by perforating it in the base member 1 shown in FIG. 5B.

[0110] In this embodiment, it is possible to obtain a sense of touch by a mass of air blown out of the aperture p1 or the like in a single manner. In FIG. 5 to FIG. 13, each 1a is a display region which can display one element of the input key, for example, the key of numeral "1", the determination key of the cross key or the like. On this display region 1a displaying the key of numeral "1", the determination key of the cross key or the like, slide operation or press operation is executed.

[0111] FIG. 6A shows a shape example of a flow-out port Q2 as a modification example (No. 1) and FIG. 6B is a cross-section view thereof taken along an arrow of X2-X2 shown in FIG. 6A. The flow-out port Q2 shown in FIG. 6A has a circular shape in which triple circular members are formed. The flow-out port Q2 is constituted by including, for example, a circular opening region of the center region, arc shaped opening regions on the concentric circle thereof and arc shaped opening regions of the outside thereof. Each of the triple circular members is mutually engaged and supported by beam portions.

[0112] It should be noted that as shown in FIG. 6B, it is set such that the opening width of the outside is narrower than the opening width of the inside. In this embodiment, it is possible to obtain a multiple sense of touch by dividing a mass of air blown out of the flow-out port Q2 in three as compared with the sense of touch by a mass of air blown out of the base flow-out port Q1 in a single manner.

[0113] FIG. 7A shows a shape example of a flow-out port Q3 as a modification example (No. 2) and FIG. 7B is a cross-section view thereof taken along an arrow of X3-X3 shown in FIG. 7A. The flow-out port Q3 shown in FIG. 7A has many holes which are dispersed. The flow-out port Q3 is constituted by including, for example, a large hole at the center region, a plurality of radially arranged holes on its concentric circle and a plurality of further radially arranged holes on the periphery thereof. It should be noted that as shown in FIG. 7B, they are set such that a diameter of the outside hole becomes smaller than that of the inside hole. In this embodiment, it is possible to obtain a unique sense of touch by a mass of air blown out of the flow-out port Q3 in the plural dispersing manner as compared with a mass of air blown out of the base flow-out port Q1 in a single manner.

[0114] FIG. 8A shows a shape example of a flow-out port Q4 as a modification example (No. 3) and FIG. 8B is a cross-section view thereof taken along an arrow of X4-X4 shown in FIG. 8A. The flow-out port Q4 shown in FIG. 8A has a triple concentric circle members. The flow-out port Q4 is constituted by including, for example, small circular opening at a center region, arc shaped openings on the concentric circle thereof and arc shaped openings on the outside thereof. The concentric circle members is respectively engaged and supported to the base member 1 by beam portions. It should be noted that as shown in FIG. 8B, the opening width of the inside is narrower than the opening width of the outside. In this embodiment, it is possible to obtain a multiple sense of touch by a mass of air blown out of the flow-out port Q4 in the plural dispersing manner as compared with a mass of air blown out of the base flow-out port Q1 in a single manner.