structure of an optical unit and optical path; **FIG. 3** is an illustration showing an optical unit main body; **FIG. 4** is a cross sectional view showing one example of mounting of a polygon mirror and a motor; **FIG. 5** is a cross sectional view showing another example of mounting of the polygon mirror and motor; **FIG. 6** is an upper view showing an example of mounting of the polygon mirror and motor; FIGS. **7**(*a*) and **7**(*b*) are illustrations showing an example of a side face of the polygon mirror (optical scanning face); **FIG. 8** is an illustration showing a mounted state of the motor on the optical unit main body; **FIG. 9** is an illustration showing a fixed state of a collimation lens; **FIG. 10** is an illustration showing a state of implementing of the positional adjustment and fixing of the collimation lens; **FIG. 11** shows another state of implementing of the positional adjustment and fixing of the collimation lens; **FIG. 12** is an illustration showing one example of the shape of a plate spring; **FIG. 13** is an illustration showing another example of the shape of the plate spring; **FIG. 14** is an illustration showing still another example of the shape of a plate spring; **FIG. 15** is an illustration showing one example of a light emitting element fixing substrate; **FIG. 16** is an illustration showing another example of the light emitting element fixing substrate; **FIG. 17** is an illustrations showing still another example of the light emitting element fixing substrate; **FIG. 18** is an illustration showing the relationship between the sizes of a mounting hole in the light emitting element fixing substrate and a mounting member; **FIG. 19** is an illustration showing the positional relationship among the light emitting element, collimation lens, lens holder and optical unit main body; **FIG. 20** is an illustration showing the positional relationship between the light emitting element and light emitting element fixing substrate; **FIG. 21** is a cross sectional view showing the structure of an aperture; FIGS. **22**(*a*) and **22**(*b*) are plan views showing the structure of the aperture; **FIG. 23** is an illustration showing one example of the relationship between the structure of the aperture and the optical unit main body; **FIG. 24** is an illustration showing another example of the relationship between the structure of the aperture and the optical unit main body; **FIG. 25** is a structural illustration of one example of an aperture mirror; **FIG. 26** is a structural illustration of another example of the aperture mirror; **FIG. 27** is an illustration showing one example of a state of mounting of the aperture mirror on the optical unit main body; **FIG. 28** is an illustration showing another example of a state of mounting of the aperture mirror on the optical unit main body; **FIG. 29** is an illustration showing a state of implementing of the positional adjustment and fixing of a light receiving lens; **FIG. 30** is an illustration showing an example of the structure of a slit plate; **FIG. 31** is an illustration showing one example of mounting of the slit plate on the optical unit main body; **FIG. 32** is an illustration showing another example of mounting of the slit plate on the optical unit main body; **FIG. 33** is a schematic diagram showing a state of implementing of the optical scanning-type touch panel; **FIG. 34** is a schematic diagram showing the principle of triangulation for detecting a coordinate; **FIG. 35** is a schematic diagram showing an indicator and a cut-off range; **FIG. 36** is a timing chart showing the relationship between the light receiving signal, scanning angle and scanning time; and **FIG. 37** is a schematic diagram showing the principle of measurement of the diameter of a cross-section of the indicator.

BEST MODE FOR IMPLEMENTING THE INVENTION

[**0011**] The following description will describe the present invention in detail with reference to the drawings illustrating an embodiment thereof. **FIG. 1** is a schematic diagram showing the basic structure of an optical scanning-type touch panel of the present invention.

[**0012**] In **FIG. 1**, reference numeral **10** is a display screen of a CRT, flat display panel (PDP, LCD, EL, etc.) or projection-type image display device of electronic equipment such as a personal computer, and the optical scanning-type touch panel of this embodiment is constructed as the display screen of a PDP (Plasma Display Panel) having display dimensions of 92.0 cm in a horizontal direction×51.8 cm in a vertical direction and 105.6 cm diagonal.

[**0013**] Optical units **1***a* and **1***b* having therein an optical system composed of a light emitting element, a light receiving element, a polygon mirror and various lenses are respectively provided on the outside of both corners of one short side (the right side in this embodiment) of a rectangular display screen **10** that is the extent of a plane specified as a target area to be touched by an indicator (blocking object) S such as a finger and a pen. Moreover, a recurrence reflection sheet **7** is provided on the outside of three sides other than the right side of the display screen **10**, namely, the upper, lower and left sides.

[**0014**] Further, reference numeral **70** is a light shielding member. This light shielding member **70** is disposed on a line connecting both the optical units **1***a* and **1***b* so that direct light does not enter between the optical units **1***a* and **1***b*, more specifically light projected from the optical unit **1***a* does not enter the optical unit **1***b* and light projected from the optical unit **1***b* does not enter the optical unit **1***a*. Besides, the light shielding member **70** is an object whose light reflectance is "0" practically, and its height is substantially the same as the height of the recurrence reflection sheet **7**.

[**0015**] **FIG. 2** is an illustration showing the structure of the optical units **1***a* and **1***b* and the optical path. Both the optical units **1***a* and **1***b* have the same internal structure. The optical unit **1***a* (**1***b*) includes a light emitting element **11** composed of a laser diode (LD) for emitting infrared laser light; a collimation lens **12** for changing the laser light from the light emitting element **11** into parallel light; a light receiving element **13** composed of a photodiode (PD) for receiving reflected light from the recurrence reflection sheet **7**; a slit plate **14** having a slit **14***a* for limiting incident light on the light receiving element **13**; a polygon mirror **15** having the shape of a square column, for example, for angularly scanning the laser light from the light emitting element **11**; an aperture mirror **16** for limiting light projected onto the polygon mirror **15** from the collimation lens **12** by an aperture **16***a* and for reflecting light reflected from the recurrence reflection sheet **7** through the polygon mirror **15** toward the light receiving element **13**; a light receiving lens **17** for focusing light reflected from the aperture mirror **16** on the light receiving element **11**; a motor **18** for rotating the polygon mirror **15**; and an optical unit main body **19** (see **FIG. 3**) on which these members are mounted and fixed.

[**0016**] The above-mentioned light emitting element **11**, collimation lens **12** and aperture mirror **16** constitute a light emitting system; the aperture mirror **16**, light receiving lens