connecting the above-described parts. The RAM **23** includes the regions of waveform memories **28**L and **28**R. The operation part **20** is connected to the computer **14** via the interface part **26**.

[**0078**] The operation part **20** performs the operation to detect the coordinate value of a position where the light beam traveling over the panel surface **10***a* is interrupted based on an electrical signal inputted from each of the CCDs **13** of the optical units **1**L and **1**R, which signal corresponds to the intensity distribution of the retroreflective light beam in the direction parallel to the panel surface **10***a*.

[**0079**] A description will be given, with reference to **FIGS. 6 through 8**, of the above-mentioned operation. **FIG. 6** is a block diagram showing only a portion of the operation part **20**, which portion is used so that the CPU **21** performs the coordinate detection operation.

[**0080**] First and second waveform data representing the intensity distributions of the light beams in the direction parallel to the panel surface **10***a*, which intensity distributions are outputted as electrical signals from the respective CCDs **13** of the optical units **1**L and **1**R shown in **FIG. 3**, are inputted to the operation part **20**. Hereinafter, the CCDs **13** of the optical units **1**L and IR are referred to as a CCD **13**L and a CCD **13**R, respectively. The first and second waveform data are then stored in the waveform memories **28**L and **28**R in the RAM **23** shown in **FIG. 5**, respectively. The peak detectors **25**L and **25**R perform operations to detect the positions of the peak points of the first and second waveform data stored in the waveform memories **25**L and **25**R, respectively.

[**0081**] **FIG. 7** is a diagram for illustrating a peak point. For instance, if the sector-shaped light beam formed of the lights L**1**, L**2**, L**3**, . . . , Ln-**1**, Ln, . . . , . . . , and Lm projected from the optical unit **1**L has the nth light Ln interrupted by the indicator P such as a finger or a pen, the nth light Ln never reaches the retroreflective sheet **2**. Therefore, since the nth light Ln is never detected by the CCD **13**L of the optical unit **1**L, a point of weak optical intensity (dark point) is generated in a position in the optical detector array of the CCD **13**L at a distance DnL from a center C thereof. Hereinafter, this position is referred to as a position DnL. As a result, a peak point of a lowered level appears in the waveform of the intensity distribution of the light beam outputted from the CCD **13**L. Similarly, with respect to the optical unit **1**R, a dark point is generated in a position DnR in the optical detector array of the CCD **13**R, and consequently, a peak point of a lowered level appears in the waveform of the intensity distribution of the light beam outputted from the CCD **13**R.

[**0082**] The peak detectors **25**L and **25**R detect the positions DnL and DnR of the dark points that are the peak points of the waveforms, respectively, by means of, for instance, a waveform calculation method such as smoothing differential.

[**0083**] When the positions of the peak points are detected from the first and second waveform data by the peak detectors **25**L and **25**R, respectively, the x-y computing element -**29** computes the coordinate value (x, y) of the position of the indicator P that causes the peak points to appear in the first and second waveform data.

[**0084**] A description will be given, with reference to **FIG. 8**, of an operation of the x-y computing element **29** for computing the coordinate value (x, y) of the position of the indicator P.

[**0085**] An angle of projection or incidence θnL of the light Ln of the optical unit **1**L interrupted by the indicator P shown in **FIG. 7**, together with an angle of projection or incidence θnR of the light Rn of the optical unit **1**R, can be computed from the following formulas.

$$\theta nL=arctan(DnL/f) \quad (1)$$

$$\theta nR=arctan(DnR/f) \quad (2)$$

[**0086**] In the above-mentioned formulas, DnL is the position of the dark point on the CCD **13**L of the optical unit **1**L detected by the peak detector **25**L, DnR is the position of the dark point on the CCD **13**R of the optical unit **1**R detected by the peak detector **25**R, and f is a distance between the condenser lens **12** and the light receiving elements of each of the CCDs **13**L and **13**R, which distance-corresponds to the focal length of the condenser lens **12**.

[**0087**] By employing θnL obtained from the formula (1) and θnR obtained from the formula (2), an angle OL formed between the light Ln of the optical unit iL shown in **FIG. 8** and the bottom side (X-axial) of the touch panel **10**, and an angle θR formed between the light Rn of the optical unit **1**R and the bottom side (X-axial) of the touch panel **10** can be computed from the following formulas.

$$\theta L=g(\theta nL) \quad (3)$$

$$\theta R=h(\theta nR) \quad (4)$$

[**0088**] In the above-mentioned formulas, g is a deformation coefficient of the geometric relative positional relation between the touch panel **10** and the optical unit **1**L, and h is a deformation coefficient of the geometric relative positional relation between the touch panel **10** and the optical unit **1**R.

[**0089**] The coordinate value (x, y) of the position where the lights beams are interrupted by the indicator P is computed from the following formulas under the principle of triangulation.

$$x=w \tan \theta R/(\tan \theta L+\tan \theta R) \quad (5)$$

$$y=w \tan \theta L \tan \theta R/(\tan \theta L+\tan \theta R) \quad (6)$$

[**0090**] In the above-mentioned formulas, w is a distance between the optical units **1**L and **1**R.

[**0091**] Thus, the coordinate value (x, y) of the position where the lights Ln and Rn are interrupted by the indicator P is computed from the calculations of the formulas (1) through (6) by detecting the positions DnL and DnR. Programs required for the above-described calculations can be prestored in the ROM **22** as parts of the operation program of the CPU **21**.

[**0092**] Here, a description will be given collectively of an overall operation of the coordinate input and detection device having the above-described structure.

[**0093**] As shown in **FIG. 8**, if a point on the panel surface **10***a* of the touch panel **10** of the coordinate input and detection device is indicated by the indicator P such as a finger or a pen, the lights Ln and Rn projected respectively from the optical units **1**L and **1**R are interrupted by the indicator P so as to be prevented from reaching the retrore-