

substrate and the mass 20 may be moved relative to each other by fixing the pipes 18 and the holders and rotating only the glass substrate.

It should be noted that FIG. 6 shows the case where the inner circumferential end surface and the outer circumferential end surface of the glass substrate are simultaneously polished, but there is no limitation to such a case. The inner circumferential end surface and the outer circumferential end surface of the glass substrate may be polished separately.

[0040] The end surface polishing will be described more specifically. The magnet 12 and the magnet 14 are close to each other, and serve as a magnetism generating means to form magnetic field lines 19 as shown in FIG. 5B. The magnetic field lines 19 move so as to project outward from the center between the magnets 12 and 14 and also move in the thickness direction of the glass substrate. The spacer 16 made of a non-magnetic substance is provided between the magnets 12 and 14 in order to, for example, form the mass 20 of magnetic slurry as shown in FIG. 5C around the outer circumference of the pipe 18.

Although it is sufficient that a magnetic flux density of the magnetism generating means is set so that the mass 20 of the magnetic slurry is formed, the magnetic flux density is preferably 0.3 to 5 tesla for the purpose of performing end surface polishing efficiently.

It should be noted that in the example shown in FIGS. 5A to 5C and FIG. 6, permanent magnets are used as the magnetism generating means, but electromagnets can also be used. Also, the magnets 12 and 14 can be fixed to the pipe 18 to ensure a constant distance between the end surface on the N-pole side of the magnet 12 and the end surface on the S-pole side of the magnet 14 without the spacer 16.

[0041] Known glass substrate polishing abrasive particles such as cerium oxide, colloidal silica, zirconia oxide, alumina abrasive particles, or diamond abrasive particles can be used as the polishing abrasive particles contained in the magnetic slurry. The polishing abrasive particles have a grain diameter of,

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