CLAIMS

1. A method of manufacturing a glass substrate for a magnetic disk, comprising the periphery polishing step of polishing both the peripheral wall of a glass substrate and intermediate faces between the main surfaces and the peripheral wall of the glass substrate, the periphery polishing step being performed using an abrasive member having a peripheral wall-polishing portion mainly polishing the peripheral wall and an intermediate face-polishing portion mainly polishing the intermediate faces while a liquid abrasive containing abrasive grains is delivered to the peripheral wall and the intermediate faces.

2. The method according to claim 1, wherein the abrasive member has a rotation axis, and the periphery polishing step is performed by rotating the abrasive member with the peripheral wall-polishing portion in contact with the peripheral wall of the glass substrate and/or with the intermediate face-polishing portion in contact with the intermediate faces of the glass substrate.

3. The method according to claim 2, wherein the length of the abrasive member in the direction perpendicular to the rotation axis from the rotation axis to the peripheral wall-polishing portion is smaller than the length of the abrasive member in the direction perpendicular to the rotation axis from the rotation axis to the intermediate face-polishing portion.

4. The method according to claim 1, wherein the abrasive member has a rotation axis, and the section of the abrasive member taken along the plane including the rotation axis has a shape matching the shape of the periphery of a stack of glass substrates.

5. The method according to claim 1, wherein the periphery polishing step is performed in such a manner that a plurality of glass substrates are stacked one on top of another so that the inner peripheries of the glass substrate are simultaneously polished.

6. The method according to claim 1, wherein the abrasive member has the peripheral wall-polishing portions and the intermediate face-polishing portions alternately arranged in the axis direction.

7. The method according to claim 1, wherein the intermediate face-polishing portion is a polishing brush.

8. The method according to claim 7, wherein the peripheral wall-polishing portion is an abrasive pad.

9. The method according to claim 1, wherein the peripheral wall-polishing portion is a polishing brush whose bristles are hardened by a resin.

10. The method according to claim 1, wherein the abrasive member has a rotation axis, and the polishing step is performed by retaining the abrasive member and/or moving the abrasive member in the direction of the rotation axis.

11. An abrasive member used in a method of manufacturing a glass substrate for a magnetic disk, including the step of periphery polishing step of polishing both the peripheral wall of a glass substrate and intermediate faces between the main surfaces and the peripheral wall of the glass substrate, the abrasive member comprising:

a peripheral wall-polishing potion mainly polishing the peripheral wall; and an intermediate face-polishing portion mainly polishing the intermediate faces.

12. A polishing apparatus comprising:

a substrate support means that supports a glass substrate;

a liquid abrasive supplying means that supplies a liquid abrasive to the inner periphery of the glass substrate;

a abrasive member having a rotation axis and including a peripheral wall-polishing portion mainly polishing the peripheral wall of the glass substrate, and an intermediate face-polishing portion mainly polishing intermediate faces between the main surfaces and the peripheral wall of the glass substrate; and

a driving means that rotates the abrasive member and/or moves the abrasive member in the direction of the rotation axis with the abrasive member in contact with the inner periphery of the glass substrate.

13. The polishing apparatus according to claim 12, wherein the abrasive member is rotated with the peripheral wall-polishing portion in contact with the peripheral wall of the glass substrate and/or with the intermediate face-polishing portion in contact with the intermediate faces of the glass substrate.

CLAIMS

1. A method of manufacturing a glass substrate for a magnetic disk, comprising:

the periphery shaping step of shaping peripheries of the glass substrate to form a peripheral wall of the glass substrate and intermediate faces between main surfaces of the glass substrate and the peripheral wall of the glass substrate; and

the periphery polishing step of simultaneously polishing both the peripheral wall and the intermediate faces between the main surfaces and the peripheral wall of the glass substrate, the periphery polishing step being performed after the periphery shaping step, by using an abrasive member having a peripheral wall-polishing portion mainly polishing the peripheral wall and an intermediate face-polishing portion mainly polishing the intermediate faces while a liquid abrasive containing abrasive grains is delivered to the peripheral wall and the intermediate faces.

2. The method according to claim 1, wherein the abrasive member has a rotation axis, and the periphery polishing step is performed by rotating the abrasive member with the peripheral wall-polishing portion in contact with the peripheral wall of the glass substrate and/or with the intermediate face-polishing portion in contact with the intermediate faces of the glass substrate.

3. The method according to claim 2, wherein the length of the abrasive member in the direction perpendicular to the rotation axis from the rotation axis to the peripheral wall-polishing portion is smaller than the length of the abrasive member in the direction perpendicular to the rotation axis from the rotation axis to the intermediate face-polishing portion.

4. The method according to claim 1, wherein the abrasive member has a rotation axis, and the section of the abrasive member taken along the plane including the rotation axis has a shape matching the shape of the periphery of a stack of glass substrates.

5. The method according to claim 1, wherein the periphery polishing step is performed in such a manner that a plurality of glass substrates are stacked one on top of another so that the inner peripheries of the glass substrate are simultaneously polished.

6. The method according to claim 1, wherein the abrasive member has the peripheral wall-polishing portions and the intermediate face-polishing portions alternately arranged in the axis direction.

7. The method according to claim 1, wherein the intermediate face-polishing portion is a polishing brush.

8. The method according to claim 7, wherein the peripheral wall-polishing portion is an abrasive pad.

9. The method according to claim 1, wherein the peripheral wall-polishing portion is a polishing brush whose bristles are hardened by a resin.

10. The method according to claim 1, wherein the abrasive member has a rotation axis, and the polishing step is performed by retaining the abrasive member and/or moving the abrasive member in the direction of the rotation axis.

11. An abrasive member used in a method of manufacturing a glass substrate for a magnetic disk, including the periphery shaping step of shaping peripheries of the glass substrate to form a peripheral wall of the glass substrate and intermediate faces between main surfaces of the glass substrate and the peripheral wall of the glass substrate; and the periphery polishing step of simultaneously polishing both the peripheral wall of the glass substrate and the intermediate faces between the main surfaces and the peripheral wall of the glass substrate after the periphery shaping step, the abrasive member being used in the periphery polishing step and comprising:

a peripheral wall-polishing potion mainly polishing the peripheral wall; and an intermediate face-polishing portion mainly polishing the intermediate faces.

12. A polishing apparatus for use in polishing a glass substrate which is already subjected to a periphery shaping step to form a peripheral wall and intermediate faces between main surfaces of the glass substrate and the peripheral wall of the glass substrate and comprising:

a substrate support means that supports the glass substrate having the peripheral wall and the intermediate faces;

a liquid abrasive supplying means that supplies a liquid abrasive to the periphery of the glass substrate;

an abrasive member having a rotation axis and including a peripheral wall-polishing portion mainly polishing the peripheral wall of the glass substrate, and an intermediate face-polishing portion mainly polishing intermediate faces between the main surfaces and the peripheral wall of the glass substrate; and

a driving means that rotates the abrasive member and/or moves the abrasive member in the direction of the rotation axis with the abrasive member in contact with the inner periphery of the glass substrate to simultaneously polish both the peripheral wall and the intermediate faces.

13. The polishing apparatus according to claim 12, wherein the abrasive member is rotated with the peripheral wall-polishing portion in contact with the peripheral wall of the glass substrate and/or with the intermediate face-polishing portion in contact with the intermediate faces of the glass substrate.