

What is claimed is:

1. A cartridge detachably ~~mounted~~mountable to a printing apparatus which includes, assuming that three orthogonal spatial axes respectively are an X axis, a Y axis, and a Z axis, directions along the X axis, the Y axis, and the Z axis respectively are an X axis direction, a Y axis direction, and a Z axis direction, positive directions along the X axis, the Y axis, and the Z axis respectively are a +X axis direction, a +Y axis direction, and a +Z axis direction, and negative directions along the X axis, the Y axis, and the Z axis respectively are a -X axis direction, a -Y axis direction, and a -Z axis direction, a cartridge mounting unit into which the cartridge is ~~inserted~~insertable in the -Y axis direction toward an apparatus side front wall portion on a -Y axis direction side from an insertion hole on a +Y axis direction side, a printing material supply tube provided in the apparatus side front wall portion, and an apparatus side terminal unit which is provided closer to a +Z axis direction side than the printing material supply tube of the apparatus side front wall portion, the apparatus side terminal unit having an apparatus side terminal group provided with a contact point on a surface tilted in a direction including a +Y axis direction component and a -Z axis direction component and first and second positioning

portions respectively provided on a +X axis direction side and a -X axis direction side of the surface and being mountable~~mounted~~ in a state of being movable in the X axis direction and the Z axis direction with respect to the apparatus side front wall portion, the cartridge comprising:

assuming that the X axis, the Y axis, and the Z axis for the cartridge in a mountable~~mounted~~ state in which the cartridge is mountable~~mounted~~ to the cartridge mounting unit respectively are an X axis, a Y axis, and a Z axis of the cartridge,

two surfaces which oppose each other in the Y axis direction, the two surfaces including a rear surface positioned on the +Y axis direction side and an approximately rectangular front surface that is positioned on the -Y axis direction side and has a dimension in the Z axis direction greater than a dimension in the X axis direction;

two surfaces which intersect the front surface and the rear surface and oppose each other in the Z axis direction, the two surfaces including a first side surface positioned on the +Z axis direction side and a second side surface positioned on a -Z axis direction side;

two surfaces which intersect the front surface, the rear surface, the first side surface, and the second side surface and oppose each other in the X axis direction, the

two surfaces including a third side surface positioned on the +X axis direction side and a fourth side surface positioned on the -X axis direction side;

a supply tube insertion hole which is provided in the front surface and into which the printing material supply tube is ~~insertable~~inserted; and

a concave portion which is provided in a corner portion at which the front surface and the first side surface intersect each other and into which the apparatus side terminal unit is ~~insertable~~inserted in the ~~mountable~~mounted state,

wherein the concave portion includes an opening which is an entrance when the apparatus side terminal unit is ~~insertable~~inserted into the concave portion, and a first side wall, a second side wall, and a bottom wall that constitute at least a part of an inner wall of the concave portion,

the first side wall and the second side wall oppose each other in the X axis direction, and the first side wall is positioned on the +X axis direction side and the second side wall is positioned on the -X axis direction side,

the bottom wall is tilted in a direction including a -Y axis direction component and a +Z axis direction component and has a tilted surface provided with a cartridge side terminal group that comes into contact with the apparatus

side terminal group in the mountable~~mounted~~ state,

the first side wall is provided with a first restriction portion which restricts movements in the +Z axis direction and the +X axis direction of the apparatus side terminal unit by coming into contact with the first positioning portion in the +Z axis direction and the +X axis direction in the mountable~~mounted~~ state, and

the second side wall is provided with a second restriction portion which restricts movements in the +Z axis direction and the -X axis direction of the apparatus side terminal unit by coming into contact with the second positioning portion in the +Z axis direction and the -X axis direction in the mountable~~mounted~~ state.

2. The cartridge according to claim 1,

wherein each of the first restriction portion and the second restriction portion includes a +Z axis direction side contact surface which comes into contact with a +Z axis direction end portion of the corresponding positioning portion from the first and second positioning portions and a -Z axis direction side contact surface which comes into contact with a -Z axis direction end portion of the corresponding positioning portion from the first and second positioning portions.

3. The cartridge according to claim 2,

wherein each of the first restriction portion and the second restriction portion includes an entrance part which extends toward the +Y axis direction side from the opening provided at an end surface on the -Y axis direction side and of which a dimension in the Z axis direction is monotonically decreased in the +Y axis direction, and a contact part which extends from an end portion in the +Y axis direction of the entrance part in the +Y axis direction, has a constant dimension in the Z axis direction, and comes into contact with the corresponding positioning portion from the first and second positioning portions in the mounted state.

4. The cartridge according to any one of claims 1 to 3,

wherein each of the first and second restriction portions includes a +Y axis direction side contact surface that comes into contact with a +Y axis direction side end portion of the corresponding positioning portion from the first and second positioning portions in the mounted state.

5. The cartridge according to any one of claims 1 to 4,

wherein a pair of bottom wall side concave portions are formed in the bottom wall between the tilted surface and the first side wall and between the tilted surface and the

second side wall.

6. The cartridge according to any one of claims 1 to 5, further comprising:

a rod insertion hole which is provided at an intermediate position in the Z axis direction of the front surface between the first side surface and the second side surface and into which a rod provided in the apparatus side front wall portion is inserted,

wherein the supply tube insertion hole is provided between the rod insertion hole and the concave portion.

7. The cartridge according to any one of claims 1 to 6, wherein the first restriction portion is a groove recessed in the +X axis direction from the first side wall, and

the second restriction portion is a groove recessed in the -X axis direction from the second side wall.

8. The cartridge according to any one of claims 1 to 6, wherein the first restriction portion is configured as a convex portion that protrudes in the -X axis direction from the first side wall, and

the second restriction portion is configured as a convex portion that protrudes in the +X axis direction from

the second side wall.

9. A printing material supply system comprising:

a printing apparatus; and

the cartridge according to any one of claims 1 to 8,

wherein the printing apparatus includes, assuming that three orthogonal spatial axes respectively are an X axis, a Y axis, and a Z axis, directions along the X axis, the Y axis, and the Z axis respectively are an X axis direction, a Y axis direction, and a Z axis direction, positive directions along the X axis, the Y axis, and the Z axis respectively are a +X axis direction, a +Y axis direction, and a +Z axis direction, and negative directions along the X axis, the Y axis, and the Z axis respectively are a -X axis direction, a -Y axis direction, and a -Z axis direction, a cartridge mounting unit into which the cartridge is inserted in the -Y axis direction toward an apparatus side front wall portion on a -Y axis direction side from an insertion hole on a +Y axis direction side, a printing material supply tube provided in the apparatus side front wall portion, and an apparatus side terminal unit which is provided closer to a +Z axis direction side than the printing material supply tube of the apparatus side front wall portion, and

the apparatus side terminal unit has an apparatus side terminal group provided with a contact point on a surface

tilted in a direction including a +Y axis direction component and a -Z axis direction component and first and second positioning portions respectively provided on a +X axis direction side and a -X axis direction side of the surface, and is mounted in a state of being movable in the X axis direction and the Z axis direction with respect to the apparatus side front wall portion.

~~10. A printing apparatus to which a cartridge having a cartridge side terminal group is detachably mounted, comprising:~~

~~assuming that three orthogonal spatial axes respectively are an X axis, a Y axis, and a Z axis, directions along the X axis, the Y axis, and the Z axis respectively are an X axis direction, a Y axis direction, and a Z axis direction, positive directions along the X axis, the Y axis, and the Z axis respectively are a +X axis direction, a +Y axis direction, and a +Z axis direction, and negative directions along the X axis, the Y axis, and the Z axis respectively are a -X axis direction, a -Y axis direction, and a -Z axis direction,~~

~~a cartridge mounting unit into which the cartridge is inserted in the Y axis direction toward an apparatus side front wall portion on a -Y axis direction side from an insertion hole on a +Y axis direction side;~~

~~— a printing material supply tube provided in the apparatus side front wall portion; and~~

~~— an apparatus side terminal unit which is provided closer to a +Z axis direction side than the printing material supply tube of the apparatus side front wall portion,~~

~~— wherein the apparatus side terminal unit has an apparatus side terminal group provided with a contact point on a surface tilted in a direction including a +Y axis direction component and a -Z axis direction component and first and second positioning portions respectively provided on a +X axis direction side and a -X axis direction side of the surface, and is mounted in a state of being movable in the X axis direction and the Z axis direction with respect to the apparatus side front wall portion.~~

~~— 11. The printing apparatus according to claim 10,~~

~~— wherein the cartridge mounting unit includes two wall portions that intersect the apparatus side front wall portion and oppose each other in the Z axis direction, the two wall portions including a first apparatus side side wall portion disposed on the +Z axis direction side and a second apparatus side side wall portion disposed on a -Z axis direction side,~~

~~— a rod having a center axis parallel to the Y axis~~

~~direction is provided at an intermediate position in the apparatus side front wall portion between the first apparatus side side wall portion and the second apparatus side side wall portion, and~~

~~the printing material supply tube is provided between the rod and the apparatus side terminal unit.~~

~~12. A liquid accommodation container mounted to a printing apparatus which includes an apparatus side terminal unit that is movable in an intersection direction intersecting a mounting direction in which the liquid accommodation container is mounted and a positioning portion, the liquid accommodation container comprising:~~

~~a liquid accommodation container side terminal which comes into contact with the apparatus side terminal unit; and~~

~~a restriction portion which restricts the positioning portion from moving in the intersection direction,~~

~~wherein the liquid accommodation container is tilted with respect to the mounting direction in a state of being mounted to the printing apparatus.~~

~~13. The liquid accommodation container according to claim 12,~~

~~wherein the restriction portion is positioned above the~~

~~liquid accommodation container side terminal in the state of being mounted to the printing apparatus.~~

~~14. The liquid accommodation container according to either one of claims 12 and 13,~~

~~wherein a surface provided with the restriction portion is different from a surface provided with the liquid accommodation container terminal.~~

~~15. The liquid accommodation container according to any one of claims 12 to 14,~~

~~wherein the liquid accommodation container side terminal is provided in a surface which is open in the mounting direction and an upward direction in the state of being mounted to the printing apparatus.~~

~~16. The liquid accommodation container according to any one of claims 12 to 15,~~

~~wherein a plurality of the restriction portions are provided.~~

~~17. The liquid accommodation container according to any one of claims 12 to 16,~~

~~wherein the restriction portion has a contact part~~

~~which comes into contact with the positioning portion in the state of being mounted to the printing apparatus and an entrance part which is tilted with respect to the contact part.~~

~~18. The liquid accommodation container according to any one of claims 12 to 17, further comprising:~~

~~a side wall having a surface provided with the restriction portion; and~~

~~a bottom wall having a tilted surface provided with the liquid accommodation container side terminal,~~

~~wherein a concave portion is formed in the bottom wall between the side wall and the tilted surface.~~

~~19. The liquid accommodation container according to any one of claims 12 to 18, further comprising:~~

~~a supply hole which supplies a liquid to the printing apparatus; and~~

~~an insertion hole into which a rod provided in the printing apparatus is inserted,~~

~~wherein the supply hole is positioned between the restriction portion and the insertion hole.~~

~~20. A printing system comprising:~~

~~a printing apparatus; and~~

~~— a liquid accommodation container according to any one of claims 12 to 19.~~

~~21. A printing apparatus to which a liquid accommodation container having a liquid accommodation container side terminal is mounted, comprising:~~

~~— an apparatus side terminal unit which is movable in an intersection direction intersecting a mounting direction,~~

~~— wherein the apparatus side terminal unit has a terminal tilted with respect to the mounting direction and a positioning portion that comes into contact with a restriction portion provided in the liquid accommodation container in a state in which the liquid accommodation container is mounted.~~

~~22. A terminal connection structure mounted to a printing apparatus which includes an apparatus side terminal unit that is movable in an intersection direction intersecting a mounting direction in which a liquid accommodation container is mounted and a positioning portion, the terminal connection structure comprising:~~

~~— a terminal which comes into contact with the apparatus side terminal unit; and~~

~~— a restriction portion which restricts the positioning portion from moving in the intersection direction,~~

~~wherein the terminal is tilted with respect to the mounting direction in a state of being mounted to the printing apparatus.~~

~~23. The terminal connection structure according to claim 22,~~

~~wherein the restriction portion is positioned above the terminal in the state of being mounted to the printing apparatus.~~

~~24. The terminal connection structure according to either one of claims 22 and 23,~~

~~wherein a surface provided with the restriction portion is different from a surface provided with the terminal.~~

~~25. The terminal connection structure according to any one of claims 22 to 24,~~

~~wherein the terminal is provided in a surface which is open in an upward direction in the state of being mounted to the printing apparatus.~~

~~26. The terminal connection structure according to any one of claims 22 to 25,~~

~~wherein the restriction portion has a contact part which comes into contact with the positioning portion in the~~

~~state of being mounted to the printing apparatus and an entrance part which is tilted with respect to the contact part.~~

~~27. The terminal connection structure according to any one of claims 22 to 26, further comprising:~~

~~a side wall having a surface provided with the restriction portion; and~~

~~a bottom wall having a tilted surface provided with the terminal,~~

~~wherein a concave portion is formed in the bottom wall between the side wall and the tilted surface.~~