

[Claim 108] A cartridge that is detachably mountable to a holder of a printing device, the holder including a printing material supply tube, printing device terminals, a lever that is pivotably attached, and a hole, the cartridge comprising:

a printing material supply opening for supplying ink to the printing material supply tube; and

cartridge terminals for connecting to the printing device terminals;

wherein:

a Z axis is defined as an axis parallel to a center axis of the printing supply opening;

an X axis is defined as an axis in a direction in which the printing material opening and the cartridge terminals are aligned and orthogonal to the Z axis;

a Y axis is defined as an axis orthogonal to the Z axis and the X axis;

a -Z axial direction is defined as the opening direction of the printing material supply opening;

a +Z axial direction is defined as the opposite direction to the -Z axial direction;

a +X axial direction is defined as the direction from the printing material supply opening toward the cartridge terminals;

-X axial direction is defined as the opposite direction to the +X axial direction;

the cartridge terminals are provided on a surface facing in a normal direction that is slanted with respect to the X axis and the Z axis;

a first engagement portion is provided further in the +Z axial direction and further in the +X axial direction than the cartridge terminals, the first engagement portion being for restricting movement of the cartridge in the +Z axial direction by engagement with a device engagement portion provided further in the -Z axial direction and further in the -X axial direction than a pivot axis of the lever around which the lever is pivotable centered on and that is parallel to the Y axis

a second engagement portion is provided further in the +Z axial direction and further in the -X axial direction than the printing material supply opening, the second engagement portion is for restricting movement of the cartridge in the +Z direction by engagement in the hole,

a position of the engagement of the first engagement portion is a position further in the Z axial direction than a position of engagement of the second engagement portion.

[Claim 109] A cartridge as claimed in claim 108, wherein a width of the first restriction portion in a direction following the Y axis is shorter than a distance, in the direction following the Y axis, between a pair of wall portions provided on the lever, so that movement of the first restriction portion is restricted in the direction following the Y axis by the pair of wall portions while the cartridge is being mounted into the holder.

[Claim 110] A cartridge that is detachably mountable to a holder of a printing device, the holder including:

a printing material receiving opening;

printing device terminals;

a lever that is pivotable centered on around a pivot axis that is parallel to a Y axis;

a device engagement portion provided further in a $-Z$ axial direction and further in a $-X$ axial direction than the pivot axis of the lever; and

a hole;

the cartridge comprising:

a printing material supply opening for supplying ink to the printing material receiving opening; and

cartridge terminals for electrical connection with the printing device terminals, the cartridge terminals being provided on a surface facing in a normal direction that is slanted with respect to an X axis and a Z axis;

a first engagement portion provided further in a $+Z$ axial direction and further in a $+X$ axial direction than the cartridge terminals, the first engagement portion being for restricting movement of the cartridge in the $+Z$ axial direction by engagement with the device engagement portion at a first engagement position;

a second engagement portion for restricting movement of the cartridge in the $+Z$ axial direction by engagement in the hole at a second engagement position, the second engagement portion being provided further in the $+Z$ axial direction and further in the $-X$ axial direction than the printing material supply opening, and further in the $+Z$ axial direction than the first engagement position,

wherein:

the Z axis is defined as an axis parallel to a center axis of the printing supply opening;

the X axis is defined as an axis in a direction in which the printing material opening and the cartridge terminals are aligned and orthogonal to the Z axis;

the Y axis is defined as an axis orthogonal to the Z axis and the X axis;

the $-Z$ axial direction is defined as the opening direction of the printing material supply opening;

the $+Z$ axial direction is defined as the opposite direction to the $-Z$ axial direction;

the $+X$ axial direction is defined as the direction from the printing material supply opening toward the cartridge terminals; and

the $-X$ axial direction is defined as the opposite direction to the $+X$ axial direction.

[Claim 111] A cartridge as claimed in claim 110, wherein

the lever has a pair of wall portions separated by a distance in a direction following the

Y axis; and

the first restriction portion has a width in the direction following the Y axis that is shorter than a distance separating the pair of wall portions, so that movement of the first restriction portion is restricted in the direction following the Y axis by the pair of wall portions while the cartridge is being mounted into the holder.