Claims

[Claim 1] A tape cassette (30) comprising:
a generally rectangular box-like housing (31) having a top wall (35), a bottom wall (36), and a side wall (37) defining a periphery of the housing (31);
first and second cavities (64 and 47) extending from the bottom wall (36) and disposed between a tape containing area and the periphery at opposite ends of a diagonal of the generally rectangular box-like housing (31), the tape containing area being defined within the periphery, and the diagonal connecting a first corner portion and a second corner portion of the generally rectangular box-like housing (31);
at least one tape (55, 57, 58, 59) wound and mounted within the housing (31) in the tape containing area, the at least one tape including a first tape (55, 57, 58) disposed in a first area (30C), the first tape (55, 57, 58) having a hole (40D) at a center of winding, and the first area (30C) being one of two areas (30C and 30D) formed by dividing the housing (31) with respect to a line connecting the first and second cavities (64 and 47); and
a third cavity (65) that extends in the hole (40D) of the first tape (55, 57, 58) from the bottom wall (36).

[Claim 2] The tape cassette according to claim 1, further comprising a tape feed roller (46) that has a cylindrical shape, that is rotatably disposed between the top wall (35) and the bottom wall (36) adapted to draw out the at least one tape (55, 57, 58, 59), and that has an insert hole (46D) opening in the bottom wall (36) via one of the first and second cavities (64 and 47).

[Claim 3] The tape cassette according to claim 2, wherein a roller support shaft (100) adapted to rotatably support the tape feed roller (46) is to be fitted in the insert hole (46D) of the tape feed roller (46) via the one of the first and second of cavities (64 and 47).

[Claim 4] The tape cassette according to any one of claims 1 to 3, further comprising an ink ribbon (60) wound and mounted within the housing (31) to be used for printing on a print medium tape (55, 57, 59), the print medium tape (55, 57, 59) being one of the at least one tape (55, 57, 58, 59);
wherein:

a center of gravity of the first tape (55, 57, 58) is located in the first area (30C); and

a center of gravity of the ink ribbon (60) is located in a second area (30D), the second area (30D) being one of the two areas (30C and 30D) other than the first area (30C).

[Claim 5] The tape cassette according to any one of claims 1 to 3, wherein the first tape is a wound heat-sensitive tape (55).

[Claim 6] The tape cassette according to any one of claims 1 to 5, wherein at least one of the first, second and third cavities (64, 47 and 65) is formed as a through-hole that extends through the top wall (35) and the bottom wall (36) at respective positions opposing each other in a vertical direction of the housing (31).

[Claim 7] The tape cassette according to any one of claims 1 to 5, wherein at least one of the first, second and third cavities (64, 47 and 65) is formed as an indentation extending upwards inside the housing (31) from an opening provided in the bottom wall (36).

[Claim 8] The tape cassette according to any one of claims 1 to 7, wherein one (47) of the first and second cavities (64 and 47) extends from an elongated opening.

[Claim 9] The tape cassette according to claim 8, wherein the elongated opening has a width to allow at least a part of a side portion of a guide shaft (120) to be tightly engaged when the guide shaft (120) is inserted therein, the guide shaft (120) being adapted to guide the tape cassette (30) when the tape cassette is installed in or removed from a tape printer (1).

[Claim 10] The tape cassette according to any one of claims 1 to 9, wherein a center of gravity of the tape cassette (30) is located in an area defined by a line connecting the first, second and third cavities (64, 47 and 65).

[Claim 11] A tape printer (1) comprising:

a tape cassette (30) that includes:

a generally rectangular box-like housing (31) having a top wall (35), a bottom wall (36), and a side wall (37) defining a periphery of the housing (31);

a first and second cavities (64 and 47) extending from the bottom wall (36) and disposed between a tape containing area and the periphery at opposite ends of a diagonal of the generally rectangular box-like housing (31), the tape containing area being defined within the periphery, and the diagonal connecting a first corner portion and a

second corner portion of the generally rectangular box-like housing (31);

at least one tape (55, 57, 58, 59) wound and mounted within the housing (31) in the tape containing area, the at least one tape including a first tape (55, 57, 58) disposed in a first area (30C), the first tape (55, 57, 58) having a hole (40D) at a center of winding, and the first area (30C) being one of two areas (30C and 30D) formed by dividing the housing (31) with respect to a line connecting the first and second cavities (64 and 47); and

a third cavity (65) that extends in the hole (40D) of the first tape (55, 57, 58) from the bottom wall (36);

a cassette housing portion (8) in which or from which the tape cassette (30) is installable or removable in an installation/removal direction, the installation/removal direction being a direction in which the top wall (35) and the bottom wall (36) are opposing each other;

a tape feeding device (23) that is adapted to draw out the at least one tape (55, 57, 58, 59) of the tape cassette (30) installed in the cassette housing portion (8) along a predetermined feed path;

a printing device (10) that is adapted to perform printing on a print medium tape (55, 57, 59) of the at least one tape (55, 57, 58, 59) fed by the tape feeding device (23) at a print position on the predetermined feed path;

three guide shafts that are adapted to be inserted in the first, second and third cavities (64, 47 and 65) and guide the tape cassette (30) when the tape cassette is installed in or removed from the cassette housing portion (8) in the installation/removal direction, the three guide shafts including:

a first guide shaft (100) disposed at a first position that opposes the first cavity (64) when the tape cassette (30) is installed in the cassette housing portion (8);

a second guide shaft (120) disposed at a second position that opposes the second cavity (47) when the tape cassette (30) is installed in the cassette housing portion (8); and

a third guide shaft (110) disposed at a third position that opposes the third cavity (65) when the tape cassette (30) is installed in the cassette housing portion (8).

[Claim 12] The tape printer according to claim 11, wherein:

the tape cassette includes a tape feed roller (46) that has a cylindrical

shape, that is rotatably disposed between the top wall (35) and the bottom wall (36), and that has an insert hole (46D) that opens in the bottom wall (36) via the first cavity (64); and
the first guide shaft (100) is adapted to be inserted in the tape feed roller (46) via the first cavity (64) to rotatably support the tape feed roller (46) and transmit a rotational drive force caused by the tape feeding device (23) to the tape feed roller (46), thereby causing the tape feed roller (46) to draw out the at least one tape (55, 57, 58, 59).

[Claim 13] The tape printer according to claim 11 or 12, wherein:
the tape cassette (30) includes:
an ink ribbon (60) wound and mounted within the housing (31) to be used for printing on the print medium tape (55, 57, 59); and
a ribbon take-up spool (44) that has a cylindrical shape and that is rotatably disposed within the housing (31) to draw out and take up the ink ribbon (60),
and wherein:
the tape printer (1) further includes a ribbon take-up shaft (95) adapted to be fitted in the ribbon take-up spool (44) and rotate the ribbon take-up spool around an axis of the ribbon take-up shaft (95), thereby causing the ribbon take-up spool (44) to draw out and take up the ink ribbon (60);
the third guide shaft (110) is disposed in a first installation area (8E), the first installation area (8E) being one of two areas (8E and 8F) formed by dividing the cassette housing portion (8) with respect to a line connecting the first guide shaft (100) and the second guide shaft (120); and
the ribbon take-up shaft (95) is disposed in a second installation area (8F), the second installation area (8F) being one of the two areas (8E and 8F) other than the first area (8E).

[Claim 14] The tape printer according to any one of claims 11 to 13, wherein:
the second cavity (47) extends from an elongated opening that has a width to allow at least a part of a side portion of the second guide shaft (120) to be tightly engaged when the second guide shaft (120) is inserted therein; and
when the tape cassette (30) is installed at a proper position in the cassette housing portion (8), the second guide shaft (120) inserted in the second cavity (47) engages with the second cavity (47).

[Claim 15] The tape printer according to any one of claims 11 to 14, wherein:

the cassette housing portion (8) has a rectangular opening that corresponds to a plan shape of the box-like housing;
the first guide shaft (100) is disposed in the vicinity of or at a first corner portion of the rectangular opening, the first corner portion of the rectangular opening being one of the corner portions of the rectangular opening and being positioned at a downstream side of the print position in a feed direction of the print medium tape (55, 57, 59); and
the second guide shaft (120) is disposed in the vicinity of or at a second corner portion of the rectangular opening, the second corner portion of the rectangular opening being another corner portion of the rectangular opening and being positioned diagonal to the first corner portion of the rectangular opening.

Claims:

1. A tape cassette comprising:

a box-like cassette case that has a pair of walls and a side wall, the pair of walls being opposed each other and forming rectangular planar portions, the side wall being formed with a predetermined height around peripheries of the pair of walls;

a first opening that is provided in one corner portion of at least one of the pair of walls;

a second opening that is provided in another corner portion located at a diagonal position with respect to the one corner portion of the at least one of the pair of walls and into which a guide shaft that is adapted to guide installation of the tape cassette in the tape printer can be inserted; and

a tape roll that is a wound tape as a print medium and that is housed inside the cassette case such that the tape roll is positioned on a line connecting the first opening and the second opening.

2. The tape cassette according to claim 1, further comprising a cylindrical tape feed roller that is rotatably disposed between the pair of walls and that is adapted to pull out the tape from the tape roll,

wherein

the tape feed roller has an insert hole into which a roller support shaft that is adapted to rotatably support the tape feed roller is to be fitted, and the first opening faces the insert hole of the tape feed roller.

3. The tape cassette according to claim 1 or 2, further comprising:

an adhesive tape roll that is a wound double-sided adhesive tape to be affixed to the tape that has been pulled out from the tape roll and on which printing has been performed;

a ribbon roll that is a wound ink ribbon to be used for printing on the tape; and

a ribbon take-up spool that is adapted to take up the ink ribbon that has been pulled out from the ribbon roll and used for printing,

wherein

the adhesive tape roll is housed inside the cassette case such that a center of gravity of the adhesive tape roll is located in a first area of two areas formed by

dividing the cassette case with respect to the line connecting the first opening and the second opening,

the ribbon roll is housed inside the cassette case such that a center of gravity of the ribbon roll is located in a second area of the two areas that is different from the first area, and

the ribbon take-up spool is disposed inside the cassette case such that a center of gravity of the ribbon take-up spool is located in the second area, and is rotatably supported by the cassette case.

4. The tape cassette according to claim 1 or 2, further comprising:

an adhesive tape roll that is a double-sided adhesive tape that is wound to have a hole at a center of winding and that is housed inside the cassette case such that the adhesive tape roll is located in a first area of two areas formed by dividing the cassette case with respect to the line connecting the first opening and the second opening, the double-sided adhesive tape being adapted to be affixed to the tape that has been pulled out from the tape roll and on which printing has been performed; and

a third opening that is provided in at least one of the pair of walls and faces the hole of the adhesive tape roll.

5. The tape cassette according to any one of claims 1 to 4, wherein the first opening and the second opening are provided in a first wall of the pair of walls that opposes the tape printer when the tape cassette is installed.

6. The tape cassette according to claim 5, wherein at least one of the first opening and the second opening includes through-holes that are provided in the pair of walls and opposed each other in a direction of installation and removal of the tape cassette.

7. The tape cassette according to claim 5, wherein at least one of the first opening and the second opening is an indentation extending in a direction of installation and removal of the tape cassette toward an inside of the cassette case from a hole provided in the first wall.

8. The tape cassette according to any one of claims 1 to 7, wherein the second opening is an elongated hole that has an opening width that allows at least a part of a side surface of

the guide shaft to be tightly engaged when the guide shaft provided in the tape printer corresponding to the second opening is inserted therein.