CLAIMS

1. A device for transmitting a rotational force to an electrophotographic photosensitive drum, comprising:

a rotational force receiving member connectable with the drum and having a rotational axis; and

a coupling member, said coupling member including a driven side portion having a rotational axis and a connecting portion coupling the driven side portion with said rotational force receiving member, the connecting portion being inclinable relative to said rotational force receiving member such that the rotational axis of the driven side portion is inclinable relative to the rotational axis of said rotational force receiving member,

wherein the driven side portion includes a first projection projecting from the connecting portion along a line that crosses the rotational axis of the driven side portion, and the first projection is provided with at least one second projection projecting from a diametrically outermost portion of said the first projection in a direction away from the connecting portion, along a line substantially parallel to the rotational axis of the driven side portion, and wherein a tip of the second projection is defined by at least one slanted surface.

2. A device according to Claim 1, wherein said rotational force receiving member comprises a drum shaft.

3. A device according to Claim 1, wherein the first projection has a recess that is substantially conical expanding away from the connecting portion.

4. A device according to Claim 1, further comprising a spring between the connecting portion and the driven side portion.

5. A device according to Claim 1, wherein the connecting portion connects the driven side portion and said rotational force receiving member with each other such that rotation of the driven side portion about the rotational axis thereof rotates said rotational force receiving member about the rotational axis thereof even when the connecting portion is inclined away from the rotational axis of said rotational force receiving member.

6. A device according to Claim 1, wherein the connecting portion includes a spherical portion engaged with said rotational force receiving member for permitting the inclination of the rotational axis of the driven portion, and the spherical portion has a pin projecting therefrom to rotate said rotational force receiving member by the driven side portion.

7. A device according to Claim 6, wherein said rotational force receiving member comprises a flange.

8. A device according to Claim 2, wherein said rotational force receiving member further comprises a flange.

9. A device according to Claim 8, wherein said drum shaft and said flange are formed integrally.

10. A device according to Claim 8, wherein said rotational force receiving member further comprises a pin.

11. A device according to Claim 1, wherein the connecting portion is engaged with said rotational force receiving member via a pin.

12. A device for transmitting a rotational force to an electrophotographic photosensitive drum, comprising:

a rotational force receiving member connectable with the drum and having a rotational axis L1; and

a coupling member, said coupling member including a driven side portion having a rotational axis L2 and a connecting portion coupling the driven side portion with said rotational force receiving member, the coupling member being movable between a first position in which the axis L2 of the driven side portion is coaxial with the axis L1 of the rotational force receiving member, and a second position in which the axis L2 of the driven side portion is inclined with respect to the axis L1 of the rotational force receiving member,

wherein the driven side portion includes at least one pair of projections extending away from the connection portion along a line substantially parallel to axis L2, each projection having a tip defined by at least one slanted surface and being a part of the projection farthest from said rotation force receiving member when the coupling member is in the first position, and

wherein, when the coupling member is in the first position, the tip of each projection is the same distance from the rotational force receiving member.

13. A device according to Claim 12, wherein the driven side portion of the coupling member has a recess, the recess being coaxial with the axis L2 and having a semi-spherical shape with an opening facing away from the rotational force receiving member.

14. A device according to Claim 12, wherein, if the distance along the axis L2 between a portion of the recess closest to the rotational force receiving member and a plane that touches the tips of the projections is defined as distance D, when the coupling member moves from the first position to the second position the tip of one projection moves at least about the distance D closer to the rotational force receiving member, as measured in the direction of the axis L1, than when the coupling member is in the first

position.

15. A device to Claim 14, wherein the coupling member is linearly movable with respect to the rotational force receiving member in the direction of the axis L1, and wherein when the coupling member moves from the first position to the second position, the tip of the one projection moves the distance D through a combination of linear movement and inclining of the coupling member.

16. A device according to Claim 15, further comprising a spring for biasing the coupling member in the direction of the axis L1.

17. A device according to Claim 12, wherein the coupling member can be inclined in substantially any direction with respect to the axis L1.

18. A device according to Claim 70, wherein said rotational force receiving member comprises a drum shaft.

19. A device according to Claim 18, wherein said rotational force receiving member further comprises a flange.

20. A device for transmitting a rotational force to an electrophotographic photosensitive drum, comprising:

a rotational force receiving member connectable with the drum and having a rotational axis L1; and

a coupling member, said coupling member including a driven side portion having a rotational axis L2 and a connecting portion coupling the driven side portion with said rotational force receiving member, said coupling member being movable between a first position in which the axis L2 of the driven side portion is coaxial with the axis L1 of the rotational force receiving member, and a second position in which the axis L2 of the driven side portion is inclined with respect to the axis L1 of the rotational force receiving member,

wherein the driven side portion of the coupling member has a recess, the recess being coaxial with the axis L2, diverging away from the rotary member, and having a rotationally symmetric shape with an opening facing away from the rotary member.

21. A device according to Claim 20, wherein the recess has a conical shape.

22. A device according to Claim 20, wherein the recess has a semi-spherical shape.

23. A device according to Claim 20, wherein the driven side portion has at least one pair of projections extending substantially in the same direction as the axis L2 away from the connecting portion, each projection having a tip that is a surface of the projection farthest from the rotary member when the coupling member is in the first position, and

wherein, when the coupling member is in the first position, the tip of each projection is the same distance from the rotary member.

24. A device according to Claim 23, wherein, if the distance along the axis -58 between a portion of the recess closest to the rotation force receiving member and a plane that touches the tips of the projections is defined as distance D, when the coupling member moves from the first position to the second position the tip of one projection moves at least about the distance D closer to the rotation force receiving member, as measured in the direction of the axis L1, than when the coupling member is in the first position.

25. A device according to Claim 24, wherein the coupling member is linearly movable in the direction of the axis L1, and wherein when the coupling member moves from the first position to the second position, the tip of the one projection moves the distance D through a combination of linear movement and inclining of the coupling member.

26. A device according to Claim 25, further comprising a spring for biasing the coupling member along the axis L1.

27. A device according to Claim 20, wherein the coupling member can be inclined in substantially any direction with respect to the axis L1.

28. A device for transmitting a rotation force to an electrophotographic photosensitive drum, comprising:

a rotational force receiving member connectable with the drum and having a rotational axis L1; and

a coupling member having a longitudinal axis L2 and engageable with the rotational force receiving member, the coupling member comprising (i) a first portion that is relatively nearer to the rotational force receiving member,

a second portion, at least part of the second portion having a diameter in a direction perpendicular to the axis L2 that is greater than a diameter of the first portion in the direction perpendicular to the axis L2, and a third portion comprising at least one pair of projections extending from the second portion in the same direction as the axis L2 and away from the rotational force receiving member,

wherein the coupling member is movable between a first position in which the axis L2 of the coupling member is coaxial with the axis L1 of the rotational force receiving member, and a second position in which the axis L2 of the coupling member is inclined with respect to the axis L1 of the rotational force receiving member.

29. A device according to Claim 28, wherein an outer surface of the second portion of the coupling member has a conical shape.

30. A device according to Claim 28, wherein the coupling member can be inclined in substantially any direction with respect to the axis L1.

31. A device according to Claim 28, wherein a maximum angle of inclination of the axis L2 with respect to the axis L1 is at least 35 degrees.

32. A device according to Claim 28, wherein the second portion of the coupling member has a recess, the recess being coaxial with the axis L2 and having a semi-spherical shape with an opening facing away from the rotary member.

33. A device according to Claim 28 wherein the first portion, the second portion, and the third portion of the coupling member are integrally formed.

CLAIMS

What is claimed is:

1. An electrophotographic photosensitive drum unit comprising:

(a) a cylinder having a photosensitive layer at an outer periphery thereof; and

(b) a drum flange provided at one end of the cylinder, the drum flange including at least two projections provided inside of the drum flange and projected radially inwardly of the drum flange, with a space diametrically between the two projections,

wherein each of the two projections projects radially inwardly of the drum flange to a greater extent at a position farther from the cylinder than it does at a position closer to the cylinder.

2. A drum unit according to claim 1, wherein each of the two projections extends radially inwardly of the drum to the greatest extent at an outer end of the projection in a longitudinal direction of the cylinder.

3. A drum unit according to claim 1, further comprising a gear portion provided along an outer surface of the drum flange.

4. A drum unit according to claim 3, wherein the two projections are provided at substantially the same position as the gear portion with respect to a longitudinal direction of the cylinder.

5. A drum unit according to claim 1, wherein the drum flange includes more than two projections provided inside of the drum flange and projected radially inwardly of the drum flange, and each projection is circumferentially spaced apart from each adjacent projection.

6. A drum unit according to claim 1, further comprising a coupling member engaged with the drum flange so that an axis of the coupling member is inclinable with respect to an axis of the cylinder.

7. A drum unit according to claim 6, wherein the coupling member includes a first end portion engaged with the drum flange, a second end portion, and a connecting portion connecting the first end portion and the second end portion, and the space diametrically between the two projections is narrower than a maximum width of the first end portion.

8. A drum unit according to claim 7, wherein the space diametrically between the two projections is wider than a maximum width of the connecting portion.

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