CLAIMS

Claim 1. A photosensitive member unit detachably mountable to a main assembly of an image forming apparatus, the photosensitive member unit comprising:

a photosensitive member rotatable about a rotational axis thereof;

a rotatable first helical gear portion;

a second helical gear portion integrally rotatable with the first helical gear portion; and

a twisting direction of a tooth of the second helical gear portion is the same as a twisting direction of a tooth of the first helical gear portion, and a helix angle of the tooth of the second helical gear portion is larger than a helix angle of the tooth of the first helical gear portion.

Claim 2. A photosensitive member unit according to Claim 1, wherein with respect to the rotational axis of the photosensitive member, the second helical gear portion is provided between the photosensitive member and the first helical gear portion.

Claim 3. A photosensitive member unit according to Claim 1 or 2, wherein with respect to the rotational axis of the photosensitive member, a gap is formed between the first helical gear portion and the second helical gear portion.

Claim 4. A photosensitive member unit according to Claim 3, further comprising an intermediary member provided between the first helical gear portion and the second helical gear portion with respect to the rotational axis of the

photosensitive member, the intermediary member being capable of filling the gap.

Claim 5. A photosensitive member unit according to Claim 4, wherein the intermediary member is movable between a position for providing the gap and a position for filling the gap, by rotation thereof.

Claim 6. A photosensitive member unit according to Claim 4, wherein the intermediary member is movable between the position for providing the gap and the position for filling the gap, by movement thereof in a direction perpendicular to the rotational axis of the photosensitive member.

Claim 7. A photosensitive member unit according to Claim 4, wherein the intermediary member is made of an elastic member and is capable of taking a position for providing the gap and a position for filling the gap, by elastic deformation thereof.

Claim 8. A photosensitive member unit according to any one of Claims 3-7, wherein with respect to the rotational axis of the photosensitive member, a tooth width Wc of the first helical gear portion and a width We a gap satisfy,

$$Wc > We \# Wc/5.$$

Claim 9. A photosensitive member unit according to Claim 8, wherein with respect to the rotational axis of the photosensitive member, a width We of the gap and a tooth width Wd of the second helical gear portion satisfy,

$$Wd > We.$$

Claim 10. A photosensitive member unit according to any one of Claims 1-9, wherein the first helical gear portion and the second helical gear portion each have at least one tooth having a width satisfying,

$$Wc > Wd$$

where Wc is a tooth width of the first helical gear portion, and Wd is a tooth width of the second helical gear portion, measured in the direction of the rotational axis of the photosensitive member.

Claim 11. A photosensitive member unit according to Claim 10, wherein a tooth width Wc1 of the tooth of the first helical gear portion that has a largest tooth width measured in the direction of the rotational axis of the photosensitive member and a tooth width Wd1 of the tooth of the second helical gear portion that has a largest tooth width measured in the direction of the rotational axis of the photosensitive member satisfy,

$$Wd1 \text{ " } (4/5) \cdot Wc1.$$

Claim 12. A photosensitive member unit according to Claim 10, wherein a tooth width Wc1 of the tooth of the first helical gear portion that has a largest tooth width measured in the direction of the rotational axis of the photosensitive member and a tooth width Wd1 of the tooth of the second helical gear portion that has a largest tooth width measured in the direction of the rotational axis of the photosensitive member satisfy,

$$Wd1 \text{ " } (3/4) \cdot Wc1.$$

Claim 13. A photosensitive member unit according to any one of Claims 10-12, wherein a tooth width Wc1 of the tooth of the first helical gear portionthat has a largest tooth width measured in the direction of the rotational axis of the photosensitive member and a tooth width Wd1 of the tooth of the second helical gear portion that has a largest tooth width measured in the direction of the rotational axis of the photosensitive member satisfy,

$$Wd1 \text{ \# } (1/10) \cdot Wc1.$$

Claim 14. A photosensitive member unit according to any one of

Claims 1-10, wherein a helix angle of the tooth of the first helical gear portion is notless than 15° and not more than 40°.

Claim 15. A photosensitive member unit according to Claim 14, wherein the helix angle of the tooth of the first helical gear portion is not less than 20° and not more than 35°.

Claim 16. A photosensitive member unit according to any one of Claims 1-12, wherein a helix angle of the tooth of the second helical gear portion isnot less than 20° and not more than 40°.

Claim 17. A photosensitive member unit according to any one of Claims 1-12, wherein a helix angle of the tooth of the second helical gear portion isnot less than 25° and not more than 35°.

Claim 18. A photosensitive member unit according to any one of Claims 1-15, wherein the first helical gear portion includes a plurality of such teeth,at least one of which is constituted by a plurality of first projections provided separately in the direction of the rotational axis of the photosensitive member or in a rotational movement direction of the first helical gear portion.

Claim 19. A photosensitive member unit according to any one of Claims 1-18, wherein the second helical gear portion includes a plurality of such teeth, at least one of which is constituted by a plurality of second projections provided separately in the direction of the rotational axis of the photosensitive member or in a rotational movement direction of the second helical gear portion.

Claim 20. A photosensitive member unit according to any one of Claims 1-19, wherein the first helical gear portion includes a number of such teeth,and the second helical gear portion includes the same number of such teeth.

Claim 21. A photosensitive member unit according to any one of Claims 1-19, wherein the first helical gear portion includes a tooth missing part.

Claim 22. A photosensitive member unit according to any one of Claims 1-19, wherein the second helical gear portion includes a tooth missing part.

Claim 23. A photosensitive member unit according to any one of Claims 1-22, wherein a projecting direction of the first a helical gear portion and a projecting direction of the second a helical gear portion include respective components parallel with the rotational axis of the photosensitive drum.

Claim 24. A photosensitive member unit according to any one of Claims 1-23, further comprising an elastic member covering the first helical gear portion and/or the second helical gear portion.

Claim 25. A photosensitive member unit according to any one of Claims 1-24, wherein while the first helical gear portion and the second helical gear portion are rotated in a predetermined direction, the first a helical gear portion and the second a helical gear portion are in a state that the tooth of the second helical gear portion is fixed so as not to be rotated in a direction opposite to the predetermined direction relative to the first helical gear portion.

Claim 26. A photosensitive member unit according to any one of Claims 1-23, wherein the first helical gear portion is capable of transmitting a driving force to the second helical gear portion.

Claim 27. A photosensitive member unit according to any one of Claims 1-26, wherein the first helical gear portion and the second helical gear portion a rotatable coaxially with each other.

Claim 28. A photosensitive member unit according to Claim 27, wherein a rotational axis of the first helical gear portion and a rotational axis of the second helical gear portion is coaxial with the rotational axis of the photosensitive member.

Claim 29. A photosensitive member unit according to Claim 27 or 28, wherein the first helical gear portion and the second helical gear portion are integrally molded.

Claim 30. A photosensitive member unit according to Claim 29, wherein the first helical gear portion and the second helical gear portion are integrally resin-molded.

Claim 31. A photosensitive member unit according to any one of Claims 27-30, wherein a diameter of an addendum circle of the second helical gear portion is larger than a diameter of a dedendum circle of the first a helical gear portion or 0.8 times a diameter of an addendum circle of the first a helical gear portion, and smaller than 1.1 times the diameter of the addendum circle of the first helical gear portion.

Claim 32. A photosensitive member unit according to Claim 31, wherein the diameter of the addendum circle of the second helical gear portion is larger than 0.9 times the diameter of the addendum circle of the first helical gear portion.

Claim 33. A photosensitive member unit according to any one of Claims 1-26, wherein a rotational axis of the first helical gear portion and a rotational axis of the second helical gear portion are is not coaxial with each other.

Claim 34. A photosensitive member unit according to Claim 33, wherein the rotational axis of the first helical gear portion or the rotational axis of the second helical gear portion are coaxial with the rotational axis of the photosensitive member.

Claim 35. A photosensitive member unit according to Claim 33 or 34, wherein the rotational axis of the first helical gear portion and the rotational axis ofthe second helical gear portion are parallel with each other.

Claim 36. A photosensitive member unit according to any one of Claims 1-26, wherein the first helical gear portion and/or the second helical gear portion are provided on a belt-like member.

Claim 37. A photosensitive member unit according to any one of Claims 1-25, wherein the first helical gear portion connected with the second helicalgear portion so as to be capable of transmitting a driving force.

Claim 38. A photosensitive member unit according to Claim 37, wherein the first helical gear portion is connected with the second helical gear portion with a play in the rotational movement direction.

Claim 39. A photosensitive member unit according to Claim 37 or 38, wherein the first a helical gear portion is capable of being in a connected state of being connected with the second helical gear portion to transit the driving force thereto and in a disconnected state of being incapable of transmitting the driving force to the second helical gear portion.

Claim 40. A photosensitive member unit according to any one of Claims –1-26, wherein the first helical gear portion is connected with the photosensitive member so as to be capable of transmitting a rotational force.

Claim 41. A photosensitive member unit according to any one of Claims 1-26, further comprising a flange mounted to an end of the photosensitive member in the direction of the rotational axis of the photosensitive member, wherein thefirst helical gear portion and the second helical gear portion are provided on the flange.

Claim 42. A photosensitive member unit according to any one of Claims 1-39, further comprising a third gear portion connected so as to be capableof transmitting the driving force to the photosensitive member.