CLAIMS

[Claim 1] A linear motion guide unit including a first raceway member extending in a first direction that is a longitudinal direction, and a second raceway member extending in the first direction and arranged opposite the first raceway member in a second direction that is a direction orthogonal to the first direction, the second raceway member performing linear motion relative to the first raceway member in the first direction, the linear motion guide unit comprising:

a plurality of rollers arranged spaced apart in the first direction such that rolling axes thereof are alternately orthogonal to each other;

a retainer arranged between the first raceway member and the second raceway member in the second direction to retain the plurality of rollers, the retainer having a plurality of pockets provided spaced apart in the first direction, each pocket accommodating the corresponding roller;

a pinion having a plurality of external teeth provided at an outer periphery thereof, the pinion being arranged between the first raceway member and the second raceway member in the second direction and rotatably supported;

a first rack attached to an outer peripheral surface of the first raceway member, the first rack having a plurality of first rack teeth that mesh with the external teeth; and

a second rack attached to an outer peripheral surface of the second raceway member, the second rack having a plurality of second rack teeth that mesh with the external teeth;

the retainer including

a pair of side stays,

a plurality of pillar portions arranged apart from each other in the first direction and connecting the pair of side stays to form the pocket,

a retaining claw that, as viewed from a side where a window portion of the pocket is open, is continuous with a side wall surface of one of the pair of side stays and a side wall surface of the pillar portion and protrudes toward the window portion to prevent the roller from falling out of the pocket, and

a pair of the retaining claws are provided, one on each of the side stays.

[Claim 2] The linear motion guide unit according to claim 1, wherein the retaining claw includes a flat surface that is continuous with the side wall surface of one of the pair of side stays and the side wall surface of the pillar portion.

[Claim 3] The linear motion guide unit according to claim 1 or 2, wherein as viewed from the side where the window portion of the pocket is open, the retaining claw has an isosceles triangular shape with equal sides corresponding to a portion continuous with the side wall surface of the side stay and a portion continuous with the side wall surface of the pillar portion.

[Claim 4] A linear motion guide unit including a first raceway member extending in a first direction that is a longitudinal direction, and a second raceway member extending in the first direction and arranged opposite the first raceway member in a second direction that is a direction orthogonal to the first direction, the second raceway member performing linear motion relative to the first raceway member in the first direction, the linear motion guide unit comprising:

a plurality of rollers arranged spaced apart in the first direction such that rolling axes thereof are alternately orthogonal to each other;

a retainer arranged between the first raceway member and the second raceway member in the second direction to retain the plurality of rollers, the retainer having a plurality of pockets provided spaced apart in the first direction, each pocket accommodating the corresponding roller;

a pinion having a plurality of external teeth provided at an outer periphery thereof, the pinion being arranged between the first raceway member and the second raceway member in the second direction and rotatably supported;

a first rack attached to an outer peripheral surface of the first raceway member, the first rack having a plurality of first rack teeth that mesh with the external teeth; and

a second rack attached to an outer peripheral surface of the second raceway

member, the second rack having a plurality of second rack teeth that mesh with the external teeth;

the retainer including

a roller holding region that holds the plurality of rollers, and

a pinion holding region arranged adjacent to the roller holding region in the first direction, the pinion holding region having a pinion accommodating portion that accommodates the pinion such that the external teeth mesh with the second rack teeth,

the roller holding region and the pinion holding region being configured as one piece,

the linear motion guide unit comprising a pinion cover attached to the pinion holding region such that the pinion is caught between the pinion holding region and the pinion cover and such that the external teeth mesh with the first rack teeth, and

a pair of the retaining claws are provided, one on each of the side stays.

[Claim 5] The linear motion guide unit according to claim 4, wherein the retaining claw includes a flat surface that is continuous with the side wall surface of one of the pair of side stays and the side wall surface of the pillar portion.

[Claim 6] The linear motion guide unit according to claim 4 or 5, wherein as viewed from the side where the window portion of the pocket is open, the retaining claw has an isosceles triangular shape with equal sides corresponding to a portion continuous with the side wall surface of the side stay and a portion continuous with the side wall surface of the pillar portion.