[CLAIMS]

What is claimed is:

[Claim 1]

An intersecting track comprising:

two main tracks on which a vehicle runs;

a pair of first guide portions that are disposed in the two main tracks and guide a pair of first guide wheels on both side parts of the vehicle on an outside thereof;

a pair of crossover tracks that are disposed over the two main tracks to intersect each other and enable the vehicle to run between the two main tracks;

a second guide portion that is disposed inside each of the pair of crossover tracks and guides a second guide wheel disposed under the vehicle;

a switching portion that is disposed in each of the main tracks and switches a direction of the vehicle to a direction along the main track and a direction along the crossover track; and

a switching device that is disposed in an intersecting area of the second guide portions in the pair of crossover tracks, selectively switches a direction to a direction along one of the second guide portions and a direction along the other of the second guide portions, and guides the second guide wheel in any one of the directions.

[Claim 2]

The intersecting track according to claim 1, wherein the switching device includes:

a rotating body that is disposed to be rotatable on top surfaces of the crossover tracks with an axis passing through the center of the intersection area as a rotation axis and has a guide groove formed therein which the second guide wheel passes through and which guides the second guide wheel from both sides in a width direction of the

crossover track; and

a driving unit that rotationally drives the rotating body.

[Claim 3]

The intersecting track according to claim 2, wherein the driving unit includes:

a rod portion that is disposed to be movable forward and backward in a direction intersecting the rotation axis and has a rack gear formed at a first end thereof; and

a link portion that has a pinion gear which engages with the rack gear and which rotates about an axis parallel to the rotation axis in response to forward and backward movement of the rod portion and causes the rotating body to rotate in response to the rotation of the pinion gear.

[Claim 4]

A switching device that is disposed in an intersecting track including two main tracks on which a vehicle runs, a first guide portion that is disposed in the two main tracks and guides a first guide wheel of the vehicle, a pair of crossover tracks that are disposed over the two main tracks to intersect each other and enable the vehicle to run between the two main tracks, a second guide portion that is disposed inside each of the pair of crossover tracks and guides a second guide wheel disposed under the vehicle, and a switching portion that is disposed in each of the main tracks and switches a direction of the vehicle to a direction along the main track and a direction along the crossover track,

wherein the switching device is disposed in an intersecting area of the second guide portions in the pair of crossover tracks, selectively switches a direction to a direction along one of the second guide portions and a direction along the other of the second guide portions, and guides the second guide wheel in any one of the directions.

[CLAIMS]

What is claimed is:

[Claim 1]

An intersecting track comprising:

two main tracks on which a vehicle runs;

a pair of first guide portions that are disposed in the two main tracks and guide a pair of first guide wheels on both side parts of the vehicle on an outside thereof;

a pair of crossover tracks that are disposed over the two main tracks to intersect each other and enable the vehicle to run between the two main tracks;

a second guide portion that is disposed inside each of the pair of crossover tracks and guides a second guide wheel disposed under the vehicle;

a switching portion that is disposed in each of the main tracks and switches a direction of the vehicle to a direction along the main track and a direction along the crossover track; and

a switching device that is disposed in an intersecting area of the second guide portions in the pair of crossover tracks, selectively switches a direction to a direction along one of the second guide portions and a direction along the other of the second guide portions, and guides the second guide wheel in any one of the directions,

wherein the switching portion includes a pair of switching guide portions that are disposed on each of the main tracks on the both side portions of the vehicle and a switching portion switch that switches the direction of the pair of switching guide portions.

[Claim 2]

The intersecting track according to claim 1, wherein the switching device includes:

a rotating body that is disposed to be rotatable on top surfaces of the crossover tracks with an axis passing through the center of the intersection area as a rotation axis and has a guide groove formed therein which the second guide wheel passes through and which guides the second guide wheel from both sides in a width direction of the crossover track; and

a driving unit that rotationally drives the rotating body.

[Claim 3]

The intersecting track according to claim 2, wherein the driving unit includes:

a rod portion that is disposed to be movable forward and backward in a direction intersecting the rotation axis and has a rack gear formed at a first end thereof; and

a link portion that has a pinion gear which engages with the rack gear and which rotates about an axis parallel to the rotation axis in response to forward and backward movement of the rod portion and causes the rotating body to rotate in response to the rotation of the pinion gear.

[Claim 4]

An intersecting track comprising:

two main tracks on which a vehicle runs;

a pair of first guide portions that are disposed in the two main tracks and guide a pair of first guide wheels on both side parts of the vehicle on an outside thereof;

a pair of crossover tracks that are disposed over the two main tracks to intersect each other and enable the vehicle to run between the two main tracks;

a second guide portion that is disposed inside each of the pair of crossover tracks and guides a second guide wheel disposed under the vehicle;

a switching portion that is disposed in each of the main tracks and switches a direction of the vehicle to a direction along the main track and a direction along the

crossover track; and

a switching device that is disposed in an intersecting area of the second guide portions in the pair of crossover tracks, selectively switches a direction to a direction along one of the second guide portions and a direction along the other of the second guide portions, and guides the second guide wheel in any one of the directions,

wherein the switching device includes:

a rotating body that is disposed to be rotatable on top surfaces of the crossover tracks with an axis passing through the center of the intersection area as a rotation axis and has a guide groove formed therein which the second guide wheel passes through and which guides the second guide wheel from both sides in a width direction of the crossover track; and

a driving unit that rotationally drives the rotating body,

wherein the driving unit includes:

a rod portion that is disposed to be movable forward and backward in a direction intersecting the rotation axis and has a rack gear formed at a first end thereof; and

a link portion that has a pinion gear which engages with the rack gear and which rotates about an axis parallel to the rotation axis in response to forward and backward movement of the rod portion and causes the rotating body to rotate in response to the rotation of the pinion gear, and

wherein the driving unit is provided with a follower rod portion that moves forward and backward and rotates in response to the forward and backward movement of the rod portion and the rotation of the rotating body and that limits the wobble of the rotating body.

[Claim 5]

A switching device that is disposed in an intersecting track including two main

tracks on which a vehicle runs, a first guide portion that is disposed in the two main tracks and guides a first guide wheel of the vehicle, a pair of crossover tracks that are disposed over the two main tracks to intersect each other and enable the vehicle to run between the two main tracks, a second guide portion that is disposed inside each of the pair of crossover tracks and guides a second guide wheel disposed under the vehicle, and a switching portion that is disposed in each of the main tracks and switches a direction of the vehicle to a direction along the main track and a direction along the crossover track,

wherein the switching device is disposed in an intersecting area of the second guide portions in the pair of crossover tracks, selectively switches a direction to a direction along one of the second guide portions and a direction along the other of the second guide portions, and guides the second guide wheel in any one of the directions, and

the switching portion includes a pair of switching guide portions that are disposed on each of the main tracks on the both side portions of the vehicle and a switching portion switch that switches the direction of the pair of switching guide portions.

[Claim 6

The switching device according to claim 5 further comprising:

a rotating body that is disposed to be rotatable on top surfaces of the crossover tracks with an axis passing through the center of the intersection area as a rotation axis and has a guide groove formed therein which the second guide wheel passes through and which guides the second guide wheel from both sides in a width direction of the crossover track; and

a driving unit that rotationally drives the rotating body,

wherein the driving unit includes:

a rod portion that is disposed to be movable forward and backward in a direction intersecting the rotation axis and has a rack gear formed at a first end thereof; and

a link portion that has a pinion gear which engages with the rack gear and which rotates about an axis parallel to the rotation axis in response to forward and backward movement of the rod portion and causes the rotating body to rotate in response to the rotation of the pinion gear, and

wherein the driving unit is provided with a follower rod portion that moves forward and backward and rotates in response to the forward and backward movement of the rod portion and the rotation of the rotating body and that limits the wobble of the rotating body.