CLAIMS

1. A bogie comprising:

running wheels to be rolled on a road surface of guideway;

an axle which is installed on a lower part of a body of a guideway vehicle and to which the running wheels are attached;

a chassis supporting the axle;

a guide device which is configured to be guided by the guideway and is installed on the chassis so as to be capable of turning around a turning axis extending in a vertical direction;

a steering device which is configured to steer the running wheels in response to a turning movement of the guide device when the guide device is turned along a curved section of the guideway;

a tilting device which is connected to the guide device and which is configured to generate a tilting force of directing one side of the body located at an outside of the curved section upward with respect to the other side of the body located at an inside of the curved section in response to the turning movement of the guide device; and

a bolster spring supporting the body of the guideway vehicle from below, wherein the tilting device includes:

a bolster spring receiver supporting the bolster spring from below;

a pair of first hanging link members each of which is installed such that an upper portion of the first hanging link member is connected to one of the axle and the bolster spring receiver with being capable of rotating around a first rotation axis extending in a running direction of the guideway vehicle, and a lower portion of the first hanging link member is connected to the other of the axle and the bolster spring receiver with being capable of rotating around a second axis extending on the running direction of the guideway vehicle, wherein the pair of the first hanging link members are separated away from each other in a width direction of the bogie and are inclined such that a distance between the first hanging link members in the width direction is increased toward a bottom of the bogie from a top; and

a tilt guide member through which the guide device is connected to the body and which is configured to be capable of generating the tilting force by transmitting a turning force of the guide device to the body as a force directed in the width direction at a connection portion between the guide device and the body.

2. The bogie according to claim 1, wherein the tilt guide member includes:

a rod portion which is connected to one of the body of the guideway vehicle and the guide device;

a rod support portion supporting the rod portion so as to be relatively movable in a direction of the rod portion and which is connected to the other of the body and the guide device; and

an elastic member which is installed in the rod support portion and which is configured to apply a force to the rod portion so as to bring the body and the guide device into a former relative position thereof when the guide device is turned.

3. The bogie according to claim 1 or 2, wherein the tilt guide member is configured to connect the guide device to a suspension frame installed on the body of the guideway vehicle so as to connect the chassis to the body.

4. A bogie comprising:

running wheels to be rolled on a road surface of guideway;

an axle which is installed on a lower part of a body of a guideway vehicle and to which the running wheels are attached;

a chassis supporting the axle;

a guide device which is configured to be guided by the guideway and is installed on the chassis so as to be capable of turning around a turning axis extending in a vertical direction;

a steering device which is configured to steer the running wheels in response to a turning movement of the guide device when the guide device is turned along a curved section of the guideway;

a tilting device which is connected to the guide device and which is configured to generate a tilting force of directing one side of the body located at an outside of the curved section upward with respect to the other side of the body located at an inside of the curved section in response to the turning movement of the guide device;

a pair of air springs which are separated away from each other in a width direction of the bogie and which support the body of the guideway vehicle from below as the bolster spring; and

height adjustment valves which are configured to supply air to the air springs and discharge air from the air springs,

wherein the tilting device includes:

a second hanging link member which is connected to the guide device and which is supported such that one end portion of the second hanging link member located at an outside of the curved section is raised upward with respect to the other end portion of the second hanging link member located at an inside of the curved section in response to the turning movement of the guide device; and

a pair of adjusting rods which are installed such that one of the adjusting rods connects one end portion of the second hanging link member to one of the height adjustment valves and the other connects the other end portion of the second hanging link member to the other of the height adjustment valves, and

wherein the second hanging link member includes a support portion which is fixed to the guide frame, a link main body which is disposed so as to intersect the support portion and extends in the width direction, and a connecting rod which connects the link main body to the support portion,

the link main body includes a main body extending in the width direction and a protrusion portion extending upward at the center position of the main body in the width direction, and link main body is formed in an inverse T-shape when viewed from the running direction,

the support portion extends upward in the vertical direction from the guide frame, and is disposed at a position displaced in the width direction from the center position in the width direction of the main body,

the connecting rod extends in the width direction and connects the upper end of the support portion to the upper end of the protrusion portion of the link main body,

when the link member is moved by a rotation of the guide frame, air is supplied to the air spring via the height adjustment valve when the adjusting rod is raised, the air is discharged from the air spring via the height adjustment valve when the adjusting rod is lowered.

5. The bogie according to any one of claims 1 to 4, wherein the axle includes attachment shafts which are configured to allow the running wheels to be attached thereto and to rotate around a center axis in the vertical direction corresponding to a steering axis of the running wheels along with the running wheels, wherein the steering device includes:

a pair of steering arms extending from the attachment shaft in the running direction and which are each rotatable around the center axis of the attachment shaft in accordance with the steering of the running wheels, and

a steering rod which is configured to connect each of the steering arms to the connection portion of the guide device and is rotatable around the center axis in the vertical direction with respect to the guide device and the steering arm,

wherein a distance between the turning axis and the connection portion in the running direction is longer than a length of the steering arm.

6. A guideway vehicle comprising:

the bogie according to any one of claims 1 to 5; and

a body which is supported from below by the chassis.