

Claims

[Claim 1]

A vehicle comprising:

running wheels that travel on a traveling road surface of a track;

a pair of position detection parts that are provided with an interval therebetween in a width direction, and detect distances between themselves and an object to be measured provided on the track along an extending direction of the traveling road surface, and output signals;

a control unit that controls the amount of steering of the running wheels according to the signals output from the position detection parts; and

a steering mechanism that steers the running wheels by the control unit,

wherein each of the position detection parts outputs, as the signal, a signal having characteristics in which an output is increased as the distance from the object to be measured is increased and a rate of change of the output is reduced in a range in which the distance from the object to be measured is equal to or larger than a predetermined value, and is provided so that the distance between the other position detection part and the object

to be measured is increased when the distance between one position detection part and the object to be measured is reduced, and

the control unit controls the amount of steering according to a combined output of the signals output from the pair of the position detection parts.

[Claim 2]

The vehicle according to claim 1,

wherein the pair of position detection parts output the signals so that a rate of change of the combined output of the signals is increased when the vehicle travels at a position deviating from a middle position on the traveling road surface in the width direction and the rate of change of the combined output of the signals is reduced when the vehicle travels at the middle position.

[Claim 3]

A track transportation system comprising:

the vehicle according to claim 1 or 2;

a track that includes a traveling road surface on which the vehicle travels;

an operational control unit that allows the vehicle to travel according to an operational plan by controlling supply of power to the vehicle; and

an object to be measured that is provided on the track along an extending direction of the traveling road surface.

[Claim 4]

The track transportation system according to claim 3, wherein each of the position detection parts includes a sensor having characteristics in which an output of the signal is increased as a distance from the object to be measured is increased and a rate of change of the output of the signal is reduced in a range in which the distance from the object to be measured is equal to or larger than a predetermined value, and

the object to be measured is a guide face of a guide rail that extends in the extending direction of the traveling road surface so as to cross the traveling road surface.

[Claim 5]

The track transportation system according to claim 4, wherein the sensor is an eddy current sensor.

[Claim 6]

The track transportation system according to claim 3, wherein each of the position detection parts includes a sensor having characteristics in which an output of the signal is increased as the distance from the object to be measured is reduced, and

the object to be measured is formed in a shape in which a distance between the object to be measured and the sensor is reduced as the object to be measured approaches the sensor in the width direction and a rate of change of the distance is reduced in a range in which the distance between the object to be measured and the sensor is equal to or smaller than a predetermined value.

[Claim 7]

The track transportation system according to claim 6, wherein the sensor is a laser sensor.

[CLAIMS]

[Claim 1]

A vehicle comprising:

running wheels that travel on a traveling road surface of a track;

a pair of position detection parts that are provided with an interval therebetween in a width direction, and detect distances between themselves and an object to be measured provided on the track along an extending direction of the traveling road surface, and output signals;

a control unit that controls the amount of steering of the running wheels according to the signals output from the position detection parts; and

a steering mechanism that steers the running wheels by the control unit,

wherein each of the position detection parts outputs, as the signal, a signal having characteristics in which an output is increased as the distance from the object to be measured is increased and a rate of change of the output is reduced in a range in which the distance from the object to be measured is equal to or larger than a predetermined value, and is provided so that the distance between the other position detection part and the object to be measured is increased when the distance between one position detection part and the object to be measured is reduced,

the control unit controls the amount of steering according to a combined output of the signals output from the pair of the position detection parts, and

each of the position detection parts is provided on the extension of a rotation axis of the running wheels.

[Claim 2]

The vehicle according to claim 1,

wherein the pair of position detection parts output the signals so that a rate of change of the combined output of the signals is increased when the vehicle travels at a position deviating from a middle position on the traveling road surface in the width direction and the rate of change of the combined output of the signals is reduced when the vehicle travels at the middle position.

[Claim 3]

A track transportation system comprising:

the vehicle according to claim 1 or 2;

a track that includes a traveling road surface on which the vehicle travels;

an operational control unit that allows the vehicle to travel according to an operational plan by controlling supply of power to the vehicle; and

an object to be measured that is provided on the track along an extending direction of the traveling road surface.

[Claim 4]

The track transportation system according to claim 3,

wherein each of the position detection parts includes a sensor having characteristics in which an output of the signal is increased as a distance from the object to be measured is increased and a rate of change of the output of the signal is reduced in a range in which the distance from the object to be measured is equal to or larger than a predetermined value, and

the object to be measured is a guide face of a guide rail that extends in the extending direction of the traveling road surface so as to cross the traveling road surface.

[Claim 5]

The track transportation system according to claim 4,
wherein the sensor is an eddy current sensor.

[Claim 6]

The track transportation system according to claim 3,
wherein each of the position detection parts includes a sensor having characteristics in which an output of the signal is increased as the distance from the object to be measured is reduced, and

the object to be measured is formed in a shape in which a distance between the object to be measured and the sensor is reduced as the object to be measured approaches the sensor in the width direction and a rate of change of the distance is reduced in a range in which the distance between the object to be measured and the sensor is equal to or smaller than a predetermined value.

[Claim 7]

The track transportation system according to claim 6,
wherein the sensor is a laser sensor.