encoders, and the first detectable part and the second detectable part may be racks configured to mesh with gears attached to the encoders. In this traveling vehicle system, the first detector, the second detector, the first detectable part, and the second detectable part can be easily configured.

[0012] The traveling vehicle system according to an aspect of the present invention may further include a first control unit configured to determine, whether the first traveling vehicle is located in the first position and to determine based on a detection result of the first detector, whether the second traveling vehicle is located in the second position based on a detection result of the second detector. The first control unit may control the first traveling vehicle so as not to enter the second area beyond the first position, and may control the second traveling vehicle so as not to enter the ~~connecting portion~~first area beyond the second position. By this configuration, one of the first traveling vehicle and the second traveling vehicle can be prevented from entering the traveling area of the other of the first traveling vehicle and the second traveling vehicle from the shared area.

[0013] The traveling vehicle system according to an aspect of the present invention may further include a third detector configured to detect a third detectable part and a fourth detector configured to detect a fourth detectable part. One of the third detector and the third detectable part may be provided with one of the first traveling vehicle and the shared area, and the other of the third detector and the third detectable part may be provided with the other of the first traveling vehicle and the shared area. One of the fourth detector and the fourth detectable part may be provided with one of the second traveling vehicle and the shared area,

and the other of the fourth detector and the fourth detectable part may be provided with the other of the second traveling vehicle and the shared area. The third detectable part may be disposed at a position detectable by the third detector and also the fourth detectable part may be disposed at a position undetectable by the third detector when the first traveling vehicle is located in the first position being at the end of the first rail member closer to the connecting portion in the shared area. The fourth detectable part may be disposed at a position detectable by the fourth detector and also the third detectable part may be disposed at a position undetectable by the fourth detector when the ~~first~~ second traveling vehicle is located in the second position being at the end of the second rail member closer to the connecting portion in the shared area.

[0014] By this configuration, it is possible to detect whether the first traveling vehicle is located at the end of the first rail member and whether the second traveling vehicle is located at the end of the second rail member in the shared area. Thus, errors between the dimensions of the site where the traveling rail is installed and the product dimensions can be absorbed, and also the first traveling vehicle and the second traveling vehicle can more properly detect their own positions.

[0015] A traveling vehicle system according to an aspect of the present invention includes: a traveling rail including a first rail member and a second rail member extending horizontally; a first traveling vehicle and a second traveling vehicle configured to travel on the traveling rail; a third detector configured to detect a third detectable part; and a fourth detector configured to detect a fourth detectable part. Along the traveling rail, a first area where the first traveling vehicle is able to travel and the second

traveling vehicle is unable to travel; a second area where the second traveling vehicle is able to travel and the first traveling vehicle is unable to travel; and a shared area, provided between the first area and the second area, where both the first traveling vehicle and the second traveling vehicle are able to travel are formed. In the shared area, a connecting portion in which the first rail member and the second rail member are connected with a gap therebetween or so as to be in contact with each other is provided. One of the third detector and the third detectable part is provided with one of the first traveling vehicle and the shared area, and the other of the third detector and the third detectable part is provided with the other of the first traveling vehicle and the shared area. One of the fourth detector and the fourth detectable part is provided with one of the second traveling vehicle and the shared area, and the other of the fourth detector and the fourth detectable part is provided with the other of the second traveling vehicle and the shared area. The third detectable part is disposed at a position detectable by the third detector and the fourth detectable part is disposed at a position undetectable by the third detector when the first traveling vehicle is located in a first position being at an end of the first rail member closer to the connecting portion in the shared area. The fourth detectable part is disposed at a position detectable by the fourth detector and the third detectable part is disposed at a position undetectable by the fourth detector when the ~~first~~ second traveling vehicle is located in a second position being at an end of the second rail member closer to the connecting portion in the shared area.

[0016] In this configuration, the traveling rail is formed by the first rail member and the second rail member. This allows the gap to be formed

CLAIMS

1. A traveling vehicle system comprising:

a traveling rail including a first rail member and a second rail member extending horizontally;

a first traveling vehicle and a second traveling vehicle configured to travel on the traveling rail;

a first detectable part provided with the first rail member and extending along an extending direction of the traveling rail;

a second detectable part provided with the second rail member and extending along the extending direction of the traveling rail;

a first detector provided with the first traveling vehicle and configured to detect the first detectable part; and

a second detector provided with the second traveling vehicle and configured to detect the second detectable part, wherein

along the traveling rail, a first area where the first traveling vehicle is able to travel and the second traveling vehicle is unable to travel; a second area where the second traveling vehicle is able to travel and the first traveling vehicle is unable to travel; and a shared area, provided between the first area and the second area, where both the first traveling vehicle and the second traveling vehicle are able to travel are formed,

the shared area is provided with a connecting portion in which the first rail member and the second rail member are connected with a gap therebetween or so as to be in contact with each other,

the first detectable part is disposed at a position detectable by the first detector and the second detectable part is disposed at a position

undetectable by the first detector when the first traveling vehicle is located in a first position being at an end of the first rail member closer to the connecting portion in the shared area, and

the second detectable part is disposed at a position detectable by the second detector and the first detectable part is disposed at a position undetectable by the second detector when the second traveling vehicle is located in a second position being at an end of the second rail member closer to the connecting portion in the shared area.

2. The traveling vehicle system according to claim 1, wherein the first detectable part and the second detectable part are disposed so as not to overlap each other in the extending direction of the traveling rail.

3. The traveling vehicle system according to claim 1 or 2, wherein the first detectable part and the second detectable part are disposed in a line along the extending direction of the traveling rail.

4. The traveling vehicle system according to any one of claims 1 to 3, wherein

the first detector and the second detector are encoders, and

the first detectable part and the second detectable part are racks configured to mesh with gears attached to the encoders.

5. The traveling vehicle system according to any one of claims 1 to 4, further comprising a first control unit configured to determine whether the first traveling vehicle is located in the first position based on a detection result of the first detector and to determine whether the second traveling vehicle is located in the second position based on a detection result of the second detector, wherein

the first control unit controls the first traveling vehicle so as not

to enter the second area beyond the first position and controls the second traveling vehicle so as not to enter the ~~connecting portion~~first area beyond the second position.

6. The traveling vehicle system according to any one of claims 1 to 5, further comprising:

a third detector configured to detect a third detectable part; and

a fourth detector configured to detect a fourth detectable part, wherein

one of the third detector and the third detectable part is provided with one of the first traveling vehicle and the shared area and the other of the third detector and the third detectable part is provided with the other of the first traveling vehicle and the shared area,

one of the fourth detector and the fourth detectable part is provided with one of the second traveling vehicle and the shared area and the other of the fourth detector and the fourth detectable part is provided with the other of the second traveling vehicle and the shared area,

the third detectable part is disposed at a position detectable by the third detector and the fourth detectable part is disposed at a position undetectable by the third detector when the first traveling vehicle is located in the first position being at the end of the first rail member closer to the connecting portion in the shared area, and

the fourth detectable part is disposed at a position detectable by the fourth detector and the third detectable part is disposed at a position undetectable by the fourth detector when the ~~first~~ second traveling vehicle is located in the second position being at the end of the second rail member closer to the connecting portion in the shared area.

7. A traveling vehicle system comprising:

a traveling rail including a first rail member and a second rail member extending horizontally;

a first traveling vehicle and a second traveling vehicle configured to travel on the traveling rail;

a third detector configured to detect a third detectable part; and

a fourth detector configured to detect a fourth detectable part, wherein

along the traveling rail, a first area where the first traveling vehicle is able to travel and the second traveling vehicle is unable to travel, a second area where the second traveling vehicle is able to travel and the first traveling vehicle is unable to travel, and a shared area provided between the first area and the second area where both the first traveling vehicle and the second traveling vehicle are able to travel are formed,

the shared area is provided with a connecting portion in which the first rail member and the second rail member are connected with a gap therebetween or so as to be in contact with each other,

one of the third detector and the third detectable part is provided with one of the first traveling vehicle and the shared area and the other of the third detector and the third detectable part is provided with the other of the first traveling vehicle and the shared area,

one of the fourth detector and the fourth detectable part is provided with one of the second traveling vehicle and the shared area, and the other of the fourth detector and the fourth detectable part is provided with the other of the second traveling vehicle and the shared area,

the third detectable part is disposed at a position detectable by the third detector and the fourth detectable part is disposed at a position undetectable by the third detector when the first traveling vehicle is located in a first position being at an end of the first rail member closer to the connecting portion in the shared area, and

the fourth detectable part is disposed at a position detectable by the fourth detector and the third detectable part is disposed at a position undetectable by the fourth detector when the ~~first~~ second traveling vehicle is located in a second position being at an end of the second rail member closer to the connecting portion in the shared area.

8. The traveling vehicle system according to claim 7, wherein

the third detector is provided with the first traveling vehicle and the third detectable part is provided in the shared area, and

the fourth detector is provided with the second traveling vehicle and the fourth detectable part is provided in the shared area.

9. The traveling vehicle system according to any one of claims 6 to 8, wherein

the third detector and the fourth detector are sensors, and

the third detectable part and the fourth detectable part are dogs configured to be detected by the sensors.

10. The traveling vehicle system according to any one of claims 6 to 9, further comprising a second control unit configured to stop travel of the first traveling vehicle based on a detection result of the third detector and to stop travel of the second traveling vehicle based on a detection result of the fourth detector.

11. A stocker system comprising:

the traveling vehicle system according to any one of claims 1 to 10;

a first stocker provided such that an article is able to be loaded and unloaded between the first stocker and the first traveling vehicle traveling in the first area;

a second stocker provided such that an article is able to be loaded and unloaded between the second stocker and the second traveling vehicle traveling in the second area; and

a maintenance area disposed between the first stocker and the second stocker along the extending direction of the traveling rail and capable of accommodating the first traveling vehicle and the second traveling vehicles located in the shared area.