CLAIMS

1. A magnetic marker system for achieving assists for vehicle driving operation by a driver or vehicle control for automatic driving independent from driver's operation, the system comprising magnetic markers laid along a road so as to be detectable by a magnetic sensor on a vehicle side, wherein

the magnetic markers are laid so that orientations of magnetic poles are alternately reversed along the road and arranged so that a magnetic field acting on the magnetic sensor is intensified more than a case of a single magnetic marker by interference between magnetic fields of the magnetic markers adjacent to each other as being spaced with a gap along the road.

2. The magnetic marker system in claim 1, wherein magnitude of magnetism with which two of the magnetic markers adjacent to each other along the road act on the vehicle side exhibits a distribution of a sine waveform along the road.

3. The magnetic marker system in claim 1 or 2, wherein an arrangement pitch, which is a gap between the magnetic markers laid along the road, is a length corresponding to a length smaller than a double of an attachment height of the magnetic sensor assumed on the vehicle side.

4. The magnetic marker system in any one of claims 1 to 3, wherein a length of the gap between two of the magnetic markers adjacent to each other along the road is equal to or larger than 1/3 times and smaller than one time of an attachment height of the magnetic sensor assumed on the vehicle side.

5. The magnetic marker system in any one of claims 1 to 4, wherein at least a magnetic marker, which is a part of the magnetic markers laid along the road, is provided with an information providing part which provides information for identifying the magnetic marker.

6. The magnetic marker system in claim 1, wherein a coefficient of correlation between a sensor output waveform measuring a magnitude of a component along a forwarding direction of a vehicle of the magnetic field acting on the magnetic sensor when the vehicle passes over the magnetic marker and a sine wave is equal to or larger than a first threshold value.

7. The magnetic marker system in claim 6, wherein the coefficient of correlation is smaller than a second threshold value.

8. The magnetic marker system in claim 1, wherein an error amount between a sensor output waveform measuring a magnitude of a component along a forwarding direction of a vehicle of the magnetic field acting on the magnetic sensor when the vehicle passes over the magnetic marker and a normalized sine wave is smaller than a third threshold value.

9. The magnetic marker system in any one of claims 6 to 8, wherein the threshold value is changed in accordance with an attachment height of the magnetic sensor.

10. The magnetic marker system in claim 3, wherein the arrangement pitch is within a range of being equal to or

larger than 2/3 times and equal to or smaller than 3/2 times of the attachment height of the magnetic sensor.

11. The magnetic marker system in any one of claims 1 to 10, wherein the magnetic marker includes a flat magnet sheet.

12. The magnetic marker system in claim 11, wherein both front and back surface sides of the magnetic marker are each covered with a resin mold.