

ABSTRACT

[Problem] To provide a pantograph periphery obstruction detection device and detection method whereby erroneous detection is reduced and good precision is obtained.

[Solution] The present disclosure is provided with: a reference camera 5 and a first correction camera 7 that capture images of the pantograph periphery; and an image processing device 11 that processes images from the cameras 5 and 7, the image processing device being provided with a stereo parallelization unit 13 that corrects lens distortion and stereo parallelization and a data processing unit 15 that processes images corrected by the stereo parallelization unit 13, and the data processing unit being provided with a pantograph template setting unit 17 that sets a template for the pantograph, a background removal unit 19 that removes a background, a pantograph detection unit 21 that detects the position of the pantograph, a parallax calculation 23 unit that determines a parallax, which is an amount of deviation of a projection point of an object in each camera image, a three-dimensional coordinate calculation unit 25 that calculates three-dimensional coordinates based on the parallax, an overhead wire detection unit 27 that extracts lines such as overhead wires, an overhead wire support fitting detection unit 29 that detects overhead wire support fittings, and an obstruction determination unit 31 that determines an obstruction based on the distance from the pantograph.

Fig. 3