

ABSTRACT

TRAVELING DIRECTION STATE DETECTION DEVICE AND CART USING
TRAVELING DIRECTION STATE DETECTION DEVICE

5 An object is to provide a traveling direction state
detection device that reliably detects a step, an
inclination, and an opening of a traveling surface on which
wheels travel, and a cart using the device. A traveling
direction state detection device 10 detects a step, an
10 inclination, and an opening of a traveling surface G on
which wheels 12 travel. The device includes: a long-
distance sensor 14 that is installed near the front side of
the wheels 12 in a traveling direction X and linearly
measures a distance L1 to a first linear position LN1
15 perpendicular to the traveling direction X, the first
linear position LN1 being on the traveling surface G
diagonally downward in the traveling direction; a short-
distance sensor 16 that linearly measures a distance L2 to
a second linear position LN2 perpendicular to the traveling
20 direction X, the second linear position LN2 being on the
traveling surface G diagonally downward in the traveling
direction that is behind in the traveling direction X, and
ahead of ground contact points P of the wheels 12 in the
traveling direction X; and a detection unit 18 that detects
25 a step, an inclination, and an opening of the traveling
surface G based on an amount of change in the distances L1
and L2 that are continuously measured by the long-distance
sensor 14 and the short-distance sensor 16 at certain time
intervals.

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FIG.1