

ABSTRACT

LOWERING COLLISION AVOIDANCE DEVICE OF CRANE

A lowering collision avoidance device includes a container detector, a rope winding speed detector, a rangefinder for detecting the distance to an adjacent container, a rope length detector, and a controller which controls a hoisting/lowering drive motor, thereby controlling the lowering speed, in such a manner that when the container detector becomes ON, a lowering stop action is performed to start decreasing the lowering speed at a predetermined rate; even during this period, the remaining lowering distance and a normal stopping distance are computed; and when the container detector becomes OFF for one period of swing computed from the rope length detected by the rope length detector, and after a judgment is made that the risk of collision of a lowered container with the adjacent container has vanished, lowering is resumed if the remaining lowering distance is larger than the normal stopping distance, or an emergency stop action is performed if the remaining lowering distance is not larger than the normal stopping distance. Thus, the container can be lowered rapidly to a place where obstacles such as containers stacked in layers are located, with the collision of the container with the obstacle being prevented.

FIGURE 1