

Title (en)
Calculation of collision avoiding trajectory

Title (de)
Berechnung der kollisionsvermeidenden Bahn

Title (fr)
Calcul de trajectoire pour éviter les collisions

Publication
EP 2402280 A1 20120104 (EN)

Application
EP 10167938 A 20100630

Priority
EP 10167938 A 20100630

Abstract (en)
A method is presented of calculating a trajectory for a crane (50) to move a load (12) from a starting position (11a) to a destination position (11b). The method comprises the steps of: obtaining (60) data representing obstacles (15a-e) restricting a path from the starting position to the destination position of the load; calculating (62) a trajectory (22) for the load to follow. The step of calculating includes the use of a two dimensional geometrical model (5), wherein the model comprises a first set of geometrical figures (30a,30b,30c,30e), wherein each geometrical figure of the first set corresponds in position to a side (17a,17b,17c,17e) of one of the obstacles, and a second geometrical figure (31) representing potential positions of the load in the case of swinging, wherein the trajectory is calculated such that the second geometrical figure avoids intersecting any of the geometrical figures of the first set.

IPC 8 full level
B66C 13/48 (2006.01)

CPC (source: EP)
B66C 13/48 (2013.01)

Citation (applicant)
US 6065619 A 20000523 - MIYATA NORIAKI [JP], et al

Citation (search report)
• [XD] US 6065619 A 20000523 - MIYATA NORIAKI [JP], et al
• [A] US 4753357 A 19880628 - MIYOSHI YASUMA [JP], et al
• [A] JP H07315763 A 19951205 - YASKAWA ELECTRIC CORP
• [A] HUANG Y ET AL: "The optimum route problem by genetic algorithm for loading/unloading of yard crane", COMPUTERS & INDUSTRIAL ENGINEERING, PERGAMON, vol. 56, no. 3, 1 April 2009 (2009-04-01), pages 993 - 1001, XP025962128, ISSN: 0360-8352, [retrieved on 20080927], DOI: 10.1016/J.CIE.2008.09.035

Cited by
EP3733586A1; EP2855332A4; US9718651B2; US11565916B2; US10899587B2; EP4186847A1; JP2022079534A; JP2020183288A; EP3461783A1; CN109573836A; EP4186848A1; WO2013175075A1; WO2020221490A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

Designated extension state (EPC)
BA ME RS

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