



- (51) **International Patent Classification:**
G01S 17/42 (2006.01) *B66C 13/46* (2006.01)
- (21) **International Application Number:**
PCT/FI2012/050331
- (22) **International Filing Date:**
2 April 2012 (02.04.2012)
- (25) **Filing Language:** Finnish
- (26) **Publication Language:** English
- (30) **Priority Data:**
20110159 10 May 2011 (10.05.2011) FI
- (71) **Applicant (for all designated States except US):** CAR-
GOTEC FINLAND OY [FI/FI]; Valmetinkatu 5, FI-
33900 Tampere (FI).
- (72) **Inventor; and**
- (75) **Inventor/Applicant (for US only):** KOUHIA, Jyrki
[FI/FI]; Aukustintie 12, FI-39160 Julkujärvi (FI).
- (74) **Agent:** FORSSÉN & SALOMAA OY; Pöb 981, FI-
00101 Helsinki (FI).

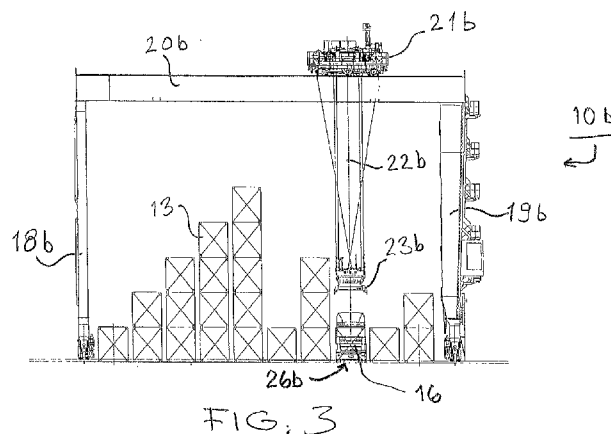
(81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) **Title:** SYSTEM FOR DETERMINATION OF A CONTAINER'S POSITION IN A VEHICLE AND/OR IN ITS TRAILER TO BE LOADED WITH CONTAINERS



(57) **Abstract:** The invention concerns a system for determination of a container's position in a vehicle and/or in its trailer to be loaded with containers (13) in a loading area for containers (13), such as a container freight terminal, where the container or containers (13) are loaded into a vehicle (16) and/or into its trailer and, correspondingly, they are unloaded from this/these by a crane (10b) for handling containers which travels in the loading area above the traffic lane or traffic lanes (26b). The crane is equipped with a container spreader (23b) gripping the containers (13) from above and with a positioning system for the crane (10b) and for the container spreader (23b). The vehicle (16) and, correspondingly, its trailer have locking pins locking into pin holes in the corners of the container (13), whereby the system has laser scanners for determination of the position of the locking pins in the vehicle (16) and/or in its trailer and for determination of the container's position depending on these. The laser scanner/laser scanners are arranged to determine the positions in relation to the ground of the locking pins in the vehicle (16) and/or its trailer parked in the loading area, and the system is arranged to relay the position information determined by the laser scanner to the crane (10b), whereby based on the position information of the crane (10b) and the container spreader (23b) the crane's positioning system is adapted to calculate the position of the locking pins in relation to the crane (10b).