

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 November 2004 (18.11.2004)

PCT

(10) International Publication Number
WO 2004/098995 A1

(51) International Patent Classification⁷: **B64D 9/00**,
B65G 13/06

(21) International Application Number:
PCT/US2004/013623

(22) International Filing Date: 30 April 2004 (30.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/467,133 2 May 2003 (02.05.2003) US

(71) Applicant (for all designated States except US): **ANCRA
INTERNATIONAL, LLC** [US/US]; 4880 West Rose
Crans Avenue, Hawthorne, CA 90250 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MCCONNELL,
Matthew, S.** [US/US]; 848 Starcrest Street, Brea, CA
92821 (US). **WOLFE, Robert, M.** [US/US]; 24042 Sprig
Street, Mission Viejo, CA 92691 (US). **LEINGANG,
Alan, F.** [US/US]; 28601 Chimney Rock Circle, Trabuco
Canyon, CA 92679 (US).

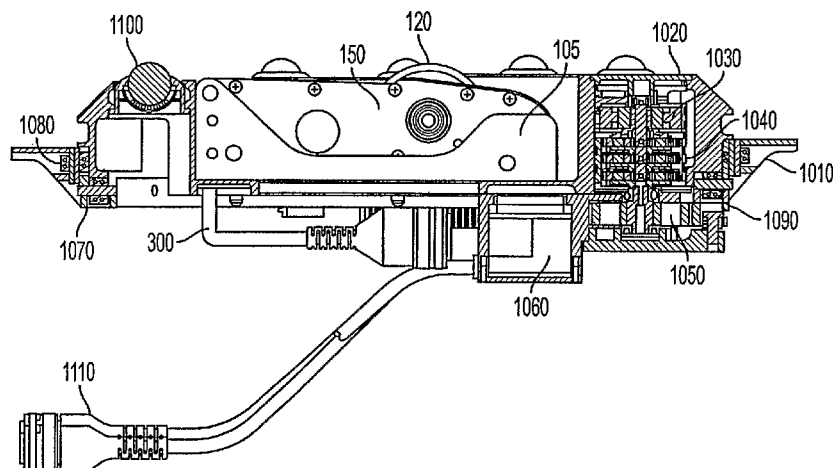
(74) Agent: **MESSINA, Michael, A.**; McDermott, Will
& Emery, 600 13th Street, N.W., Washington, DC
20005-3096 (US).

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

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: STEERABLE /RETRACTABLE CARGO POWER DRIVE UNIT



(57) Abstract: A steerable, retractable power drive unit (SRPDU) is provided for installation into a transport vehicle for moving cargo in mutually perpendicular directions, such as a doorway are where containers need to move both laterally and longitudinally in a cargo vehicle. The SRPDU rotates upon application of an external command, to orient the drive unit in the required direction and to drive the cargo containers. The SRPDU comprises a stationary support (1010) for fixedly attaching to a vehicle structure and a rotating support (1020) rotatably mounted to the stationary support. A drive assembly is movably mounted to the rotating support, the drive assembly comprising a roller (120) and a first electronically controlled electric motor for rotating the roller. A lift assembly (150) mounted to the drive assembly has a second electronically controlled electric motor for moving the drive assembly relative to the rotating support from a retracted position substantially within the rotating support to an extended position with the roller in driving abutment against the cargo. A rotation drive assembly has a third electronically controlled electric motor (1030) on the rotating support for rotating the rotating support relative to the stationary support. An electronic controller (1060) controls the first, second and third motors.

WO 2004/098995 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.