

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
14 November 2024 (14.11.2024)



(10) International Publication Number
WO 2024/233962 A1

(51) International Patent Classification:

B65G 1/06 (2006.01) *B07C 5/36* (2006.01)
B07C 3/08 (2006.01)

(21) International Application Number:

PCT/US2024/028941

(22) International Filing Date:

10 May 2024 (10.05.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/465,870 11 May 2023 (11.05.2023) US

(71) Applicant: **OPEX CORPORATION** [US/—]; 305 Commerce Drive, Moorestown, NJ 08057-4234 (US).

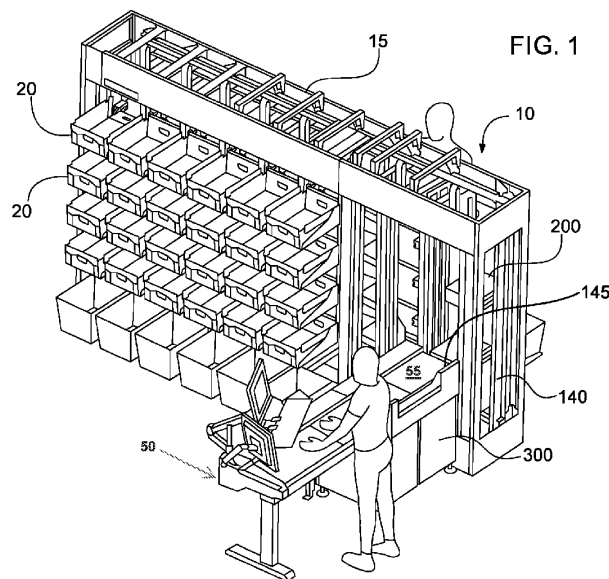
(72) Inventors: **MCVAUGH, Monty**; 305 Commerce Drive, Moorestown, NJ 08057-4234 (US). **VALINSKY, Joseph**;

305 Commerce Drive, Moorestown, NJ 08057-4234 (US). **SHANAHAN, Michael**; 305 Commerce Drive, Moorestown, NJ 08057-4234 (US). **MILLER, Gary**; 305 Commerce Drive, Moorestown, NJ 08057-4234 (US). **O'MARA, Kerry**; 305 Commerce Drive, Moorestown, NJ 08057-4234 (US).

(74) Agent: **DINICOLA, Brian**; 305 Commerce Drive, Moorestown, NJ 08057 (US).

(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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,

(54) Title: METHOD AND APPARATUS FOR RETAINING ITEMS ON MATERIAL HANDLING APPARATUS DELIVERY VEHICLES



(57) Abstract: Respective items are retained as they are transported by mobile delivery mechanisms. An item to be delivered to a target storage location of a plurality of storage locations is positioned upon the carrying surface of a delivery mechanism. The carrying surface defines a retention zone bounded by a first wall, a second wall, a third wall and a fourth wall. At least one of the third wall or the fourth wall are displaceable to define an opening in the retention zone. The delivery mechanism moves from the location where an item is received to a location proximate the target storage location to facilitate transfer of the item through the opening obtained by displacing one of the third wall or the fourth wall. Irregularly shaped items are free - during movement of the delivery mechanism - to move upon the carrying surface and within the boundaries of the retention zone.

[Continued on next page]

WO 2024/233962 A1

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*