

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
22 August 2019 (22.08.2019)



(10) International Publication Number
WO 2019/161187 A1

- (51) **International Patent Classification:**
B64D 1/22 (2006.01) *B64C 39/00* (2006.01)
- (21) **International Application Number:**
PCT/US2019/018203
- (22) **International Filing Date:**
15 February 2019 (15.02.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
15/899,214 19 February 2018 (19.02.2018) US
- (71) **Applicant:** WING AVIATION LLC [US/US]; 100 Mayfield Avenue, Mountain View, CA 94043 (US).
- (72) **Inventor:** PRAGER, Andre; 100 Mayfield Avenue, Mountain View, CA 94043 (US).
- (74) **Agent:** CAVAN, Christopher, M.; McDonnell Boehnen Hulbert & Berghoff LLP, 300 South Wacker Drive, Chicago, IL 60606 (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, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, 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, 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, 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).

(54) **Title:** SYSTEM FOR MID-AIR PAYLOAD RETRIEVAL BY A UAV

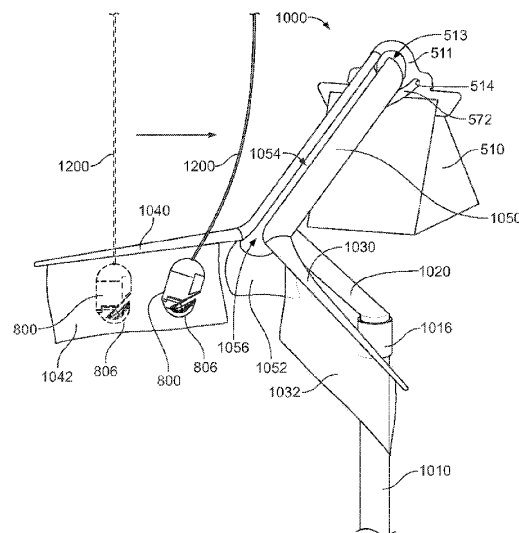


FIG. 14

(57) **Abstract:** An apparatus for retrieval of a payload by a tether attached to a UAV, including an extending member having an upper end and a lower end, a channel having a first end and a second end, the channel first end structurally coupled to the upper end of the extending member, two arms suitable for engagement of the tether attached to the UAV that extend in different directions from the first end of the channel, and a payload holder positioned substantially adjacent the second end of the channel and adapted to secure a payload.

[Continued on next page]

WO 2019/161187 A1

Published:

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