

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
19 December 2019 (19.12.2019)



(10) International Publication Number
WO 2019/241110 A1

(51) International Patent Classification:
B64C 11/28 (2006.01) *B64C 29/00* (2006.01)

(21) International Application Number:
PCT/US2019/036292

(22) International Filing Date:
10 June 2019 (10.06.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
16/007,918 13 June 2018 (13.06.2018) US

(71) Applicant: WING AVIATION LLC [US/US]; 1600 Amphitheatre Parkway, Mountain View, California 94043 (US).

(72) Inventor: PRAGER, André; 1600 Amphitheatre Parkway, Mountain View, California 94043 (US).

(74) Agent: CLAASSEN, Cory G. et al.; Christensen O'Connor Johnson Kindness PLLC, 1201 Third Avenue, Suite 3600, Seattle, Washington 98101-3029 (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: FOLDING CONCENTRICALLY MOUNTED PROPELLER BLADES FOR DRAG REDUCTION

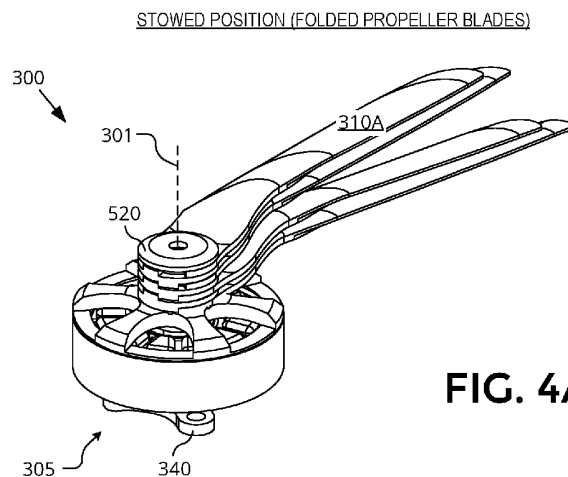


FIG. 4A

(57) Abstract: A propulsion unit includes a motor rotor, propeller blades, and a pivot stop. The motor rotor spins about a central rotational axis. The propeller blades, including first and second propeller blades, each having a proximal base mounted to the motor rotor such that the propeller blades are rotatable about the central rotational axis. The second propeller blade is pivotally attached to the motor rotor to pivot about the central rotational axis independent of the motor rotor by a limited angle. The pivot stop mechanically limits an amount of pivoting of the second propeller blade relative to the first propeller blade.

[Continued on next page]

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))*