

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
17 February 2022 (17.02.2022)



(10) International Publication Number
WO 2022/035759 A1

(51) International Patent Classification:

F03D 3/04 (2006.01) *F03D 7/06* (2006.01)
F03D 3/00 (2006.01) *F03D 9/25* (2016.01)
F03D 3/02 (2006.01) *F03D 3/06* (2006.01)

(21) International Application Number:

PCT/US2021/045216

(22) International Filing Date:

09 August 2021 (09.08.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/063,955 10 August 2020 (10.08.2020) US

(71) Applicant: **VELOCITY WIND TURBINES LLC**
[US/US]; PO Box 9004, Austin, Texas 78766 (US).

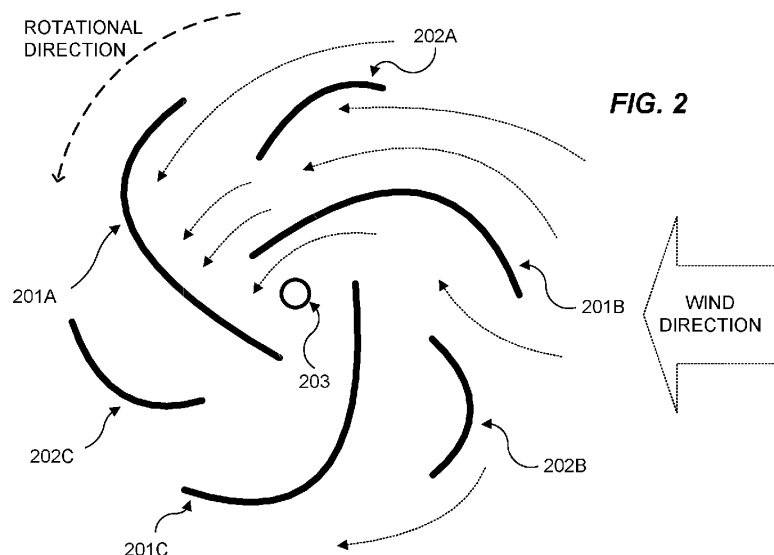
(72) Inventors: **PADEN, Jon**; PO Box 9004, Austin, Texas
78766 (US). **SEVERIN, Paul**; PO Box 9004, Austin, Texas
78766 (US).

(74) Agent: **SCHELL, John**; 5114 Balcones Woods Drive, Ste.
307-193, Austin, Texas 78759 (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, IT, 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, ST, SV, SY, TH, 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, 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,

(54) Title: CONFIGURABLE MULTI-PURPOSE CROSS-FLOW WIND TURBINE WITH PERFORMANCE ENHANCEMENTS



(57) Abstract: A wind turbine rotor includes an axle, a plurality of primary blades disposed at regular intervals around the axle, and a plurality of secondary blades disposed around the axle between primary blades of the plurality of primary blades. Each secondary blade of the plurality of secondary blades is smaller than each primary blade of the plurality of primary blades.

[Continued on next page]

WO 2022/035759 A1

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

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