



- (51) **International Patent Classification:**
B63B 39/06 (2006.01)
- (21) **International Application Number:**
PCT/US2022/038964
- (22) **International Filing Date:**
30 July 2022 (30.07.2022)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/230,253 06 August 2021 (06.08.2021) US
17/877,785 29 July 2022 (29.07.2022) US
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(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, 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, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(54) **Title:** WATER ENGAGEMENT DEVICE ACTUATOR

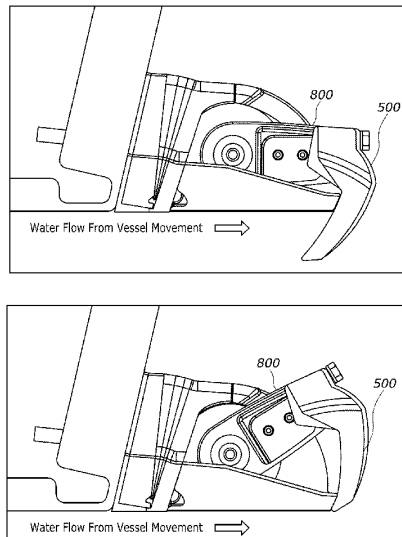


FIG. 3

(57) **Abstract:** A water engagement actuator system and device comprising a rotary actuator connected to a support structure adapted to be connected to a marine vessel is provided. The rotary actuator includes a driven shaft and an undriven slave shaft disposed opposite the driven shaft. The rotary actuator further comprises at least one pair of bearings enclosed within a clean sealed environment; water engagement device having an arced blade connected to the driven shaft; at least one encoder disposed in a space separating the undriven slave shaft from the driven shaft. A controller is communicatively connected to the rotary actuator to command rotation of the driven shaft such that the water engagement device is automatically moved to a position between a retracted position and a deployed position in order to provide dynamic active control of the marine vessel. The rotary actuator is further configured to absorb any hydrodynamic drag load generated from the marine vessel with no more than two rotary shaft seals and counteract any unintended disturbance by automatic deployment of the arced blade - at 100 mm/s or more - into the water and provide dynamic active control of a marine vessel.

[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))*