



(51) International Patent Classification:
A01M 21/04 (2006.01) C02F 1/36 (2023.01)

(21) International Application Number:
PCT/US2024/049457

(22) International Filing Date:
01 October 2024 (01.10.2024)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/587,344 02 October 2023 (02.10.2023) 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, 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,
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,

(54) Title: ALGAE CONTROL BY SWEEPING ULTRASONIC FREQUENCIES

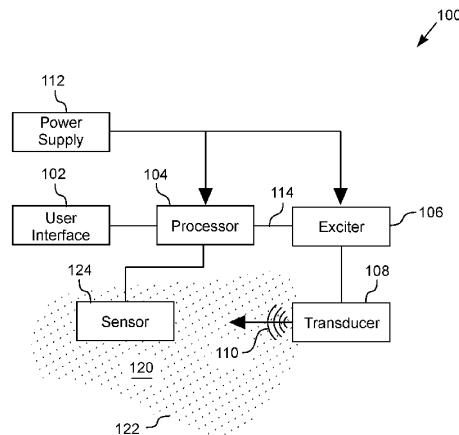


Fig. 1

(57) Abstract: Apparatus for controlling bio-organisms by way of sweeping frequencies emitted by an underwater ultrasonic transducer. An ultrasonic control system includes a processor, an exciter, and at least one transducer. The processor generates signals received by an exciter that causes the transducer to emit a sweeping series of frequencies combined with a pulse or gated output that has a duty cycle. Each pulse or gated output includes one or more frequencies. The apparatus has a gradual remediation startup mode for the condition of high algae concentration. Multiple stages gradually incapacitate the algae until a steady state stage is able to maintain control of algae levels. The first remediation stage has an extended off-time between pulses. The following stages reduce the off-time between pulses until the final, steady state stage.

[Continued on next page]

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).

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- *as to the identity of the inventor (Rule 4.17(i))*
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- *of inventorship (Rule 4.17(iv))*

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))*