

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 August 2024 (08.08.2024)



(10) International Publication Number
WO 2024/159485 A1

(51) International Patent Classification:

A01G 9/02 (2018.01) A01G 27/00 (2006.01)
A01G 31/06 (2006.01)

(21) International Application Number:

PCT/CN2023/074275

(22) International Filing Date:

02 February 2023 (02.02.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(72) Inventor; and

(71) Applicant: HUANG, Junhui [CN/CN]; Room 201, Stair No.2, Block 13, Yuechao New Garden, Chaozhou Avenue, Xiangqiao District, Chaozhou, Guangdong 521000 (CN).

(74) Agent: GUANGZHOU JUNCY INTELLECTUAL PROPERTY AGENCY CO., LTD.; Level 11, Building A2 Times E-park, 280 Hanxi Avenue East, Panyu District, Guangzhou, Guangdong 511495 (CN).

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, 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.

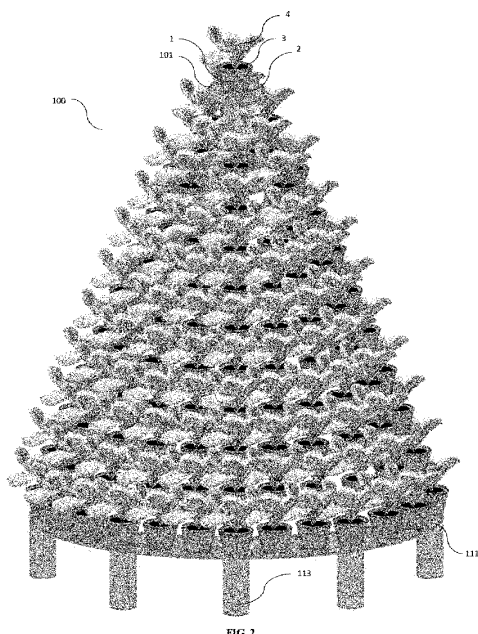
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, 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).

Published:

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

(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,

(54) Title: TREE-TYPE PLANT CULTIVATION DEVICE WITH CONTROLLABLE IRRIGATION FUNCTION FOR IMPROVING LAND UTILIZATION EFFICIENCY



(57) Abstract: A tree-type plant cultivation device (100) with controllable irrigation function comprises a cone-shape main frame having multi-story of stack-up cultivation layers (101-111). Each cultivation layer has an annular sandwich structure reservoir (6) for storing water for sub-irrigation purpose. The upper surface of each cultivation layer has cavities (10) that are uniformly distributed along the layer circumference and adaptable to standardized pots (1) for cultivating plants. Each standardized pot attached by a sponge-made ring configuration (2) fully covers the reservoir cavity to prevent water from evaporation and mosquito from breeding inside the sandwich structure reservoir. Combination of champagne tower theory and sub-irrigation is a controllable way for watering all the plants cultivated in this tree-type plant cultivation device. An approach of improving land utilization efficiency in the greenhouse uses the tree-type plant cultivation device with controllable irrigation function.

WO 2024/159485 A1