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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 November 2011 (03.11.2011)

PCT

(10) International Publication Number
WO 2011/136735 A1

(51) International Patent Classification:
F21V 1/04 (2006.01) *A62B 23/00* (2006.01)
B01D 46/00 (2006.01) *F21W 131/20* (2006.01)

(21) International Application Number:
PCT/SG2010/000167

(22) International Filing Date:
26 April 2010 (26.04.2010)

(25) Filing Language: English

(26) Publication Language: English

(72) Inventor; and
(71) Applicant : **SECK, Hong Chee** [SG/SG]; Apt Block 56, Telok Blangah Heights, #11-159, Singapore 100056 (SG).

(74) Agent: **CHONG, Y F**; P O Box 0399, PSA Building, Singapore 911144 (SG).

(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, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

— *as to non-prejudicial disclosures or exceptions to lack of novelty (Rule 4.17(v))*

[Continued on next page]

(54) Title: HEALTHCARE CUM OPTIMAL ILLUMINATION DEVICE

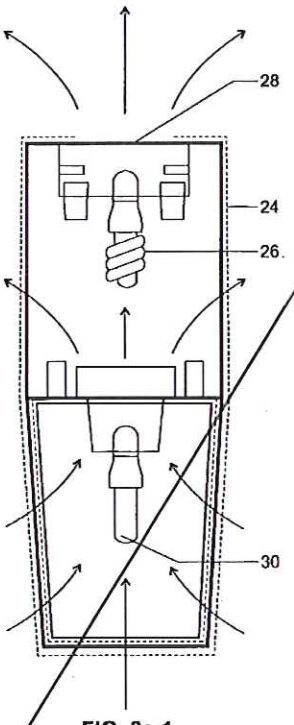


FIG. 3a-1

(57) Abstract: A healthcare cum illumination device comprising a chassis (20) placed at the top end of the modular frame (12) and fitted with electrical light source (26), ionizer (46) and essential oil to form an inventive device. The inventive device is enclosed by one of more layers of treated fabric filter cover (24) with antimicrobial properties. The electrical light source (26) emit visible light, infra red radiation and UV radiation, the visible light illuminating the surrounding, the infra red radiation heating the air around the lamps, so that the hot air rises to form a convection current which draws cool ambient air from the surroundings into the inventive device. Air borne pollutants, virus and bacteria passes through the one or more layers of treated fabric filter cover (24) with anti-bacterial and anti-viral properties are destroyed and trapped, killed therein. The UV light kills air borne virus and bacteria drawn into the inventive device. The inventive device is modular in structure and can be configured to form lamps of varying lengths and sizes. It is fitted with other devices such as air circulation units, ionizers (46), MP3 or MP4 player and essential oils to produce healthy and more pleasant ambience in the surroundings of the inventive device.

WO 2011/136735 A1

Title: HEALTHCARE CUM OPTIMAL ILLUMINATION DEVICE

Abstract: A multifunction healthcare cum optimal illumination device comprising a modular frame (12) enclosed by treated fabric filter cover (24) with anti-glare and air cleaning properties. A chassis (20) placed at the upper end of the frame (12) and fitted with a non-incandescent light source (26), ionizer (46) and essential oil (42) to form an inventive device to clean and detoxify indoor air and surfaces in the surrounding. The light source (26) emits visible light, invisible infra-red radiation and UV radiation with the visible light illuminating the surrounding, the infra-red radiation heating the air in the cavity of the device. Hot air rises to form a convection current which draws the cooler air from the surrounding into the device through the enclosed filter cover (24) which will capture the harmful pollutants in the air current. Photo-catalyst coated on the filter cover, when exposed to the said UV radiation, will decompose the captured hazardous virus, bacteria, fungi, odors, V.O.C., particulates, etc. by strong redox reaction. The inventive device thus makes full / optimal utilization of all radiation emitted by the light source by harnessing the unused invisible IR and UV radiation for air cleaning to improve indoor air quality. With the novel chassis (20), base plate (22) and modular frames (12), the inventive device can be configured to form illuminators of various shapes, sizes and functions with flexi-add-on capabilities. Electric fan (44) is usually fixed on the base plate to greatly increase the speed and volume of airflow to enhance air cleaning by centrifugal vortex airflow upward in the cavity of the device. Audio system (52) with MP3/MP4 player, speakers, microphone, etc., and programmable controller (50) can be fitted onto the base plate. For healthy indoor living and to suit their physical, mental and social well-being, the users may play their favorite recordings, choose their essential oils and their preferred deco-matching fabric covers that can all be easily fitted onto the inventive device to create an ambience of pleasant sound, smell and sight in the surrounding of clean air catering to their mood and health requirements.

Fig. 3a-1