



(51) International Patent Classification:  
*F04D 25/08* (2006.01)

(21) International Application Number:  
PCT/US2013/066987

(22) International Filing Date:  
26 October 2013 (26.10.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
13/662,910 29 October 2012 (29.10.2012) US

(71) Applicant: EXHALE FANS LLC [US/US]; 1231 Bring-  
ham Drive, Sellersberg, IN 47172 (US).

(72) Inventors: HALSALL, Richard; 1231 Bringham Drive,  
Sellersberg, IN 47172 (US). HINER, Nicholas; 1231  
Bringham Drive, Sellersberg, IN 47172 (US).

(74) Agent: HOUTTEMAN, Scott; Kile Park Reed & Houtte-  
man, 3119 Hatcher St, Alexandria, VA 22303 (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, DK, DM,

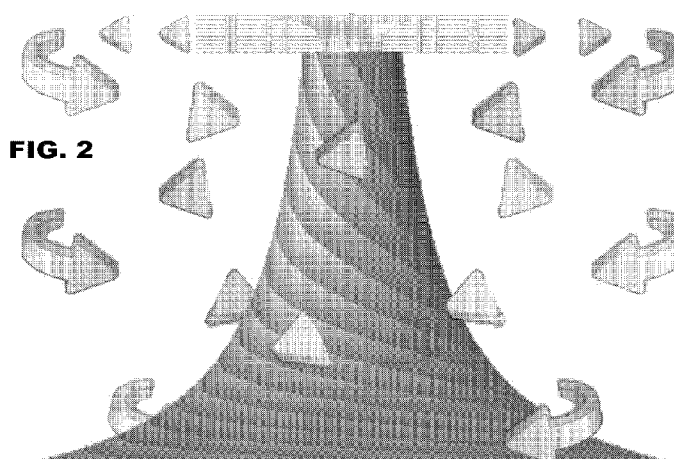
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,  
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,  
KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,  
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,  
OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,  
SC, SD, SE, SG, SK, SL, SM, ST, SV, 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, RW, SD, SL, 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).

**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))

(54) Title: LAMINAR FLOW RADIAL CEILING FAN



(57) Abstract: The prior art has used pitched blades attached to a stationary motor, normally electric, to move air within the confines of a structure or room. The preferred invention incorporates a series of solid discs. The discs are affixed to a stationary electric motor and thus rotate around a central axis. The discs are equally spaced and centrally perforated in a manner that will allow air to flow in high volumes through the perforations and pass along the discs thus exiting symmetrically between each disc perpendicularly to the flow of air that is at its entrance. Due to the less restrictive or low pressure air entrance as well as the correct vertical disc spacing a corresponding increase in the laminar flow is realized. This feature of the preferred invention allows for operation at a rotational speed that practical for use as a ceiling fan.

