

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
13 November 2025 (13.11.2025)



(10) International Publication Number
WO 2025/235001 A1

(51) International Patent Classification:

F24F 9/00 (2006.01) *F24F 13/075* (2006.01)
F24F 13/06 (2006.01)

(21) International Application Number:

PCT/US2024/028611

(22) International Filing Date:

09 May 2024 (09.05.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicants: **AVEX-SG TECHNOLOGY INC.**; No. 38, Jingke 5th Rd., Nantun Dist., Taichung City 408 (TW). **CHEN, Yu-Hua** [US/US]; 208 Schindler Drive, Florham Park, NJ 07932 (US).

(72) Inventors: **CHEN, Jin-Bor**; No. 38, Jingke 5th Rd., Nantun Dist., Taichung City 408 (TW). **HUANG, Tsan-Hua**; No. 38, Jingke 5th Rd., Nantun Dist., Taichung City 408 (TW). **HSU, Shun-Yi**; No. 38, Jingke 5th Rd., Nantun Dist.,

Taichung City 408 (TW). **HSU, Tzu-Hung**; No. 38, Jingke 5th Rd., Nantun Dist., Taichung City 408 (TW).

(74) Agent: **ROSENBERG, Morton J.**; Rosenberg, Klein & Lee, 3458 Ellicott Center Drive, Suite 101, Ellicott City, MD 21043 (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, 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.

(54) Title: AIR CURTAIN STRUCTURE CAPABLE OF REDUCING INTERFERENCE WITH MECHANICAL OPERATIONS

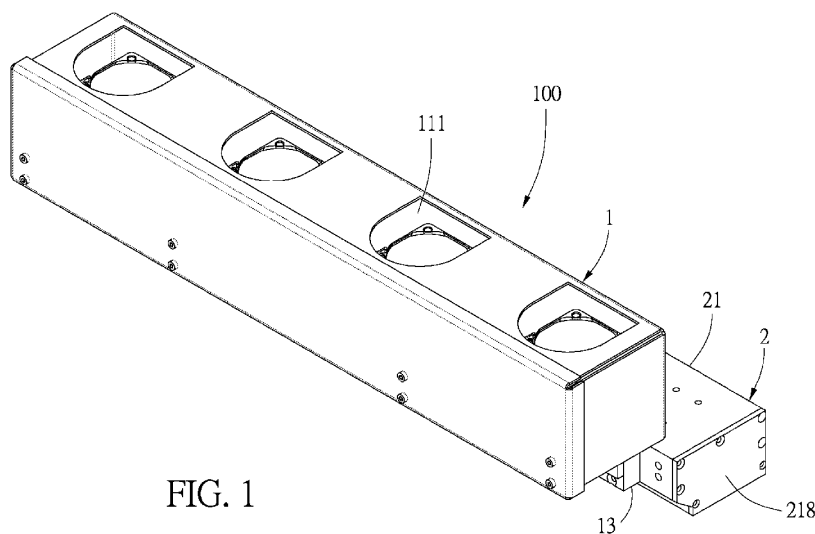


FIG. 1

(57) Abstract: An air curtain structure capable of reducing interference with mechanical operations includes an air guide device and an air curtain device. The air curtain structure is installed in an installation space having an eaves structure. The eaves structure has an extension length. The installation space has a safe distance. The air guide device communicates with a coupling groove of the air curtain device through a connection port. The air curtain device has a casing width. The connection port has a connection length and an embedded depth. The casing width + the connection length - the embedded depth < the safe distance + the extension length, reducing the air curtain structure to interfere with mechanical operations.

[Continued on next page]

WO 2025/235001 A1

(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).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

Published:

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