

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
07 December 2023 (07.12.2023)



(10) International Publication Number
WO 2023/235344 A1

(51) International Patent Classification:

A62C 3/00 (2006.01) A62C 37/44 (2006.01)
A62C 2/24 (2006.01)

(21) International Application Number:

PCT/US2023/023916

(22) International Filing Date:

31 May 2023 (31.05.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/347,387 31 May 2022 (31.05.2022) US

(71) Applicant: **FACTORY MUTUAL INSURANCE COMPANY** [US/US]; 270 Central Avenue, Johnston, RI 02919 (US).

(72) Inventors: **SIENKIEWICZ, Seth**; 1151 Boston-Providence Turnpike, PO Box 9102, Norwood, MA 02062 (US).
RACICOT, Michael; 743 Reynolds Road, West Gloucester, RI 02814 (US).

ter, RI 02814 (US). **GRAVEL, Michael, Jr.**; 743 Reynolds Road, West Gloucester, RI 02814 (US).

(74) Agent: **HALLIDAY, Chris** et al.; DLA Piper LLP (US), One Liberty Place, 1650 Market Street, Suite 5000, Philadelphia, PA 19103 (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.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV,

(54) Title: IN-RACK FIRE DETECTION AND EXTINGUISHING SYSTEM AND METHOD

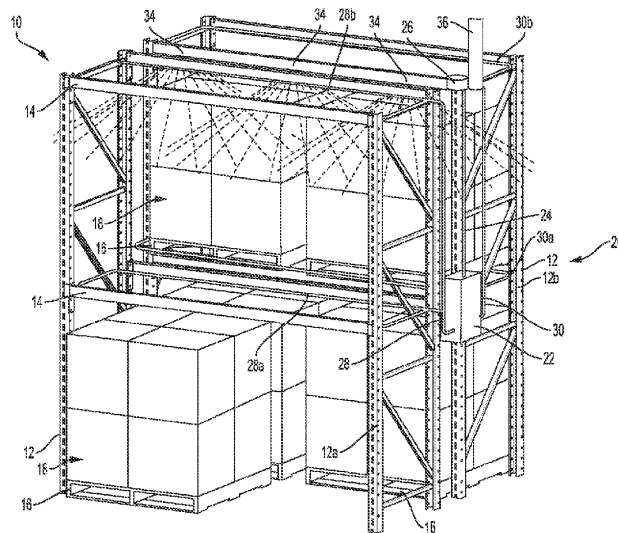


FIG. 1

(57) Abstract: A fire detection and extinguishing system and method for early detection, extinguishing, and prevention of a fire in a rack storage system. The fire detection and extinguishing system may include a valve coupled to one or more discharge orifices, a control panel, and a linear heat detection system. The linear heat detection system may include one or more heat trace wires. The fire detection and extinguishing system may be configured to detect a fire in the storage rack system and discharge a fire extinguishing material from the one or more discharge orifices to extinguish the fire.

[Continued on next page]

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))