

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 November 2020 (26.11.2020)



(10) International Publication Number
WO 2020/235569 A1

(51) International Patent Classification:

E04B 1/30 (2006.01) *E04B 5/43* (2006.01)
E04B 1/58 (2006.01)

(21) International Application Number:

PCT/JP2020/019816

(22) International Filing Date:

19 May 2020 (19.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

1-2019-02687 23 May 2019 (23.05.2019) VN

(71) Applicants: **JFE STEEL CORPORATION** [JP/JP]; 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo, 1000011 (JP). **HCMUT (HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY, VNU-HCM)** [VN/VN]; 268 Ly Thuong Kiet Street, Ward 14, District 10, Ho Chi Minh City, (VN).

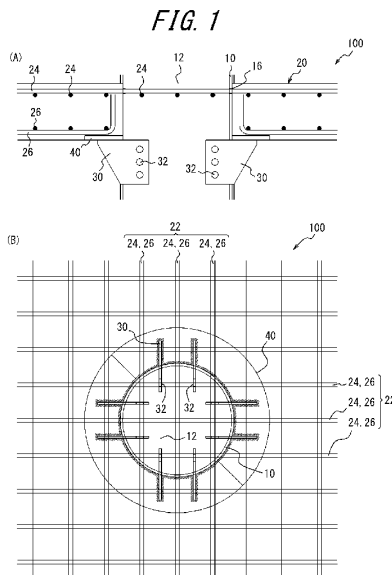
(72) Inventors: **NAKAGAWA Kei**; c/o Intellectual Property Dept., JFE STEEL CORPORATION, 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo, 1000011 (JP). **KAMURA Hisaya**; c/o Intellectual Property Dept., JFE STEEL CORPORATION, 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku,

Tokyo, 1000011 (JP). **ISHII Takumi**; c/o Intellectual Property Dept., JFE STEEL CORPORATION, 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo, 1000011 (JP). **NANBA Takayuki**; c/o Intellectual Property Dept., JFE STEEL CORPORATION, 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo, 1000011 (JP). **OKI Koji**; c/o Intellectual Property Dept., JFE STEEL CORPORATION, 2-3, Uchisaiwai-cho 2-chome, Chiyoda-ku, Tokyo, 1000011 (JP). **NGO-HUU Cuong**; c/o HCMUT (Ho Chi Minh City University of Technology, VNU-HCM), 268 Ly Thuong Kiet Street, Ward 14, District 10, Ho Chi Minh City, (VN).

(74) Agent: **SUGIMURA Kenji**; 36F, Kasumigaseki Common Gate West, 3-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, 1000013 (JP).

(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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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,

(54) Title: CONNECTION OF CONCRETE-FILLED STEEL TUBE COLUMN AND REINFORCED CONCRETE SLAB



(57) Abstract: Disclosed is a connection of a CFT column and an RC slab that can resist larger vertical loads imposed on the RC slab. A connection of a steel tube column 10 infilled with concrete 12 and an RC slab 20 is provided. A plurality of ribs 30 are connected to the steel tube column 10 through slits 14 provided in the steel tube column 10, such that the largest planes of the ribs coincide with a substantially vertical plane. Each of the ribs 30 has two parts, one part being located inside the steel tube column 10 and the other part being located outside the steel tube column 10. A bearing steel plate 40 is connected to the outer circumferential surface of the steel tube column 10 and to the upper ends of the ribs 30, such that the largest plane of the bearing steel plate coincides with a substantially horizontal plane. The RC slab 20 is mounted on the bearing steel plate 40. Each of the ribs 30 has at least one first through-hole 32 in the one part located inside the steel tube column 10.

WO 2020/235569 A1

[Continued on next page]

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, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, 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))