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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 December 2019 (12.12.2019)

WIPO | PCT

(10) International Publication Number
WO 2019/233631 A3

(51) International Patent Classification:
*F16L 3/02* (2006.01) *F16L 3/123* (2006.01)
*F16L 3/10* (2006.01) *F16L 3/11* (2006.01)
*F16L 3/12* (2006.01)

(21) International Application Number:
PCT/EP2019/025172

(22) International Filing Date:
07 June 2019 (07.06.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/682,313 08 June 2018 (08.06.2018) US
16/433,552 06 June 2019 (06.06.2019) US

(71) Applicant: **EATON INTELLIGENT POWER LIMITED** [IE/IE]; 30 Pembroke Road, Dublin 4 (IE).

(72) Inventors: **SCHICKLING, Alexander William**; 3469 Vicksburg Dr., Edwardsville, IL 62025 (US). **GRATTAN, Amelia**; 1714 Pacific Beach Drive #2, San Diego, CA 92109 (US). **JECKSTADT, Gregory**; 8420 Surge Rd, Highland, IL 62249 (US). **EILERMAN, Bret**; 285 Regency Ct., Highland, IL 62249 (US). **BROWN, Zac J.**; 5738 Walsh Street, St. Louis, MO 63109 (US). **TOSUNIAN, Michael**; 1260 Northwood Ave, Brea, CA 92821 (US).

(74) Agent: **BRANDSTOCK LEGAL RECHTSANWALTSGESELLSCHAFT MBH**; Rückertstr. 1, 80336 München (DE).

(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, 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, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,

(54) Title: ATTACHMENT DEVICE FOR A NON-STRUCTURAL COMPONENT OF A BUILDING

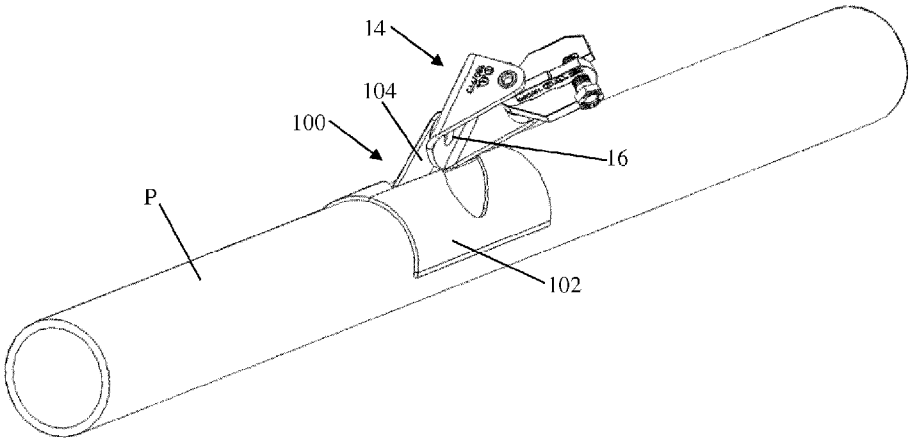



FIG. 2

(57) Abstract: An attachment device for securing a non-structural component of a building to a structural component of the building includes an attachment device member configured to be attached to the non-structural component and to partially surround the non-structural component. A fastening component forms a connection between the non-structural component and the attachment device member. The connection does not compress the non-structural component and inhibits movement of the non-structural component relative to the attachment device member. An attachment component is coupled to the attachment device member and attaches to the structural component for securing the non-structural component to the structural component via the attachment device member.

[Continued on next page]

WO 2019/233631 A3

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).

**Declarations under Rule 4.17:**

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

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

**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))*

**(88) Date of publication of the international search report:**
19 March 2020 (19.03.2020)

# INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2019/025172

A. CLASSIFICATION OF SUBJECT MATTER
INV. F16L3/02 F16L3/10 F16L3/12 F16L3/123 F16L3/11
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
F16L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>Y | US 2016/273679 A1 (REBHOLZ JEFFREY J [US] ET AL) 22 September 2016 (2016-09-22)<br>paragraphs [0023] - [0030]; figures 1-3<br>paragraphs [0085] - [0088]; figures 25-27<br>----- | 1-5,7<br>6 |
| Y | US 2008/265106 A1 (BOUDREAU MARTIN [CA] ET AL) 30 October 2008 (2008-10-30)<br>paragraphs [0026] - [0032]; figures 1-8<br>----- | 6 |
| X | EP 3 187 761 A1 (KEPCO ENG & CONSTR CO INC [KR]) 5 July 2017 (2017-07-05)<br>abstract; figures 8-9<br>paragraph [0045]<br>----- | 1,6 |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 19 September 2019 | 11/02/2020 |

| Name and mailing address of the ISA/ | Authorized officer |
|---|---|
| European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040,<br>Fax: (+31-70) 340-3016 | Gutiérrez Royo, M |

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2019/025172

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-7

**Remark on Protest**

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/** 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-7

   Attachment device with partially surrounding member

   ---

2. claims: 8-20

   Attachment device with two completely surrounding members

   ---

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2019/025172

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 2016273679 A1 | 22-09-2016 | CA 2924045 A1 | 19-09-2016 |
| | | US 2016273679 A1 | 22-09-2016 |
| US 2008265106 A1 | 30-10-2008 | NONE | |
| EP 3187761 A1 | 05-07-2017 | EP 3187761 A1 | 05-07-2017 |
| | | KR 20170079829 A | 10-07-2017 |
| | | US 2017191583 A1 | 06-07-2017 |