

Title (en)

SECURING DEVICE FOR SECURING A CIVIL ENGINEERING ELEMENT AND CIVIL ENGINEERING METHOD

Title (de)

SICHERUNGSVORRICHTUNG ZUM SICHERN EINES TIEFBAUELEMENTES UND TIEFBAUVERFAHREN

Title (fr)

DISPOSITIF DE FIXATION PERMETTANT DE FIXER UN ÉLÉMENT DE GÉNIE CIVIL ET PROCÉDÉ DE GÉNIE CIVIL

Publication

**EP 3708714 B1 20210113 (DE)**

Application

**EP 19162495 A 20190313**

Priority

EP 19162495 A 20190313

Abstract (en)

[origin: US2020291595A1] The invention relates to a securing means and a method for securing a civil engineering element to a construction machine by means of a flexible securing element, wherein a first end of the flexible securing element is attached to the construction machine and a second end is provided with a connecting link which can pass through a securing lug on the civil engineering element and can be releasably fastened to the construction machine by a connecting means. According to the invention, a detection unit is provided on the connecting means, which detection unit is designed for identifying fastening of the connecting link to the connecting means. The detection unit can generate and output a signal if fastening of the connecting link is identified.

IPC 8 full level

**E02D 7/00** (2006.01); **E02D 7/16** (2006.01); **E02D 13/02** (2006.01); **E02D 15/08** (2006.01)

CPC (source: CN EP US)

**E02D 7/00** (2013.01 - EP); **E02D 7/02** (2013.01 - US); **E02D 7/16** (2013.01 - EP); **E02D 7/18** (2013.01 - CN); **E02D 9/02** (2013.01 - US); **E02D 13/00** (2013.01 - CN US); **E02D 13/02** (2013.01 - EP); **E02D 13/10** (2013.01 - CN); **E02D 15/08** (2013.01 - EP); **E02D 2600/10** (2013.01 - US)

Citation (opposition)

Opponent : Liebherr-Werk Nenzing GmbH,

- DE 3602609 A1 19870730 - HOFMANN SEBASTIAN [DE], et al
- EP 3228392 A1 20171011 - BAUER MASCHINEN GMBH [DE]
- DE 10046271 B4 20101125 - TAKATA CORP [JP], et al
- EP 0870653 A1 19981014 - TAKATA EUROP GMBH [DE]
- DE 69812493 T2 20040219 - TRW INC [US]
- US 5353482 A 19941011 - ZIAYLEK JR THEODORE [US], et al
- CN 105271082 A 20160127 - XU XIUPING
- CN 201890755 U 20110706 - GUANGXI YUCHAI HEAVY INDUSTRY COMPANY LTD

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

**EP 3708714 A1 20200916**; **EP 3708714 B1 20210113**; AU 2020201592 A1 20201001; AU 2020201592 B2 20210415; CN 111691422 A 20200922; CN 111691422 B 20220408; US 11174613 B2 20211116; US 2020291595 A1 20200917

DOCDB simple family (application)

**EP 19162495 A 20190313**; AU 2020201592 A 20200304; CN 202010176770 A 20200313; US 202016815143 A 20200311