

Title (en)

Fastening element with a base body for use in mining and tunnel construction

Title (de)

Befestigungselement mit einem Grundkörper für den Einsatz im Berg- und Tunnelbau

Title (fr)

Élément de fixation doté d'un corps de base pour l'utilisation dans la construction en montagne et de tunnels

Publication

**EP 2256292 A3 20150520 (DE)**

Application

**EP 10162643 A 20100512**

Priority

DE 102009026478 A 20090526

Abstract (en)

[origin: EP2256292A2] The element (11) has a base body (12) provided with multiple weakenings (14, 15) of cross-sections as predetermined breaking points at external sides (13), where the element is rod-shaped. The weakenings are formed in spiral shape and extended along the longitudinal extension of the base body. The weakenings of the cross sections are formed by partial thermal processing of the base body. The base body is tubular in structure.

IPC 8 full level

**E21D 21/00** (2006.01)

CPC (source: EP US)

**E21D 21/0026** (2013.01 - EP US)

Citation (search report)

- [YD] WO 2008051728 A2 20080502 - JENNMAR CORP [US], et al
- [Y] US 4904122 A 19900227 - HERBST THOMAS [DE], et al
- [A] AU 2008221612 A1 20090409 - SANDVIK INTELLECTUAL PROPERTY
- [A] AU 568546 B2 19880107 - TITAN MINING & ENG
- [A] WO 0000718 A1 20000106 - SIKA AG [CH], et al
- [A] US 4181060 A 19800101 - PAYNE WILLIAM J [US]

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 SE SI SK SM TR

Designated extension state (EPC)

BA ME RS

DOCDB simple family (publication)

**EP 2256292 A2 20101201; EP 2256292 A3 20150520**; AU 2010201914 A1 20101216; AU 2010201914 B2 20120510; CA 2703427 A1 20101126; DE 102009026478 A1 20101202; RU 2010121718 A 20111210; US 2010303553 A1 20101202; ZA 201003722 B 20110428

DOCDB simple family (application)

**EP 10162643 A 20100512**; AU 2010201914 A 20100512; CA 2703427 A 20100507; DE 102009026478 A 20090526; RU 2010121718 A 20100528; US 80097510 A 20100525; ZA 201003722 A 20100525