

Title (en)
Protection module with bulk material

Title (de)
Schutzmodul mit schüttgutförmigem Material

Title (fr)
Module de protection avec matériau en vrac

Publication
EP 2330377 A3 20140827 (DE)

Application
EP 10193240 A 20101201

Priority
DE 102009057052 A 20091204

Abstract (en)
[origin: EP2330377A2] The material (2) has a set of shock absorbing individual elements, where each of the individual elements has two partial elements formed as thin plane plates that are connected with each other as a single piece. The plates lie in different planes that cut in an area of connecting points of the plates, and the individual elements are formed asymmetric to each other, where the individual elements are made of metallic material, ceramic material or plastic material. Each of the individual elements has a spring steel plate with a polyurethane layer. An independent claim is also included for a protective module comprising a housing for accommodating bulk goods shaped materials.

IPC 8 full level
F41H 7/04 (2006.01); **F41H 5/04** (2006.01); **F41H 5/013** (2006.01)

CPC (source: EP)
F41H 5/013 (2013.01); **F41H 5/04** (2013.01); **F41H 5/0492** (2013.01); **F41H 7/04** (2013.01)

Citation (search report)

- [X1] WO 2008061262 A1 20080529 - STELZL THOMAS KURT [AT]
- [XY1] DE 10324273 A1 20041216 - DAIMLER CHRYSLER AG [DE]
- [XY] DE 2817516 A1 19791025 - MESSERSCHMITT BOELKOW BLOHM
- [XY] US 2009031889 A1 20090205 - SAUL W VENNER [US], et al
- [YA] GB 2433192 A 20070620 - BIG OAK SPORTS & SURVIVAL LTD [GB]
- [YA] US 2007234458 A1 20071011 - LARSEN JAMES A II [US], et al
- [Y] FR 2122792 A5 19720901 - CME
- [Y] EP 1959223 A2 20080820 - KRAUSS MAFFEI WEGMANN GMBH & C [DE]

Cited by
WO2017218453A1; WO2014127768A1

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2330377 A2 20110608; EP 2330377 A3 20140827; EP 2330377 B1 20170125; DE 102009057052 A1 20110616;
DE 102009057052 B4 20120503; ES 2621895 T3 20170705; PL 2330377 T3 20170731

DOCDB simple family (application)
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