

Title (en)
METAL-TO-COMPOSITE HIGH-PRESSURE CYLINDER

Title (de)
METALL-ZU-VERBUNDWERKSTOFF-HOCHDRUCKZYLINDER

Title (fr)
BOUEILLE HAUTE PRESSION EN MÉTAL ET COMPOSITES

Publication
EP 2461081 A4 20160106 (EN)

Application
EP 09844705 A 20090514

Priority
RU 2009000232 W 20090514

Abstract (en)
[origin: EP2461081A1] This invention is intended for exclusion of loading of the ring-type welded joint of the cylinder-shaped part with the bottom. Metal-composite high-pressure cylinder contains thin-wall welded metal liner and external pressure-resistant shell made of composite material and formed by combination of groups of layers of high-modulus and low-modulus fibers of the reinforcing materials, which fibers are oriented in spiral and circular directions, while in the zone of ring-type welded seam in the liner's envelope there is a ring-type lens-shaped compensator, and while wall structure of the composite pressure-resistant shell of the cylinder includes at least one ring-type bracelet - limiter of axial deformations, which bracelet is installed above the lens-shaped compensator and over all its surface is rigidly connected with the independent groups of continuous reinforcing fibers, while width of this bracelet exceeds width of the compensator, and number of the bracelets - limiters is determined proceeding from the condition of limitation of axial deformation of the compensator, and from resilience of the used material.

IPC 8 full level
F17C 1/00 (2006.01); **F17C 1/06** (2006.01)

CPC (source: EP)
F17C 1/00 (2013.01); **F17C 2201/0109** (2013.01); **F17C 2203/0604** (2013.01); **F17C 2203/0619** (2013.01); **F17C 2203/0636** (2013.01); **F17C 2203/0665** (2013.01); **F17C 2203/067** (2013.01); **F17C 2205/0305** (2013.01); **F17C 2205/0397** (2013.01); **F17C 2209/221** (2013.01); **F17C 2209/234** (2013.01); **F17C 2223/035** (2013.01); **F17C 2260/01** (2013.01)

Citation (search report)

- [A] US 2007205201 A1 20070906 - CUNDIFF ROY S [US], et al
- [A] US 2006054628 A1 20060316 - MATSUOKA SEIICHI [JP], et al
- [A] US 2004026431 A1 20040212 - JONES BRIAN H [US]
- [A] US 4552281 A 19851112 - SCHNEIDER WILLIAM A [US]
- [A] US 3655468 A 19720411 - BASTONE ANDREW L, et al
- [A] US 2006144843 A1 20060706 - VANDAL PETER J [US], et al
- See references of WO 2010131990A1

Cited by
FR3030679A1; CN104948901A

Designated contracting state (EPC)
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 TR

DOCDB simple family (publication)
EP 2461081 A1 20120606; EP 2461081 A4 20160106; WO 2010131990 A1 20101118

DOCDB simple family (application)
EP 09844705 A 20090514; RU 2009000232 W 20090514