

Title (en)

METHOD AND APPARATUS OF FORMING INTEGRATED MULTILAYER FABRICS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR HERSTELLUNG INTEGRIERTER MEHRLAGIGER STOFFE

Title (fr)

PROCÉDÉ ET APPAREIL DE FABRICATION DE TISSUS INTÉGRÉS À COUCHES MULTIPLES

Publication

**EP 2454405 A1 20120523 (EN)**

Application

**EP 09847437 A 20090716**

Priority

US 2009050818 W 20090716

Abstract (en)

[origin: WO2011008210A1] A method for fabricating multilayer fabrics having a prescribed integration pattern and an apparatus of implementing same. In one embodiment, the method include the steps of providing a plurality of winding yarn carriers arranged in a multilayer structure along a first direction and configured such that each winding yarn carrier is operably movable with respect to one another along a second direction that is perpendicular to the first direction, forming a plurality of crossover points of the winding yarns by moving at least one winding yarn carrier along the second direction according to the integration pattern, transporting the binder yarns through the plurality of winding yarn layers at predetermined locations along the first direction, and locking the binder yarns in place, pushing the binder yarns toward the fell of the multilayer fabrics, and taking up the formed multilayer fabrics.

IPC 8 full level

**D04B 1/22** (2006.01); **D04B 9/42** (2006.01)

CPC (source: EP KR)

**D03D 37/00** (2013.01 - EP); **D03D 41/004** (2013.01 - EP); **D04B 21/14** (2013.01 - KR); **D04B 21/20** (2013.01 - KR); **D04B 39/06** (2013.01 - EP)

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 SM TR

DOCDB simple family (publication)

**WO 2011008210 A1 20110120**; AU 2009349683 A1 20120209; AU 2009349683 B2 20140320; BR 112012001679 A2 20160412; CA 2767622 A1 20110120; CA 2767622 C 20140218; EP 2454405 A1 20120523; EP 2454405 A4 20180228; EP 2454405 B1 20191127; JP 2012533692 A 20121227; JP 5394573 B2 20140122; KR 101319361 B1 20131016; KR 20120014592 A 20120217; RU 2012101213 A 20130827; RU 2499089 C2 20131120

DOCDB simple family (application)

**US 2009050818 W 20090716**; AU 2009349683 A 20090716; BR 112012001679 A 20090716; CA 2767622 A 20090716; EP 09847437 A 20090716; JP 2012520577 A 20090716; KR 20117030515 A 20090716; RU 2012101213 A 20090716