

Title (en)
CONTINUOUS AND RANDOM REINFORCEMENT IN A 3D PRINTED PART

Title (de)
KONTINUIERLICHE UND ZUFÄLLIGE VERSTÄRKUNG IN EINEM 3D-DRUCKTEIL

Title (fr)
REINFORCEMENT CONTINU ET ALÉATOIRE DANS UNE PIÈCE IMPRIMÉE EN 3D

Publication
EP 3402654 A4 20191009 (EN)

Application
EP 17739144 A 20170117

Priority
• US 201662279657 P 20160115
• US 201662429711 P 20161202
• US 2017013748 W 20170117

Abstract (en)
[origin: WO2017124085A1] Combined continuous/random fiber reinforced composite filament including a plurality of axial fiber strands extending substantially continuously within a matrix material of the fiber reinforced composite filament as well as a multiplicity of short chopped fiber rods extending at least in part randomly within the same matrix material is 3D printed via a deposition head including a conduit continuously transitioning to a substantially rounded outlet tipped with an ironing lip, which is driven to flatten the fiber reinforced composite filament against previously deposited portions of the part, as the matrix material and included therein a first proportion of the short chopped fiber rods are is flowed interstitially among the axial fiber strands spread by the ironing lip. A second proportion of the short chopped fiber rods is forced against previously deposited portions of the part.

IPC 8 full level
B29C 67/00 (2017.01); **B29B 11/16** (2006.01); **B29C 31/04** (2006.01); **B33Y 10/00** (2015.01); **B33Y 30/00** (2015.01); **B33Y 40/00** (2015.01)

CPC (source: EP US)
B29C 64/218 (2017.07 - EP US); **B29C 64/314** (2017.07 - EP); **B33Y 40/00** (2014.12 - EP US); **B29C 64/209** (2017.07 - EP); **B29C 70/38** (2013.01 - EP); **B33Y 10/00** (2014.12 - EP); **B33Y 30/00** (2014.12 - EP); **B33Y 40/10** (2020.01 - EP US)

Citation (search report)
• [Y] US 2015290875 A1 20151015 - MARK GREGORY THOMAS [US], et al
• [Y] WO 2015120429 A1 20150813 - HARVARD COLLEGE [US]
• [YA] WO 2004050323 A1 20040617 - OBJET GEOMETRIES LTD [IL], et al
• [YA] US 2015165691 A1 20150618 - MARK GREGORY THOMAS [US], et al
• [A] WO 2015077262 A1 20150528 - GUILL TOOL & ENGINEERING [US]
• See references of WO 2017124085A1

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)
WO 2017124085 A1 20170720; AU 2017208085 A1 20180802; AU 2017208085 B2 20190912; CA 3011260 A1 20170720; CN 108712960 A 20181026; EP 3402654 A1 20181121; EP 3402654 A4 20191009

DOCDB simple family (application)
US 2017013748 W 20170117; AU 2017208085 A 20170117; CA 3011260 A 20170117; CN 201780016197 A 20170117; EP 17739144 A 20170117