

Title (en)  
TRIAxIAL MULTILAYER ARMATURE AND ITS MANUFACTURING PROCESS

Title (de)  
DREIACHSIGE MEHRSCICHTIGE ARMATUR UND DEREN HERSTELLUNGSVERFAHREN

Title (fr)  
ARMATURE TRIAXIALE MULTICOUCHES ET SON PROCÉDÉ DE FABRICATION

Publication  
**EP 3771757 A1 20210203 (EN)**

Application  
**EP 19020449 A 20190729**

Priority  
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Abstract (en)  
These armatures used for making composite material parts have three yarn orientations, one main axial and the two other bias, by example at +60° and -60°. They are made by alternatively layers of axial straight yarns (1) and layers of bias yarns (2) and (3). All the layers of those armatures are linked together by little axial yarns (4) that link together two bias yarns layers tying between them each layer of straight axial yarn. They are made at high speed on specific machine named 3D Rotary Weaving Machines composed by discontinuous circumferential tracks on which shuttles moves at a constant speed but in alternate opposite sense to deliver the bias yarns. Fixed tubes (16) deliver the straight axial yarns (1) between those tracks, while other tubes (17) move quickly by crossing the shuttle tracks to deliver the linking yarns (4).. All the yarns go around a central mandrel on which the armature is created. These armatures have a majority of yarns in their length sense, very few internal voids and give parts with high mechanical values. They are made at a weaving speed not achievable by none other existing process.

IPC 8 full level  
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Citation (applicant)  
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