

Title (en)  
Apparatus for needling a nonwoven material

Title (de)  
Vorrichtung zum Nadeln eines Vlieses

Title (fr)  
Dispositif d'aiguilletage d'un non-tissé

Publication  
**EP 1780324 B1 20131016 (DE)**

Application  
**EP 06450146 A 20061017**

Priority  
AT 17502005 A 20051027

Abstract (en)  
[origin: EP1780324A1] Apparatus for needling nonwovens, comprising a needle board connected to push rods, comprises a push rod drive in the form of a hydrostatic resonance drive comprising pistons (2) acted upon on both sides by hydraulic springs (4, 5) and a device for applying pressure to the pistons at a frequency corresponding to the resonance frequency of the vibrational system comprising the moving masses and the hydraulic springs.

IPC 8 full level  
**D04H 18/00** (2012.01)

CPC (source: EP US)  
**D04H 18/02** (2013.01 - EP US)

Cited by  
CN104131417A; CN107881654A

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1780324 A1 20070502; EP 1780324 B1 20131016**; AT 502044 A4 20070115; AT 502044 B1 20070115; CN 1990932 A 20070704; JP 2007119998 A 20070517; TW 200730687 A 20070816; US 2007101562 A1 20070510; US 7308744 B2 20071218

DOCDB simple family (application)  
**EP 06450146 A 20061017**; AT 17502005 A 20051027; CN 200610172979 A 20061026; JP 2006316257 A 20061026; TW 95138688 A 20061020; US 58875806 A 20061027