

Title (en)  
Damped pneumatic cylinder for producing a constant, slow, linear output movement

Title (de)  
Gedämpfter Pneumatikzylinder zur Erzeugung einer konstanten, langsam, linearen Antriebsbewegung

Title (fr)  
Vérin pneumatique pour réaliser un mouvement de sortie constant, lent et linéaire

Publication  
**EP 1178220 A3 20040102 (DE)**

Application  
**EP 01117675 A 20010726**

Priority  
DE 10038734 A 20000802

Abstract (en)  
[origin: EP1178220A2] The piston rod (7) of the pneumatic cylinder is in functional communication with a hydraulic damper unit which is installed inside the cylinder casing (1). The damper unit comprises two bellows (8a,8b) filled with hydraulic fluid and fastened on both sides of a center partitioning wall (5) which is fixed in relation to the cylinder casing and which has a restrictor orifice (9) for overflow hydraulic fluid. The outer ends of the two bellows are closed respective compressed air loaded piston (6a,6b).

IPC 1-7  
**F15B 11/076**

IPC 8 full level  
**F15B 11/076** (2006.01)

CPC (source: EP)  
**F15B 11/076** (2013.01); **F15B 2211/40507** (2013.01); **F15B 2211/41536** (2013.01); **F15B 2211/455** (2013.01); **F15B 2211/46** (2013.01);  
**F15B 2211/75** (2013.01); **F15B 2211/8855** (2013.01)

Citation (search report)

- [A] US 3687013 A 19720829 - HALLER HANS R
- [A] US 3176801 A 19650406 - HUFF JOSEPH F
- [A] US 1437666 A 19221205 - LIVESAY ROBERT C
- [A] GB 2258498 A 19930210 - NAT OILWELL [GB]

Cited by  
CN103438050A; CN110000743A; US7565859B2

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)  
**EP 1178220 A2 20020206; EP 1178220 A3 20040102;** DE 10038734 A1 20020221; DE 10038734 C2 20021121

DOCDB simple family (application)  
**EP 01117675 A 20010726;** DE 10038734 A 20000802