

Title (en)  
COLD-WORKING STEEL

Title (de)  
KALT ZU BEARBEITENDER STAHL

Title (fr)  
ACIER POUR TRAVAIL À FROID

Publication  
**EP 2004870 B1 20140212 (EN)**

Application  
**EP 07748400 A 20070412**

Priority  
• SE 2007050239 W 20070412  
• SE 0600841 A 20060413

Abstract (en)  
[origin: WO2007120110A1] 11905 22 ABSTRACT The invention relates to a cold-working steel having the following chemical composition in % by weight: 1.3 - 2.4 (C+N), whereof at least 0.5 C, 0.1 - 1.5 Si, 5 0.1 - 1.5 Mn, 4.0 - 5.5 Cr, 1.5 - 3.6 (Mo+W/2), but max 0.5 W, 4.8 - 6.3 (V+Nb/2), but max 2 Nb, and max 0.3 S, 10 in which the content of (C+N) on the one hand and of (V+Nb/2) on the other hand, are balanced in relation to each other such that the contents of these elements are within an area that is defined by the coordinates A, B, C, D, A in the system of coordinates in Fig. 11, where the coordinates of [(C+N), (V+Nb/2)] for these points are: A: [1.38, 4.8] 15 B: [1.78, 4.8] C: [2.32, 6.3] D: [1.92, 6.3], balance essentially only iron and impurities at normal contents.

IPC 8 full level  
**B22F 3/24** (2006.01); **C22C 33/02** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01)

CPC (source: EP KR SE US)  
**C22C 33/02** (2013.01 - KR); **C22C 33/0285** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US);  
**C22C 38/22** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP KR SE US); **C22C 38/36** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US);  
**B22F 2003/248** (2013.01 - EP US); **B22F 2998/10** (2013.01 - EP US)

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 MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**WO 2007120110 A1 20071025**; AU 2007239111 A1 20071025; AU 2007239111 B2 20110804; BR PI0709944 A2 20110802;  
CA 2644363 A1 20071025; CN 101421430 A 20090429; CN 101421430 B 20120314; EP 2004870 A1 20081224; EP 2004870 A4 20120328;  
EP 2004870 B1 20140212; JP 2009533554 A 20090917; JP 5323679 B2 20131023; KR 20080110674 A 20081218; MX 2008012947 A 20081015;  
RU 2008136562 A 20100520; RU 2437951 C2 20111227; SE 0600841 L 20071014; TW 200745352 A 20071216; TW I365916 B 20120611;  
US 2009010795 A1 20090108

DOCDB simple family (application)  
**SE 2007050239 W 20070412**; AU 2007239111 A 20070412; BR PI0709944 A 20070412; CA 2644363 A 20070412;  
CN 200780013200 A 20070412; EP 07748400 A 20070412; JP 2009505332 A 20070412; KR 20087027788 A 20081113;  
MX 2008012947 A 20070412; RU 2008136562 A 20070412; SE 0600841 A 20060413; TW 96112984 A 20070413; US 28160907 A 20070412