

Title (en)  
POWDER METALLURGY ARTICLES

Publication  
**EP 0076027 A3 19840222 (EN)**

Application  
**EP 82304064 A 19820802**

Priority  
US 30604081 A 19810928

Abstract (en)  
[origin: EP0076027A2] A powder metallurgy article, e.g., a hot working roll or tool or a high toughness cold work tool such as a shear blade or slitter knife, formed from compacted prealloyed powder of an alloy consisting of, in weight percent, manganese 0.2 to 1.5, silicon 2 max., chromium 1.5 to 6, molybdenum 0.50 to 6, sulfur 0.30 max., vanadium 7 to 10, carbon expressed by the formula (.25 minimum, .40 maximum + .16 x percent vanadium), optical carbide forming elements such as tungsten and niobium in amounts up to 5 percent (with the corresponding stoichiometric carbon required for balance) may partially replace vanadium, optional cobalt additions may be included for heat resistance and balance iron and incidental impurities; the article is characterised by a fully martensitic structure with essentially no carbon in the steel matrix in excess of the carbon necessary to combine with the vanadium present to form vanadium carbides and to ensure said fully martensitic structure.

IPC 1-7  
**C22C 38/24**; **C22C 33/02**; **B21B 1/00**

IPC 8 full level  
**B21B 1/00** (2006.01); **B21B 27/00** (2006.01); **C22C 33/02** (2006.01); **C22C 38/00** (2006.01); **C22C 38/24** (2006.01)

CPC (source: EP KR)  
**B21B 27/00** (2013.01 - EP); **B22F 7/00** (2013.01 - KR); **C22C 33/0278** (2013.01 - EP)

Citation (search report)  
• [X] FR 2436824 A1 19800418 - CRUCIBLE INC [US]  
• [A] DE 2722972 A1 19771124 - KOBE STEEL LTD  
• [A] US 3150444 A 19640929 - REEN ORVILLE W

Cited by  
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**EP 82304064 A 19820802**; AT 82304064 T 19820802; CA 400811 A 19820408; DE 3274261 T 19820802; DK 231882 A 19820524; ES 513486 A 19820625; IN 567DE1982 A 19820726; JP 12523582 A 19820720; KR 820004373 A 19820928; MX 19402582 A 19820816