

Title (en)  
HOT-FORMED STEEL PART AND MANUFACTURING METHOD

Title (de)  
WARMGEFORMTES STAHLTEIL UND HERSTELLUNGSVERFAHREN

Title (fr)  
PIÈCE EN ACIER MISE EN FORME À CHAUD ET PROCÉDÉ DE FABRICATION

Publication  
**EP 4347903 A1 20240410 (FR)**

Application  
**EP 22731603 A 20220601**

Priority

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- EP 2022064945 W 20220601

Abstract (en)  
[origin: WO2022253912A1] The invention relates to a hot-formed steel part having a composition consisting of  $0.22\% \leq C \leq 0.35\%$ ,  $0.50\% \leq Mn \leq 1.70\%$ ;  $0.50\% \leq Cr \leq 1.70\%$ ;  $traces \leq Mo \leq 0.15\%$ ;  $traces \leq Si \leq 0.40\%$ ;  $traces \leq Ni \leq 0.50\%$ ;  $traces \leq Cu \leq 0.50\%$ ;  $traces \leq V \leq 0.08\%$ ;  $traces \leq Al \leq 0.10\%$ ;  $0.001\% \leq B \leq 0.010\%$ ;  $0.01\% \leq Ti \leq 0.06\%$ ;  $traces \leq Nb \leq 0.05\%$ ;  $traces \leq S \leq 0.15\%$ ;  $traces \leq Ca \leq 0.010\%$ ;  $traces \leq Te \leq 0.030\%$ ;  $traces \leq Se \leq 0.050\%$ ;  $traces \leq Bi \leq 0.050\%$ ;  $traces \leq Pb \leq 0.100\%$ ;  $traces \leq P \leq 0.100\%$ ;  $traces \leq N \leq 0.013\%$ ; with  $540 \leq (830 - 270 \cdot C\% - 90 \cdot Mn\% - 70 \cdot Cr\% - 83 \cdot Mo\% - 37 \cdot Ni\%) \leq 600$  and  $Ti\% \geq 2.5N\%$ . The microstructure consists of at least 70% bainitic ferrite and carbides or residual austenite, the residual austenite fraction being at most 10%, at most 30% martensite and/or proeutectoid ferrite and/or pearlite, the proeutectoid ferrite and/or pearlite fraction being at most 10%.

IPC 8 full level  
**C21D 1/10** (2006.01); **C21D 1/20** (2006.01); **C21D 1/30** (2006.01); **C21D 7/08** (2006.01); **C22C 38/02** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/38** (2006.01); **C22C 38/50** (2006.01); **C22C 38/54** (2006.01)

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**C21D 1/10** (2013.01 - EP KR US); **C21D 1/20** (2013.01 - EP KR US); **C21D 1/30** (2013.01 - EP KR US); **C21D 7/08** (2013.01 - EP KR); **C21D 8/0226** (2013.01 - KR); **C21D 8/0236** (2013.01 - KR); **C22C 38/001** (2013.01 - KR US); **C22C 38/002** (2013.01 - US); **C22C 38/02** (2013.01 - EP US); **C22C 38/06** (2013.01 - KR US); **C22C 38/28** (2013.01 - EP); **C22C 38/32** (2013.01 - EP); **C22C 38/38** (2013.01 - EP); **C22C 38/42** (2013.01 - KR US); **C22C 38/44** (2013.01 - KR US); **C22C 38/46** (2013.01 - KR US); **C22C 38/48** (2013.01 - KR US); **C22C 38/50** (2013.01 - EP KR US); **C22C 38/54** (2013.01 - EP KR US); **C22C 38/58** (2013.01 - KR US); **C22C 38/60** (2013.01 - US); **C21D 2211/001** (2013.01 - KR US); **C21D 2211/002** (2013.01 - EP KR US); **C21D 2211/005** (2013.01 - KR US); **C21D 2211/008** (2013.01 - EP KR US); **C21D 2211/009** (2013.01 - US)

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