Title (en)

CHAIN STEEL FOR USE IN MINE AND MANUFACTURING METHOD THEREFOR

Title (de)

KETTENSTAHL ZUR VERWENDUNG IM BERGBAU UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

ACIER POUR CHAÎNES DESTINÉ À ÊTRE UTILISÉ DANS LE SECTEUR MINIER ET SON PROCÉDÉ DE FABRICATION

Publication

EP 4089197 A4 20230726 (EN)

Application

EP 21760437 A 20210223

Priority

- CN 202010129796 A 20200228
- CN 2021077430 W 20210223

Abstract (en)

[origin: EP4089197A1] A steel for mining chain and a manufacturing method thereof, wherein the steel has compositions by weight percentage: C: 0.20~0.28%, Si: 0.01~0.40%, Mn: 0.50~1.50%, P≤0.015%, S≤0.005%, Cr : 0.30~2.00%, Ni: 0.50~2.00%, Mo: 0.10~0.80%, Cu: 0.01~0.30%, Al: 0.01~0.05%, Nb : 0.001~0.10%, V: 0.001~0.10%, H≤0.00018%, N≤0.0150%, O≤0.0020%, and the balance is Fe and inevitable impurities. The manufacturing method comprises steps of smelting, refining and vacuum treatment, casting, heating, forging or rolling, and quenching and tempering heat treatment processes. The steel in the present invention has high strength and good impact toughness, good elongation and reduction of area. The steel can also resist stress corrosion cracking and have good weather resistance, wear resistance and fatigue resistance, which can be used in scenarios where the steel having high strength and toughness is required, such as construction machinery and marine engineering.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 1/25** (2006.01); **C21D 1/60** (2006.01); **C21D 7/13** (2006.01); **C21D 8/06** (2006.01); **C21D 9/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/54** (2006.01); **C22C 38/60** (2006.01)

CPC (source: CN EP KR US)

B21C 37/00 (2013.01 - CN KR); **B21J 9/02** (2013.01 - KR); **B21L 11/00** (2013.01 - KR); **B22D 11/113** (2013.01 - KR); **C21D 1/18** (2013.01 - US); **C21D 1/25** (2013.01 - EP); **C21D 1/60** (2013.01 - EP); **C21D 6/004** (2013.01 - US); **C21D 6/005** (2013.01 - US); **C21D 6/008** (2013.01 - US); **C21D 7/13** (2013.01 - EP); **C21D 8/0226** (2013.01 - KR US); **C21D 8/0263** (2013.01 - US); **C21D 8/065** (2013.01 - EP); **C21D 9/0081** (2013.01 - EP US); **C21D 9/0087** (2013.01 - CN EP KR US); **C22C 33/04** (2013.01 - CN KR); **C22C 38/001** (2013.01 - KR US); **C22C 38/002** (2013.01 - EP US); **C22C 38/008** (2013.01 - EP US); **C22C 38/02** (2013.01 - CN EP US); **C22C 38/04** (2013.01 - CN EP); **C22C 38/06** (2013.01 - CN KR US); **C22C 38/42** (2013.01 - CN EP KR US); **C22C 38/44** (2013.01 - CN EP KR US); **C22C 38/46** (2013.01 - CN EP KR US); **C22C 38/48** (2013.01 - CN EP KR US); **C22C 38/54** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US); C21D 2211/001 (2013.01 - CN EP KR US); C21D 2211/002 (2013.01 - CN EP KR US); C21D 2211/008 (2013.01 - CN EP KR US)

Citation (search report)

- [XA] CN 102747303 A 20121024 - BAOSHAN IRON & STEEL
- [A] CN 109136737 A 20190104 - BAOSHAN IRON & STEEL
- [A] AUTORENKOLLEKTIV: "Spurenelemente im Stahl - Moeglichkeiten zur Beeinflussung im Smelzbetrieb", SPURENELEMENTE IN STAEHLEN, VERLAG STAHLEISEN, DUESSELDORF, DE, 1 January 1985 (1985-01-01), pages 19 - 22, XP002433212
- See also references of WO 2021169941A1

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