



(12) **CORRECTED EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(15) Correction information:
Corrected version no 1 (W1 A1)
Corrections, see
Bibliography INID code(s) 72

(51) International Patent Classification (IPC):
C22C 38/02 ^(2006.01) **C22C 38/04** ^(2006.01)
C22C 38/44 ^(2006.01) **C22C 38/34** ^(2006.01)
C22C 33/04 ^(2006.01) **F01N 13/16** ^(2010.01)
F04D 29/02 ^(2006.01)

(48) Corrigendum issued on:
18.10.2023 Bulletin 2023/42

(52) Cooperative Patent Classification (CPC):
F01D 25/005; C22C 38/001; C22C 38/02;
C22C 38/04; C22C 38/44; F05D 2220/40;
F05D 2240/14; F05D 2300/171

(43) Date of publication:
30.08.2023 Bulletin 2023/35

(21) Application number: **22871096.8**

(86) International application number:
PCT/CN2022/131885

(22) Date of filing: **15.11.2022**

(87) International publication number:
WO 2023/134292 (20.07.2023 Gazette 2023/29)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL
NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

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(30) Priority: **11.01.2022 CN 202210024961**

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(54) **CAST IRON-BASED AUSTENITE CREEP-RESISTANT STEEL, AND PREPARATION METHOD AND USE THEREFOR**

(57) The present invention belongs to the technical field of austenitic creep-resistant steel, in particular to a cast iron-based austenitic creep-resistant steel and preparation method and application thereof. The austenitic creep-resistant steel according to the present invention comprises, by mass percentage, the following components: C: 0.2 to 0.5; Si: 0.5 to 2.0; Mn<0.5; Cr: 20 to 28; Ni: 8 to 13; P≤0.04; S≤3; W: 0.5 to 2; N: 0.2 to 0.4; with the balance being iron and other unavoidable impurities. The austenitic creep-resistant steel prepared according to the present invention suppresses the high-temperature ferrite phase and thus eliminating the defects of precipitated nitrogen porosity, reduces the processing cost of castings as compared with the ordinary Cr-Ni-based austenitic heat-resistant steel by optimizing the range of addition of nitrogen and carbon elements, and offers excellent mechanical properties at high temperature and long creep fracture time.

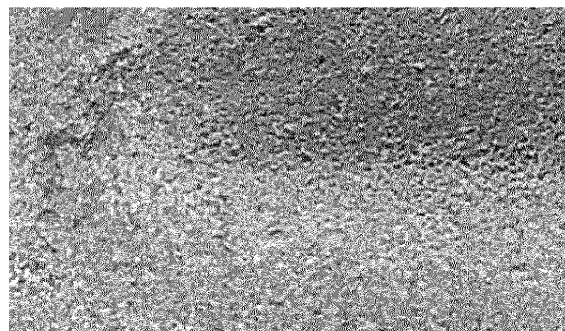


FIG. 1