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(72) Inventors:  
• **ISHIKAWA, Koichi**  
**457-8545, Aichi (JP)**  
• **SHIMIZU, Tetsuya**  
**457-8545, Aichi (JP)**

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(74) Representative: **Laako, Tero Jussi**  
**Berggren Oy Ab**  
**Patent Dept**  
**P.O. Box 16**  
**00100 Helsinki (FI)**

(71) Applicant: **Daido Tokushuko Kabushiki Kaisha**  
**Nagoya-shi,**  
**Aichi 460-8581 (JP)**

(54) **Ferritic free-cutting stainless steel excellent in surface roughness and outgass resistance**

(57) A ferritic free-cutting stainless steel excellent in surface roughness and outgass resistance is disclosed which comprises in weight percentage, 0.06% or less of C, 0.05 to 1.0% of Si, 2.0% or less of Mn, 0.050% or less of P, 0.05 to 0.50% of S, 2.0% or less of Cu, 2.0% or less of Ni, 9.0 to 25.0% of Cr, 4.0% or less of Mo, 0.065 to 2.0% of Ti, 0.0150% or less of O, 0.020% or less of N, 0.001 to 0.100% of Al, and Fe and inevitable impurity in the rest portion, wherein the steel satisfies Equations (1) and (2) of the equations,

$$[\text{Ti}] \geq 1.3 \times [\text{S}] \quad \dots \text{Equation (1)}$$

$$[\text{Mn}]/[\text{Ti}] \leq 3 \quad \dots \text{Equation (2)}$$

$$(\text{WTi} + \text{WCr}) > 2 \times \text{WMn} \quad \dots \text{Equation (3)}$$

where the amount of Ti contained in the steel is represented by [Ti], that of S is represented by [S] and that of Mn is represented by [Mn], and wherein the steel satisfies Equation (3) where the amount of Ti contained in sulfide produced in the texture of the steel is represented by WTi, that of Cr is represented by WCr and that of Mn is represented by WMn.

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# EUROPEAN SEARCH REPORT

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                    |                                                        |                                                                       |
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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