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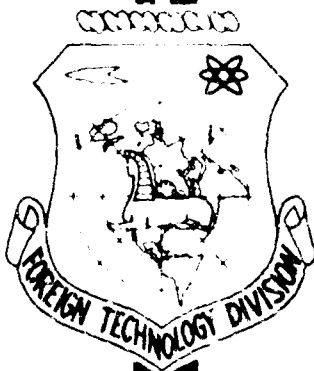
TRANSLATION

FREE-CUTTING STAINLESS STEEL

By

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FOREIGN TECHNOLOGY DIVISION



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UNEDITED ROUGH DRAFT TRANSLATION

FREE-CUTTING STAINLESS STEEL

BY: N. M. Pisarev and V. M. Kozhin

English pages: 2

**SOURCE: Patent No. 155813 (Appl. No. 779510/22-2,
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FREE-CUTTING STAINLESS STEEL

N. M. Pisarev
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Free-cutting stainless steels intended for use in climatic conditions of middle latitudes (e.g., E1474 chrome steel used for making parts in transmitting mechanisms) are known.

4Kh18N2M (EI 378) steel with enhanced anticorrosion and mechanical properties suitable for operation under tropical climatic conditions is proposed. This steel is distinguished by the fact that together with an increased amount of sulfur and phosphorous, it contains molybdenum.

Composition for 4Kh18N2M Steel (in %):

Carbon	0.35 - 0.45
Chromium	16 - 18
Nickel	1.5 - 2.5
Manganese	0.7 - 1.2
Silicon	to 0.5
Molybdenum	0.7 - 0.9
Sulfur	0.15 - 0.25
Phosphorous	0.08 - 0.15

After hardening from a temperature of 1030 - 1050°C and tempering at a temperature of 150 - 200°C, 4Kh18N2M free-cutting steel takes on the following mechanical properties: hardness H_{RC} 48 - 52; strength 168 kg/mm²; specific elongation $\delta = 7\%$; impact strength $a_K = 0.8$ kg/cm².

The technique of preparing 4Kh18N2M steel presents no difficulties; the steel deforms well in the hot state in the temperature range of 1150 - 850°C.

Object of Invention

Free-cutting stainless steel containing 0.35 - 0.45% carbon, 16 - 18% chromium, 1.5 - 2.5% nickel, 0.7 - 1.2% manganese and up to 0.5% silicon is distinguished by the fact that, in order to enhance the mechanical and anticorrison properties, 0.7 - 0.9% molybdenum, 0.15 - 0.25% sulfur and 0.08 - 0.15% phosphorous are introduced.