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sov/126-8-3-18/33

Internal Friction of Metastable Solid Solutions

dependence of internal friction of a deformed Ni3Mn alloy (75% deformation), the peaks A and B remain and an additional peak, D, having a maximum at 226°C, appears; the general level of internal friction rises sharply (Fig 2). An additional peak, C, having a maximum at 316°C, is evident in a carburized Ni<sub>3</sub>Mn alloy containing 0.35% C (Fig 3). The appearance of this peak is due to the diffusion of carbon atoms in the elastic stress range. During the investigation of the influence of alloying the Ni3Mn solid solution with molybdenum, it was found that supplementary maxima - peaks M and C at 52 and 316°C - appeared in temperature dependence of internal friction curves (Fig  $\frac{1}{4}$ ). In Fig 5, the influence of heat treatment on the temperature dependence of a Ni3Mn alloy containing 1.34% Mo is shown. A similar result is obtained with an alloy containing 2.77% Mo. On measuring the internal friction of NigFe alloys alloyed with Mo (Fig 6) two peaks were obtained in the low temperature range, one in the region of 85°C (peak A) and the other at 170°C (peak B). Fig 7 shows the influence of heat treatment on the temperature dependence of internal

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AUTHORS:

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Mezhennaya, S.O. and Belyakov, L.N.

TITLE:

Internal Friction of Metastable Solid Solutions

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 3,

pp 440-448 (USSR)

ABSTRACT:

The alloy of stoichiometric composition NizMn and alloys of the same composition alloyed with 1.34 and 2.77% Mo, respectively, were studied by measuring the temperature dependence of internal friction. Using this method, NizFe type alloys without molybdenum and those alloyed with molybdenum, and also EI437A type alloys (nimonic) were studied. The chemical composition of the investigated alloys is shown in the table on p 441. The internal friction was measured in wire specimens, 300 mm long and 0.7 mm diameter, in vacuum. The alloy Ni3Mn is an ordered alloy with a Curie point of approximately 350°C (Ref 10 and 11). In the curve showing the temperature dependence of internal friction of a quenched NiaMn alloy (quenched from a temperature above that at which ordering occurs) two peaks, A and B, with maxima at 120 and 290°C are observed (Fig 1). In the curve of the temperature

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Investigation of the Alloy Ni Mn by the Method of Internal Friction

307/163-59-2-34/48

likewise as meta-stability of the solid solution. A further maximum (C) occurs on the temperature curve of the internal friction of carbonaceous alloys at 360° (Fig 3). The occurrence of the maximum C is explained by the diffusion of the carbon atoms in the stress field. The amount of the maximum C in carbonaceous samples is reduced after six hours of melting at 360° and subsequent hardening in water, in consequence of the carbide formation in the solid solution. Only one maximum occurs at 360° on the temperature curve of the internal friction after the separation of the carbide phase. The method of internal friction makes the investigation of the orientation state in the alloy possible. There are 3 figures and 5 references, 3 of which are Soviet.

ASSOCIATION:

Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED:

July 10, 1958

Card 2/2

18 (1) AUTHORS: Avraamov, Yu. S., Mezhennaya, S. Q.

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TITLE:

Investigation of the Alloy Ni3Mn by the Method of Internal

Friction (Issledovaniye splava Ni3Mn metodom vnutrennego treniya)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959,

Nr 2, pp 189-193 (USSR)

ABSTRACT:

The phase composition of the alloy Ni Mn was investigated by the method of internal friction after various thermal treatment. The influence of the thermal treatment on the Ni<sub>3</sub>Mn alloy in

dependence of the temperature on the internal friction was investigated and the results are given in figure 1. Two maxima, A and B, occur at 120 and 2900 on the temperature curve of the hardened alloy. The maxima can be interpreted as meta-stability in the orientation of the solid solutions. The lependence of the internal friction of the deformed steel on temperature was investigated and is given in figure 2. Beside the maxima A and B also the maximum D occurs at 226° on the temperature curve of the internal friction of the deformed Nizim alloy

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(deformation degree 75 %). The maximum D is interpreted

MEZHENNAYA, S. O., OSVENSKIY, V. B., and RELYAKOV, L. N., AVRAAMOV, Yu. S., (Moscow Inst. of Stoel.)

"The Internal Friction of 'Metastable'Solid Solutions."

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Vest. Vys. Shkoly, 9, 72-3, 1958.

Mezhenko, Yu. A Russkaya tekhnicheskaya periodika, 1800-1916 gg; bibliograficheskiy ukaztel'. Moskva, Akademkniga, 298 p. facsims, 27 cm. At head of title: Akademiya Nauk SSSr. Institut 1955. Istorii Yestestvoznaniya I Tekhniki.

USSR / Farm Animals. General Problems.

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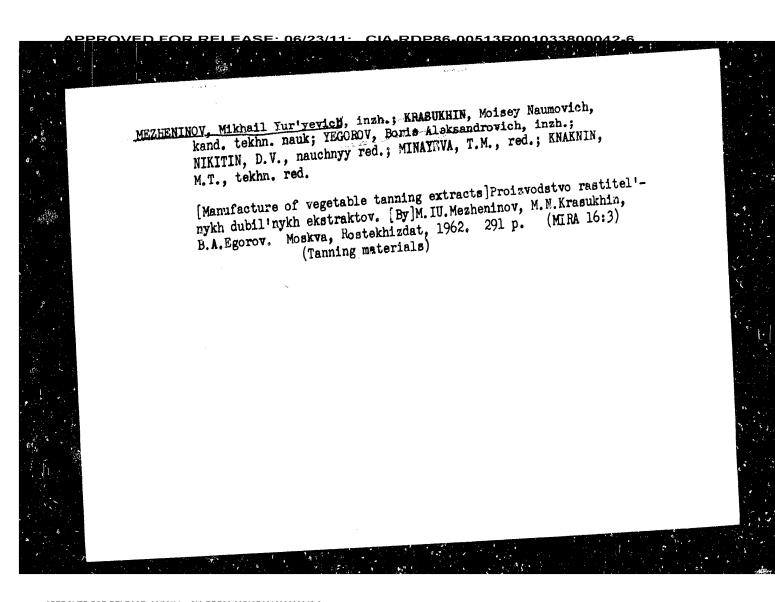
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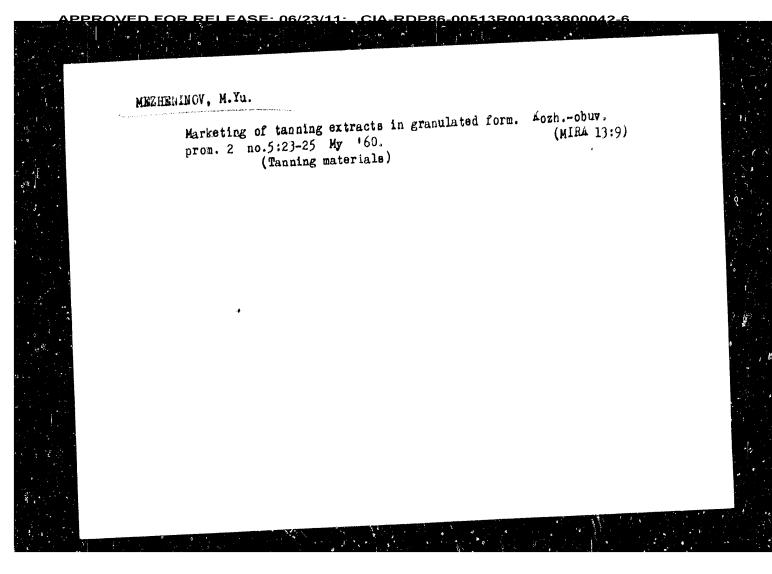
become dehydrated, osmic pressure of cellular juice increases, as well as transparency of protoplasma, the original structure of the protein complex becomes disrupted, proteins are subjected to denaturization, the stability of the pigment-protein-lipoid complex of plastids becomes impaired, and as a result losses of nutritious substances increase. -- F. M. Kazantsev

Card 2/2

Q USSR / Farm Animals. General Problems. : Ref Zhur - Biologiya, No 5, 1959, No. 21199 : Zhuravlev, Ye. M.; Zeyliger, D. O.; Mezhenko, I. V.; Abs Jour Ivanovskiy, V. M. Author : Penza Institute of Agriculture : Changes of the Chemical Composition of Red Clover Inst Leaves When Dried Title : Sb. Tr. Penzenskogo s.-x. in-ta, 1958, Vyp. 2, Orig Pub 425-437 : The entire clover plant of the Prezenskiy 1 variety and lucerne plant of the improved Bol'shev'yasskaya variety were dried in a laboratory with dissipated Abstract light. The leaves of the 4th and 5th layers were analyzed. The leaves were analyzed 24, 48 and 96 hours after drying. To the extent to which the plants Card 1/2

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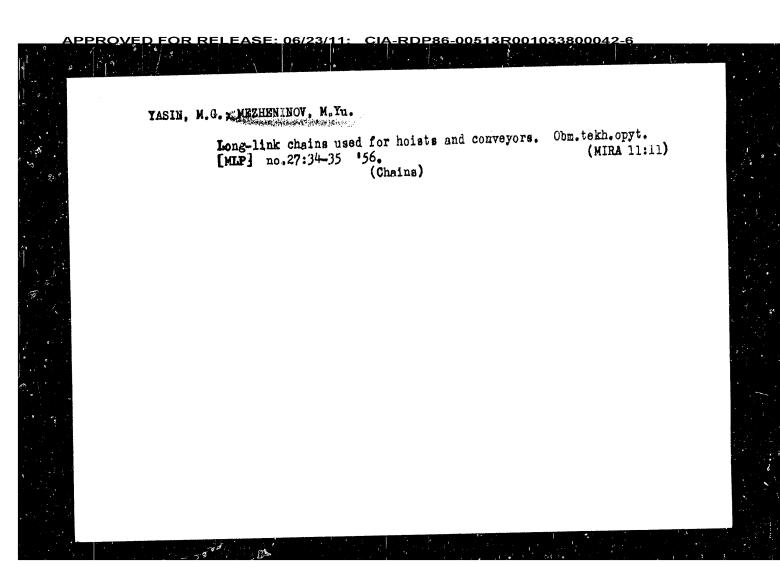


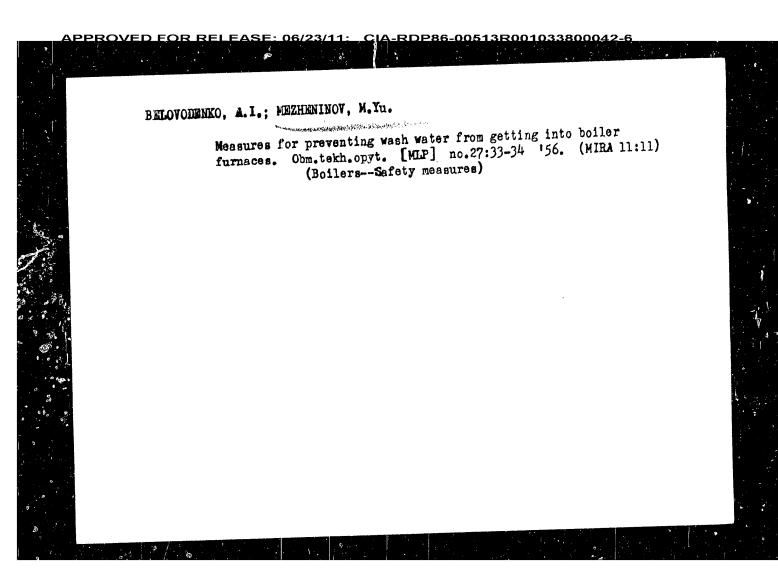
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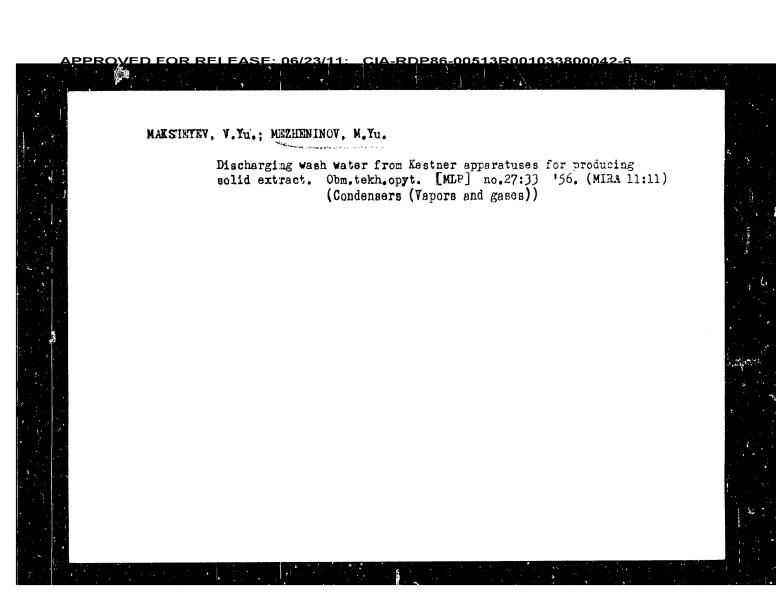
IVANOV, A.I.; MEZHENINOV, K.Tu. Devices used for bending steel sheets in making hoist buckets.

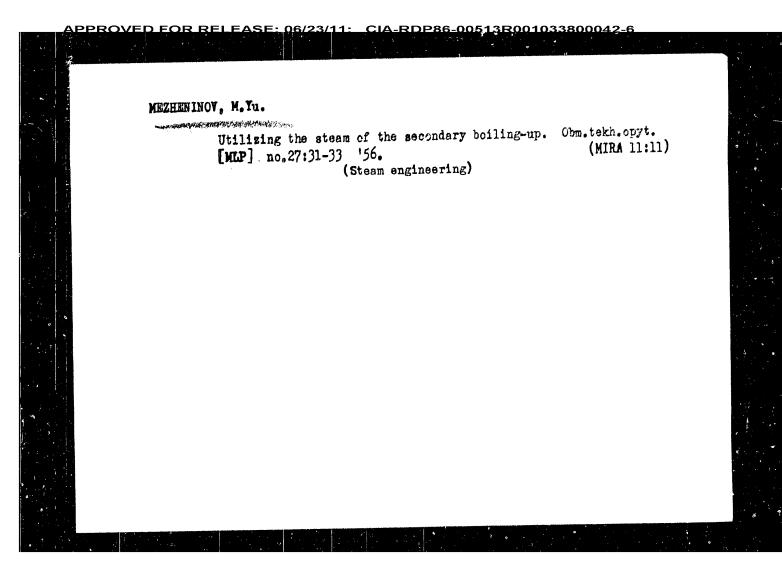
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<u> APPROVED FOR RELEASE: 06/23/11: \_ CIA-RDP86-00513R001033800042-6</u> YASIN, M.O.; MERHENINOV. N. Tu. Barometric condensers made of stainless steel. Obm.tekh.opyt.

[MLP] no.27:24-26 \*56. (MIRA 11:11)

(Condensers (Vapors and gases)) YASIN, M.G.; MEZHENINOV, M.Yu. Improved fitting of bottom filters in diffusers. Obm.tekh.opyt.
[MLP] no.27:21-23 156. (MIRA 11:11) (Diffusers)

YASIN, M.G.; MEZHENINOV, M.Yu. Devices for preventing casual openings of bottom lids of diffusers.

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(Crushing machinery)

