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## THE STUDY OF STRUCTURE AND HARDNESS OF STEEL-MOLIBDENUMAL COVERING

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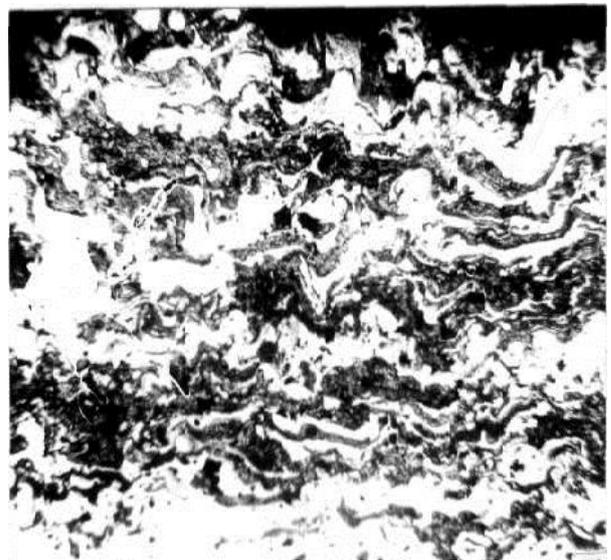
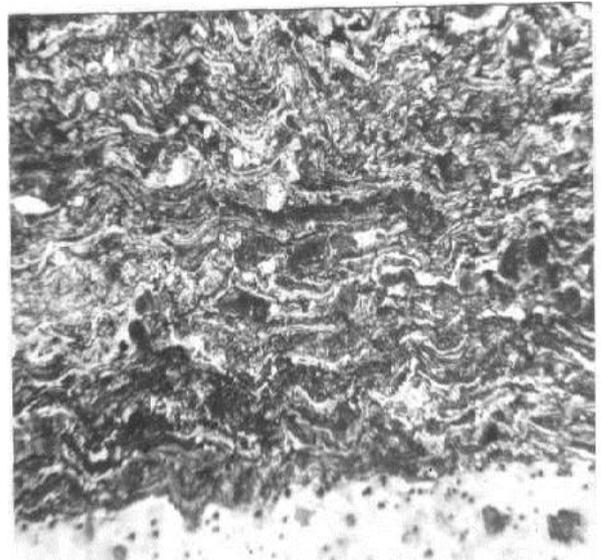
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**Summary. Purpose.** The new methods of surface hardening and creation of special materials are appealed for problem solving of the increasing of exploitation characteristic of materials. Among them a special place is gas-thermal coating. They are used in the different branches of machine-building for protection of the surface of details and machine assemblies from abrasion wearout. In addition, these parts and components during operation can be restored by repeatedly re-coating, that significantly reduces the cost of repair of equipment, reduces the consumption of materials to manufacture new details. Purpose of the work is to establish the influence of the gas-thermal spraying on the hardness of surface coating and to determine the connection between microhardness and structural state. **The results.** The value of measurements of the microhardness of molybdenum and steel in the surface layer are consistent with character of structural components. The major characteristic of the deposited layer, determining the success work of the coating is its relationship with the substrate surface. Rapid crystallization under the pressure help to create of fine-grained structure. **Scientific novelty.** The mechanism of formation of the coating by sequentially packaging of greatly deformed particles and the formation of the layered structure are shown. High hardness of the particles of molybdenum of sprayed layer is stipulated by several factors: the ultrafine grain, hardening particles and change of their chemical composition, being created the conditions for senescence hardening. The hardness of steel parts is determined by micro dispersive carbides and hardening of austenite.

**Key words:** *steel-molibdenumat coating, gas-thermal spraying, structural state, strengthening*

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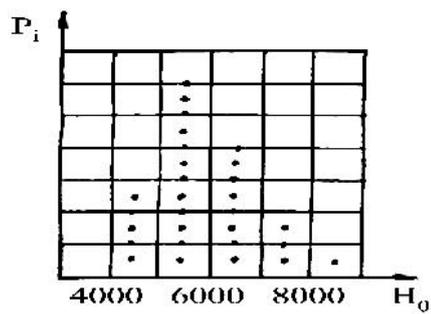
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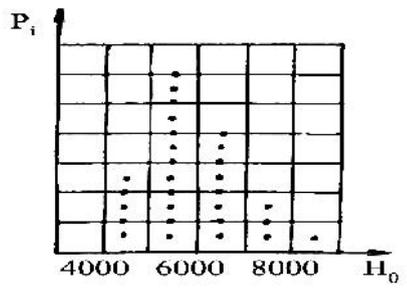
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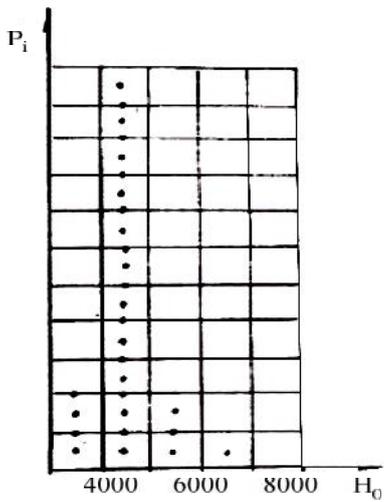
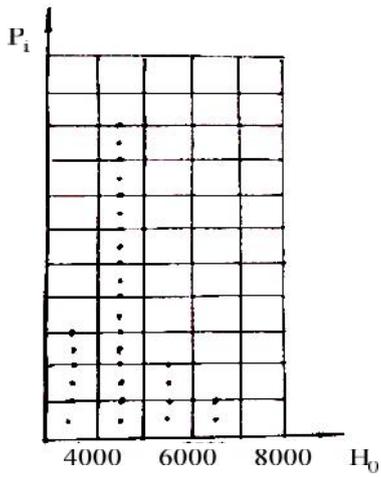
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