a 2020 0015

The invention relates to metallurgy and can be used to processes for hardening steel parts, obtained by plastic deformation, working in frictional and cyclic conditions.
The process, according to the invention, comprises heat treatment, plastic deformation and nitriding. Before nitriding, the parts are heated to a temperature of 490-540°C, keeping them in an inert atmosphere for 20-30 min. The nitriding process is carried out cyclically, at the same time each cycle is carried out by two equal in duration half-cycles, and the duration of each half-cycle is 0.5; 1; 1.5 hours. The first half-cycle comprises the saturation with nitrogen, and the second half-cycle comprises the dissociation of the nitrided layer – interruption of ammonia supply. The half-cycles are performed at different temperatures. Before nitriding, the nitrided surface is cleaned by electrolysis, mechanically, etc. The nitriding process is carried out at a temperature below the temperature of eutectoid transformations.

Claims: 4
Fig.: 5