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Johansson et al.

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[54] **METHOD OF PRODUCING INTEGRAL, HARD NITRIDE LAYER ON TITANIUM/TITANIUM ALLOY**

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[30] **Foreign Application Priority Data**

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[51] Int. Cl.⁵ **C21D 9/00; C22C 14/00**

[52] U.S. Cl. **148/238; 148/206; 148/212; 148/237; 428/660**

[58] Field of Search **148/206, 212, 237, 238; 428/660**

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[57] **ABSTRACT**

Objects of titanium or titanium alloys having the surface converted to a hard and wear-resistant nitride layer with good adhesion, which is distributed uniformly and also provides internal capillaries. The objects are produced by being treated in a vacuum furnace with an atmosphere of pure nitrogen gas at a temperature of 650°-1000° C. and at a pressure below atmospheric pressure. The thickness of the nitride layer can be controlled by controlling the treatment time and temperature.

9 Claims, 4 Drawing Sheets

