

Title (en)

PROCESS FOR APPLYING HARD COATINGS AND THE LIKE TO METALS AND RESULTING PRODUCT.

Title (de)

VERFAHREN ZUM AUFBRINGEN VON HARTEN ODER ÄHNLICHEN BESCHICHTUNGEN AUF METALLE UND SO HERGESTELLTE ERZEUGNISSE.

Title (fr)

PROCEDE D'APPLICATION DE REVETEMENTS DURS ET ANALOGUES SUR DES METAUX ET PRODUIT RESULTANT.

Publication

**EP 0201531 A4 19881122 (EN)**

Application

**EP 85905364 A 19851016**

Priority

US 66225284 A 19841017

Abstract (en)

[origin: WO8602385A1] Hard coatings are applied to substrate metals by coating the metal surface, e.g. by dipping the substrate metal in a molten alloy of the coating metals, and then exposing the coating at an elevated temperature to an atmosphere containing a reactive gaseous species which forms a nitride, a carbide, a boride or a silicide. The coating material is a mixture of the metals M1? and M2? of which M1? forms a stable nitride, carbide, boride or silicide under the prevailing conditions and of which M2? does not form a stable nitride, carbide, boride or silicide. M2? serves to bond the nitride, etc. of M1? to the substrate metal. Mixtures of M1? and/or M2? metals may be employed. This method is much easier to carry out than prior methods. Figure 1 shows a substrate alloy (10) with a laminar coating (11). Laminar coating (11) consists of intermediate metallic layer (12) and outer M1?Xn? layer (13). Figure 1A shows the substrate alloy (10), the outer M1?Xn? layer (13), a diffusion zone (D), and an intermediate zone (I). The diffusion zone (D) may be an alloy of one or more substrate metals and the metal M2? or it may be an interdiffusion layer resulting from diffusion of substrate metal outwardly away from the substrate (10) and of the metal M2? inwardly into the substrate. The intermediate zone (I) may be a cermet formed as a composite of M1?Xn? and M2?.

IPC 1-7

**C23C 8/20**; **C23C 8/24**; **C23C 8/08**

IPC 8 full level

**C23C 8/08** (2006.01); **C23C 8/20** (2006.01); **C23C 8/24** (2006.01); **C23C 26/00** (2006.01)

CPC (source: EP)

**C23C 26/00** (2013.01)

Citation (search report)

- No relevant documents have been disclosed.
- See references of WO 8602385A1

Designated contracting state (EPC)

BE CH FR LI

DOCDB simple family (publication)

**WO 8602385 A1 19860424**; DE 3590390 T1 19860828; DK 282186 A 19860616; DK 282186 D0 19860616; EP 0201531 A1 19861120; EP 0201531 A4 19881122; GB 2176809 A 19870107; GB 2176809 B 19881019; GB 8613492 D0 19860709; JP S62500599 A 19870312; SE 8602616 D0 19860611; SE 8602616 L 19860611

DOCDB simple family (application)

**US 8502031 W 19851016**; DE 3590390 T 19851016; DK 282186 A 19860616; EP 85905364 A 19851016; GB 8613492 A 19851016; JP 50470585 A 19851016; SE 8602616 A 19860611