

Title (en)

Method for the production of hard, wear-resistant external coats on a metallic material.

Title (de)

Verfahren zur Erzeugung harter, verschleissfester Randschichten auf einem metallischen Werkstoff.

Title (fr)

Procédé pour la production de couches superficielles dures, anti-usures sur un matériau métallique.

Publication

EP 0098453 A1 19840118 (DE)

Application

EP 83106058 A 19830621

Priority

DE 3224810 A 19820702

Abstract (en)

[origin: US4537793A] Hard, wear-proof surfaces are produced on a metallic material, such as a ferrous material, by applying a decomposable compound containing an element capable of hardening metallic materials, in the form of a powder, a paste-like admixture or a liquid, onto surfaces to be hardened, and applying an energy surge, obtained from, for example, a laser beam or an electron beam, to the surfaces containing such coating so as to decompose the coating and release the element which diffuses into the surface to be hardened. With this process, the base material is not subjected to any meaningful thermal loads and is not altered in term of its mechanical and physical properties.

Abstract (de)

Die Erfindung betrifft ein Kurzzeitdiffusionsverfahren zur Erzeugung harter, verschleißfester Oberflächen auf einem metallischen Werkstoff, wobei der Grundwerkstoff keine Wärmebeeinflussung erfährt und deshalb in seinen mechanischen und physikalischen Eigenschaften nicht verändert wird. Bei diesem Verfahren wird auf die zu härtende Oberfläche ein pulver-, pastenförmiger oder flüssiger Stoff aufgebracht, der durch einen Energiestoß zersetzt wird, wobei das freiwerdende Element in die Randschicht eindiffundiert.

IPC 1-7

C23C 11/08; **C23C 11/14**; **C23C 9/00**; **C23C 7/00**; **C23C 15/00**; **C23C 17/00**

IPC 8 full level

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CPC (source: EP US)

C23C 8/60 (2013.01 - EP US); **C23C 10/28** (2013.01 - EP US); **C23C 12/02** (2013.01 - EP US)

Citation (search report)

- [X] EP 0040092 A1 19811118 - PERMELEC ELECTRODE LTD [JP]
- [X] EP 0032887 A1 19810729 - SANDVIK AB [SE]
- [X] DE 2926879 A1 19800117 - FIAT RICERCHÉ
- [X] DE 2360547 B2 19791206
- [X] GB 1583835 A 19810204 - AVCO EVERETT RES LAB INC
- [X] PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 4, no. 77, June 4, 1980 THE PATENT OFFICE JAPANESE GOVERNMENT page 161 C 13 & JP-A-55 044 506 (KOMATSU SEISAKUSHO K.K.)
- [X] PATENT ABSTRACTS OF JAPAN, unexamined applications, C field, vol. 5, no. 94, June 19, 1981 THE PATENT OFFICE JAPANESE GOVERNMENT; page 151 C 59 & JP-A-56 038 464 (MITSUBISHI DENKI K.K.)

Cited by

EP0181073A1; EP0374557A3; EP0193674A1; EP0192874A1

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DOCDB simple family (publication)

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DOCDB simple family (application)

EP 83106058 A 19830621; AT 83106058 T 19830621; BR 8303546 A 19830701; DE 3224810 A 19820702; DE 3366714 T 19830621; DK 304683 A 19830701; JP 11681083 A 19830628; US 50128783 A 19830606