

Title (en)  
ZINC-NICKEL ELECTROPLATING

Title (de)  
ZINK-NICKEL-ELEKTROPLATTIERUNG

Title (fr)  
ELECTRODEPOSITION ZINC-NICKEL

Publication  
**EP 1292724 A4 20040908 (EN)**

Application  
**EP 00951046 A 20000615**

Priority  
US 0040208 W 20000615

Abstract (en)  
[origin: WO0196631A1] The present invention relates to an apparatus (12) for applying a zinc-nickel electroplate to a workpiece. The apparatus comprises a zinc-nickel electroplating bath (16) comprising an amine additive, such as poly(alkyleneimine), which is capable of being oxidized in the bath to cyanides. The bath has a pH more than about 14. A cathode workpiece (18) is positioned in the bath. An anode assembly (20) is also positioned in the bath. The anode assembly comprises an enclosure (22) defining an anolyte compartment (24), at least a portion of the enclosure being an ion exchange membrane (26). An anolyte (28) is positioned in the compartment. An insoluble metal anode (30) is immersed in the anolyte. The anolyte is a conductive salt or base solution and the anode is a metal or metal coating selected from the group consisting of nickel, cobalt, iron, chromium and alloys thereof.

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CPC (source: EP)  
**C25D 3/565** (2013.01); **C25D 17/10** (2013.01)

Citation (search report)  
• [X] DE 3712511 A1 19871015 - DIPSOL CHEM [JP]  
• [Y] PATENT ABSTRACTS OF JAPAN vol. 0140, no. 80 (C - 0689) 15 February 1990 (1990-02-15)  
• [Y] PATENT ABSTRACTS OF JAPAN vol. 0121, no. 17 (C - 487) 13 April 1988 (1988-04-13)  
• [Y] PATENT ABSTRACTS OF JAPAN vol. 0121, no. 81 (C - 499) 27 May 1988 (1988-05-27)  
• See references of WO 0196631A1

Cited by  
EP3358045A1; WO2018146041A1; EP2384800A1; EP3415665A1; CN110325669A; JP2019530800A; US11339492B2

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