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PNFP - JP3608351B B2 20050112

TI - (A)

EMBOSSING ROLL DIE AND ITS PRODUCTION

AB - (A)

PROBLEM TO BE SOLVED: To provide an embossing roll die which is good not only in mechanical durability but in chemical durability and the smoothness of a molding surface as well and a process for producing the same. SOLUTION: This embossing roll die 20 is constituted by forming a copper plating layer 23, a nickel plating layer 22 and a TiN layer 21 in this order on a cylinder roll surface. The process for producing the same consists of a stage for forming the nickel plating layer by either of electro-nickel plating or electroless nickel plating on the surface of the copper plating layer formed with patterns and a stage for forming the TiN layer by an ion plating method on the surface of the nickel plating layer.

CCI - C23C28/34; C23C28/322

FI - B21D37/20&Z; B29C33/38; C23C14/06&A; C23C14/06&N; C23C14/32&Z; C23C28/00&B

FT - 4E050/JA02; 4E050/JB01; 4E050/JB06; 4E050/JB09; 4E050/JB10; 4E050/JC02; 4E050/JD03; 4F202/AF01; 4F202/AG01; 4F202/AG05; 4F202/AH76; 4F202/AJ02; 4F202/AJ07; 4F202/AJ09; 4F202/AM32; 4F202/CA09; 4F202/CA19; 4F202/CB02; 4F202/CB29; 4F202/CD12; 4F202/CD18; 4F202/CD22; 4F202/CD23; 4F202/CK11; 4K029/AA02; 4K029/AA29; 4K029/BA08; 4K029/BA12; 4K029/BA60; 4K029/BB02; 4K029/BC01; 4K029/BD03; 4K029/CA03; 4K029/FA01; 4K029/JA02; 4K044/AA02; 4K044/BA06; 4K044/BA18; 4K044/BB04; 4K044/BB10; 4K044/BB14; 4K044/BC02; 4K044/BC06; 4K044/CA07; 4K044/CA13; 4K044/CA15; 4K044/CA18; 4K044/CA41; 4K044/CA53

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TI - (A)

MANUFACTURE OF EMBOSSED PATTERN TRANSFER ROLLER

AB - (A)

PURPOSE: To manufacture a transfer plate capable of accurately transferring an embossed pattern easily by forming the embossed pattern onto the outer circumferential surface of a matrix roller, transferring the pattern onto the inner circumferential surface of a first electroforming layer through electroforming and inverting the pattern onto the outer circumferential surface of a second plating layer. CONSTITUTION: A pattern transfer plate 3a having a grain pattern is formed onto the outer circumferential surface of the epoxy layer 3 of a model roller 2 having the same length and the same diameter as a transfer roller as a finished product, and a silver thin-film 5 is shaped by a silver film reaction. The model roller 2 is dipped into a copper plating solution tank, and the grain pattern of the pattern transfer plate 3a is formed onto the inner circumferential surface of a copper plating layer 7 through electroforming. A reinforcing layer 11 composed of an epoxy resin is laminated onto the outer circumferential surface of the copper plating layer 7 and cured, a core cylinder 1 on the inside of the epoxy layer 3 is extracted, and the epoxy layer 3 is peeled from the copper plating layer 7, thus acquiring a hollow roll. The hollow roll is dipped into a nickel plating solution tank, and a pattern transfer plate 15a adapted to the grain pattern is shaped onto the outer circumferential surface of the layer 15 through electroforming and the precipitation of a nickel plating layer 15.

FI - B29C33/38; B29C59/04&C; C25D1/04

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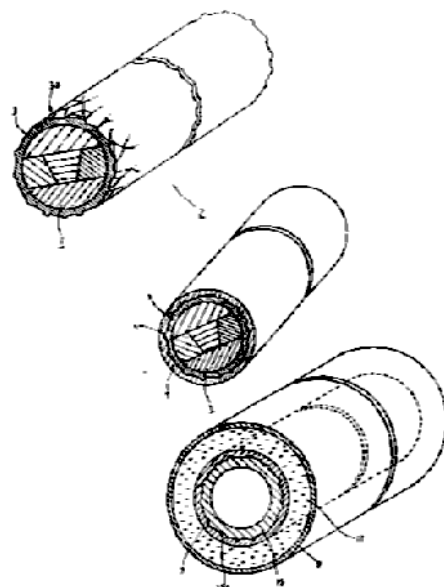
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