

Title (en)  
Ion implanted inking roll

Title (de)  
Farbübertragungswalze mit Ionenimplantat

Title (fr)  
Rouleau encreur avec implantation d'ions

Publication  
**EP 0748701 A2 19961218 (DE)**

Application  
**EP 96107011 A 19960503**

Priority  
DE 19516032 A 19950504

Abstract (en)  
Ink transfer roller (1) has a surface structure, mechanically applied or applied by laser, made of saucers (N) in a microporous, metallic or (metal)-ceramic hard material layer (HS). The novelty is that source microcracks (M) and pores are closed by ion implantation material (H) applied by high voltage plasma. The ion implantation material (H) is made of Ti and Mo, and is coated with a wear resistant thin layer covering layer (D) made of a hard material, esp. a metal oxide and/or metal nitride so that the covering layer has a predetermined affinity to the printing ink to be applied by the roller. The covering layer is made of ZrO<sub>2</sub>. The hard layer (HS) consists of polished Cr<sub>2</sub>O<sub>3</sub> in a thickness of 100-150 μm, or consists of plasma-deposited Ni-Cr alloy in a thickness of 100 μm, or consists of steel, copper or nickel coated with metal matrix. The roller is produced by subjecting it to turbulent heavy metal implantation at 50-80 degrees C in a gas discharge plasma using a voltage of 1000 V. Ti and Mo ions are used in a wt. ratio of 70/30 to 90/10. ZrO<sub>2</sub> is implanted from the gas discharge plasma.

Abstract (de)  
Farbübertragungswalze mit einer mechanisch oder durch Laserung eingebrachten Oberflächenstruktur aus Farbübertragungsnapfchen (N) in einer mikroporösen, metallischen oder keramischen oder metallkeramischen Hartstoffschicht (HS), wobei die oberflächlichen Mikrorisse (M) und Poren durch ein mit einem Hochspannungsplasma appliziertes metallisches Ionenimplantatmaterial (H) geschlossen sind. Eine Deckschicht (D) aus einem implantierten Oxid gibt eine erhöhte Glätte und eine gewünschte Oberflächenaffinität zur Druckfarbe. <IMAGE>

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**B41N 7/00**

IPC 8 full level  
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CPC (source: EP)  
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Citation (applicant)  
• DE 4007130 C1 19910627  
• DE 4426485 C1 19951130 - ZECHER GMBH KURT [DE]  
• ZEITSCHRIFT: FLEXO, vol. 10, no. 10, 1985, pages 45 - 50

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