

Title (en)  
METHOD FOR MAKING A WRITING OR COLOURING PENCIL BY TRIPLE EXTRUSION AND WRITING OR COLOURING PENCIL  
COMPRISING AN INTERMEDIATE PROTECTIVE LAYER

Title (de)  
VERFAHREN ZUR HERSTELLUNG EINES STIFTES DURCH TRI-EXTRUSION UND STIFT MIT EINER SCHUTZSCHICHT

Title (fr)  
PROCEDE DE FABRICATION PAR TRI-EXTRUSION D'UN CRAYON A ECRIRE OU A COLORIER ET CRAYON A ECRIRE OU A COLORIER  
COMPORTANT UNE COUCHE INTERMEDIAIRE DE PROTECTION

Publication  
**EP 1150847 A1 20011107 (FR)**

Application  
**EP 00985357 A 20001129**

Priority  
• FR 0003334 W 20001129  
• FR 9915696 A 19991213

Abstract (en)  
[origin: WO0143987A1] The invention concerns a method for continuously making writing or colouring pencils which consists in: co-extruding a first filled thermoplastic material, called lead material, and around the latter an intermediate layer called protective layer in a thermoplastic material free of expanding agent and a second thermoplastic material containing an expanding agent, called wood material, and cooling said co-extruded thermoplastic materials. The invention is characterised in that the thermoplastic material forming the protective layer is selected so as to remain deformable while the lead material is removed, during the cooling process. The pencil (1) is formed by superposing a core (1) made of a first filled thermoplastic material called lead material, a non-expanded thermoplastic material protective layer (2) and a layer (3) made of a second expanded thermoplastic material called wood material. The invention is characterised in that the thermoplastic material forming the protective layer (2) has a freezing point lower than that of the thermoplastic material forming the lead material (1).

IPC 1-7  
**B43K 19/16**

IPC 8 full level  
**B29C 47/06** (2006.01); **B43K 19/02** (2006.01); **B43K 19/16** (2006.01); **B29K 101/12** (2006.01); **B29L 9/00** (2006.01); **B29L 31/00** (2006.01)

CPC (source: EP US)  
**B43K 19/16** (2013.01 - EP US); **Y10T 428/2973** (2015.01 - EP US); **Y10T 428/31924** (2015.04 - EP US); **Y10T 428/31928** (2015.04 - EP US)

Cited by  
DE202011103995U1; DE102012000269A1; WO2013013762A1; US9579865B2; DE102012000269B4

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)  
**WO 0143987 A1 20010621**; AR 030173 A1 20030813; AT E358029 T1 20070415; AU 2180301 A 20010625; BR 0007874 A 20011016; CA 2362775 A1 20010621; CA 2362775 C 20070130; DE 60034108 D1 20070510; DE 60034108 T2 20071206; DZ 3144 A1 20010621; EG 23174 A 20040630; EP 1150847 A1 20011107; EP 1150847 B1 20070328; ES 2284550 T3 20071116; FR 2802148 A1 20010615; FR 2802148 B1 20030124; HK 1043769 A1 20020927; HK 1043769 B 20070928; JP 2003516888 A 20030520; JP 4934260 B2 20120516; MA 25343 A1 20011231; MX PA01008169 A 20040405; PT 1150847 E 20070621; US 6572295 B1 20030603

DOCDB simple family (application)  
**FR 0003334 W 20001129**; AR P000106570 A 20001212; AT 00985357 T 20001129; AU 2180301 A 20001129; BR 0007874 A 20001129; CA 2362775 A 20001129; DE 60034108 T 20001129; DZ 013144 A 20010209; EG 20001533 A 20001211; EP 00985357 A 20001129; ES 00985357 T 20001129; FR 9915696 A 19991213; HK 02103485 A 20020507; JP 2001545095 A 20001129; MA 26294 A 20010813; MX PA01008169 A 20001129; PT 00985357 T 20001129; US 91319602 A 20020325