

Title (en)

A SECURITY SHEET OR DOCUMENT HAVING ONE OR MORE ENHANCED WATERMARKS

Title (de)

SICHERHEITSPAPIER ODER -DOKUMENT MIT EINEM ODER MEHREREN VERBESSERTEN WASSERZEICHEN

Title (fr)

FEUILLE OU DOCUMENT DE SÉCURITÉ COMPORTANT UN OU PLUSIEURS FILIGRANES AMÉLIORÉS

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Application

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- US 201461924000 P 20140106
- EP 18154768 A 20141202
- EP 14821361 A 20141202
- US 2014068205 W 20141202

Abstract (en)

[origin: WO2015084872A2] The invention generally relates to a security sheet or document having one or more enhanced watermarks. In one exemplary embodiment, the inventive security sheet or document is a single-ply paper that is made up of a paper layer including one or more watermarks, and a micro-optic security device {e.g., a patch or thread} that at least partially covers an upper or face portion of the watermark(s). The overlying patch or thread increases the durability of the watermark(s), thereby allowing for the watermark(s) as well as reduced fiber density areas therein to be made larger, and further allowing for the reduced fiber density areas to be made thinner. In a preferred embodiment, the micro-optic security device projects one or more synthetic images that coordinate or link in with the watermark design(s). In a more preferred embodiment, the micro-optic security device offers a machine detectable/readable feature in the form of enhanced IR- brightness, especially when measured in transmission. As will be readily appreciated, the inventive security sheet or document offers greatly improved counterfeit-resistance.

IPC 8 full level

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Citation (opposition)

Opponent : Leonhard Kurz Stiftung & Co. KG

- WO 2005052650 A2 20050609 - NANOVENTIONS INC [US], et al
- US 2008037131 A1 20080214 - STEENBLIK RICHARD A [US], et al
- WO 2011107782 A1 20110909 - RUE DE INT LTD [GB], et al
- JP 2007261112 A 20071011 - DAINIPPON PRINTING CO LTD
- WO 2006028910 A1 20060316 - DU PONT [US], et al
- WO 2006028909 A1 20060316 - DU PONT [US], et al
- US 4605846 A 19860812 - DURET BERNARD [FR], et al
- JP 2007136907 A 20070607 - DAINIPPON PRINTING CO LTD
- EP 1308485 A1 20030507 - SICPA HOLDING SA [CH]
- ANONYMOUS: "Titanium dioxide (anatase)", 1 January 2023 (2023-01-01), pages 1 - 4, XP093129158, Retrieved from the Internet <URL:https://webbook.nist.gov/cgi/cbook.cgi?Name=Titanium+dioxide+%28anatase&Units=SI#Top> [retrieved on 20230830]

Opponent : Oberthur Fiduciaire SAS

- US 2005180020 A1 20050818 - STEENBLIK RICHARD A [US], et al
- US 2007058260 A1 20070315 - STEENBLIK RICHARD A [US], et al
- US 2008037131 A1 20080214 - STEENBLIK RICHARD A [US], et al
- US 2007273143 A1 20071129 - CRANE TIMOTHY T [US], et al
- US 2007151478 A1 20070705 - ERK PETER [DE], et al
- GB 1593783 A 19810722 - SODECO COMPTUEURS DE GENEVE
- CH 287332 A 19521130 - HERBIG WOLFGANG DR ING [DE]
- KRISTIAN REUNANEN: "Window Thread Test Methods", MASTER'S DEGREE PROJECT, 29 October 2010 (2010-10-29), Stockholm, Sweden, pages 1 - 20, XP093117885

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