

Title (en)

METHOD FOR THE COLORED MARKING OF VALUE OR SECURITY DOCUMENTS

Title (de)

VERFAHREN ZUM FARBIGEN MARKIEREN VON WERT- ODER SICHERHEITSDOKUMENTEN

Title (fr)

PROCÉDÉ DE MARQUAGE COLORÉ DE DOCUMENTS DE VALEUR ET DE SÉCURITÉ

Publication

EP 2539154 A1 20130102 (DE)

Application

EP 11705874 A 20110225

Priority

- DE 102010010072 A 20100226
- EP 2011052802 W 20110225

Abstract (en)

[origin: WO2011104331A1] The invention relates to a marking device (1) for a value or security document (2) and to a method for the permanent, in particular distinct, multicolored marking of value and/or security documents (2). The method for the permanent colored marking of a value or security document (2) comprises the following steps: providing a document body (40) which comprises regions having different colors, wherein each of the individual regions is single-colored; providing a marking device which comprises at least one laser light source (5) for generating laser light (6) and a light guide device (8, 8') which is coupled to the at least one laser light source (5) such that a focus (19) of the laser light (6) of the laser light source (5) can be positioned in a controlled manner on or in the document body (40) of the value or security document (2); iteratively deliberately positioning the focus (19) on or in the document body (40) and irradiating the laser light (6') in order to deliberately change the color of one or more regions locally so that subsequently the document body (40) conveys a multicolored color effect to a human observer when irradiated with white light, wherein the laser light (6) is irradiated by means of short or ultrashort laser pulses which have a pulse duration of less than 100 ps or less than 10 ps. As a result, non-linear interactions between the material of the value or security document (2) and the laser light (6') can be utilized for marking. In this way, improved focusing of the laser light (6'), and consequently a higher density of the colored markings establishing the color, can be utilized or produced, so that higher color intensity can be implemented.

IPC 8 full level

B41M 3/14 (2006.01); **B41J 2/45** (2006.01); **B41J 2/47** (2006.01); **B41M 5/26** (2006.01); **B41M 5/34** (2006.01); **B42D 15/00** (2006.01); **B44B 7/00** (2006.01); **G06K 1/12** (2006.01)

CPC (source: EP US)

B41J 2/451 (2013.01 - EP); **B41J 2/47** (2013.01 - EP); **B41M 5/34** (2013.01 - EP); **B42D 25/29** (2014.10 - EP); **B42D 25/41** (2014.10 - EP US); **B44B 7/007** (2013.01 - EP); **B41M 3/14** (2013.01 - EP); **B41M 5/267** (2013.01 - EP); **B42D 2033/20** (2022.01 - EP); **B42D 2035/24** (2022.01 - EP)

Citation (search report)

See references of WO 2011104331A1

Cited by

EP4328043A1; GB2567811A; GB2567811B; GB2570434A; GB2570434B

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

DE 102010010072 A1 20110901; EP 2539154 A1 20130102; EP 2539154 B1 20140806; EP 2539154 B9 20141210; PL 2539154 T3 20141128; WO 2011104331 A1 20110901

DOCDB simple family (application)

DE 102010010072 A 20100226; EP 11705874 A 20110225; EP 2011052802 W 20110225; PL 11705874 T 20110225