

Title (en)  
METHOD FOR FORMING AND DETECTING SECURITY ELEMENTS ON THE SURFACE OF A COMPONENT OR IN A COMPONENT, AND  
SYSTEM FOR DETECTING SAID SECURITY ELEMENT

Title (de)  
VERFAHREN ZUR AUSBILDUNG UND DETEKTION VON SICHERHEITSELEMENTEN AUF DER OBERFLÄCHE EINES BAUTEILS ODER IN  
EINEM BAUTEIL, UND SYSTEM ZUR DETEKTION DIESER SICHERHEITSELEMENTS

Title (fr)  
DISPOSITIF POUR CONCEVOIR ET DÉTECTER DES ÉLÉMENTS DE SÉCURITÉ SUR LA SURFACE D'UNE PIÈCE OU DANS UNE PIÈCE ET  
SYSTÈME POUR DÉTECTER CES ÉLÉMENTS DE SÉCURITÉ

Publication  
**EP 3452300 A1 20190313 (DE)**

Application  
**EP 17721583 A 20170426**

Priority  
• DE 102016207756 A 20160504  
• EP 2017059926 W 20170426

Abstract (en)  
[origin: WO2017191008A1] The invention relates to a method for forming and detecting security elements on the surface of a component and/or in a component, wherein, on the surface of the component and/or in the component, which is formed of a magnetic or a non-magnetic material, at least one layer or at least one area preferably formed with a magnetic material or a material different from the component material is formed in a locally and geometrically defined manner. At least one removal track, at least one heat-affected area, and/or at least one remelted treatment track is formed on the surface of a component along a specified contour corresponding to the security feature in question by means of a locally and geometrically defined material removal or energy input. When the component is produced by means of an additive production method, a magnetic material different from the material of the component is inserted into the component in at least one specified position in a locally and geometrically defined manner. In order to detect the security element by means of a magnetization unit, at least one magnetic field penetrating the component is generated or one magnetic flux is produced within the magnetization unit, which magnetic flux penetrates the component. In order to check a security element formed in such a way, the magnetic stray fields occurring at the security element as a result of the at least one magnetic field are detected by means of a detection unit and the measurement signals captured by means of the detection unit are transmitted to an evaluating unit having an image-processing or pattern recognition system. The evaluating unit having the image-processing or pattern recognition system is used to check, by means of the detected magnetic stray fields, whether the detected security element matches a specification or not.

IPC 8 full level  
**B42D 25/41** (2014.01); **B42D 25/369** (2014.01); **B42D 25/435** (2014.01); **G01R 33/00** (2006.01); **G06K 7/08** (2006.01); **G07D 7/04** (2016.01)

CPC (source: EP US)  
**B42D 25/369** (2014.10 - EP US); **B42D 25/41** (2014.10 - EP US); **B42D 25/435** (2014.10 - EP US); **G01R 33/00** (2013.01 - EP US); **G01R 33/032** (2013.01 - EP US); **G06K 7/082** (2013.01 - EP US); **G06V 20/95** (2022.01 - EP); **G07D 7/003** (2017.04 - EP US); **G07D 7/04** (2013.01 - EP US); **G06K 7/08** (2013.01 - EP US); **G06K 7/088** (2013.01 - EP US); **G06K 19/12** (2013.01 - EP US); **G06V 20/95** (2022.01 - US)

Citation (search report)  
See references of WO 2017191008A1

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

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**DE 102016207756 A1 20171109**; EP 3452300 A1 20190313; US 11040564 B2 20210622; US 2019202228 A1 20190704;  
WO 2017191008 A1 20171109

DOCDB simple family (application)  
**DE 102016207756 A 20160504**; EP 17721583 A 20170426; EP 2017059926 W 20170426; US 201716099105 A 20170426