

Title (en)
MICROOPTICAL SYSTEM FOR THE FORMATION OF THE 3D IMAGE IN THE ZERO ORDER OF DIFFRACTION

Title (de)
MIKROOPTISCHES SYSTEM ZUR ERZEUGUNG EINES 3D-BILDES IN DER NULLTEN BEUGUNGSORDNUNG

Title (fr)
SYSTÈME MICRO-OPTIQUE POUR LA FORMATION DE L'IMAGE 3D DANS L'ORDRE ZÉRO DE DIFFRACTION

Publication
EP 3842252 A1 20210630 (EN)

Application
EP 19219414 A 20191223

Priority
EP 19219414 A 20191223

Abstract (en)
The claimed microoptical system for visual control of products belongs mainly to the field of optical security technologies and is used to authenticate banknotes, documents, passports, IDs, plastic cards, securities, and brands. The microoptical system consists of fragments of multilevel kinoforms and fragments of diffraction gratings of various periods and directions. In accordance with the claims, a method for synthesizing microoptical systems for forming 3D images in the zero diffraction order is described. Multilevel kinoform is used for the formation of 3D-images. A method for computing the microrelief of a microoptical system that forms a 3D image at diffraction angles smaller than 60° is proposed. At large diffraction angles the observer sees another 2D color image. Microoptical systems are manufactured using electron beam technology and can be replicated using standard equipment for the manufacture of embossed holograms.

IPC 8 full level
B42D 25/328 (2014.01)

CPC (source: EP)
B42D 25/328 (2014.10)

Citation (applicant)

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Citation (search report)

- [A] EA 201700161 A1 20180228
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Cited by
GB2602796A; GB2602796B

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)
EP 3842252 A1 20210630; EP 3842252 B1 20220525; CY 1125504 T1 20240920

DOCDB simple family (application)
EP 19219414 A 20191223; CY 221100567 T 20220823