Title (en)

METHOD FOR THE NON-DESTRUCTIVE CHECKING OF MATERIALS AND THE DEVICE FOR ITS IMPLEMENTATION

Title (de)

VERFAHREN ZUR ZERSTÖRUNGSFREIEN PRÜFUNG VON MATERIALIEN UND VORRICHTUNG ZU DESSEN DURCHFÜHRUNG

Title (fr)

PROCÉDÉ DE CONTRÔLE NON DESTRUCTIF DE MATÉRIAUX ET DISPOSITIF POUR SA MISE EN OEUVRE

Publication

EP 3833972 A1 20210616 (EN)

Application

EP 19761723 A 20190730

Priority

- CZ 2018397 A 20180807
- CZ 2019000037 W 20190730

Abstract (en)

[origin: WO2020030202A1] A method for the non-destructive checking of materials according to which, firstly by a laser impulse source (5) at least one laser impulse is formed, which is subsequently converted into a band of beams (6) of light which enters the transparent optical cylinder (3) and is directed through this to the layer (7) of the material (8) to be checked which absorbs it, when are produced at least two directionally different ultrasonic impulses (11,13), of which at least one initial ultrasonic impulse (11) is spread back into the transparent optical cylinder (3) and is received by the ultrasonic signal receiver (12), and at least one secondary ultrasonic impulse (13) spreads to the material (8) to be checked where it is scattered by its in homogeneity (26), generating a group (17) of reflected ultrasonic impulses that are returned in the direction of the transparent optical cylinder (3), and subsequently with a certain time delay (P) are received by the ultrasonic impulse receiver (12). A device for the non-destructive checking of materials (8) comprising a transparent optical cylinder (3) with its bottom side (32) arranged on the surface layer (7) of the material (8) to be checked on the upper side (31) of the transparent optical cylinder (3) a head (2) is arranged which includes an expansion lens, and where the head (2) is connected to a source (5) of laser impulses, while arranged on the upper side (31) of the transparent optical cylinder (3) is an ultrasonic impulse receiver (12) simultaneously connected to the evaluating device (29).

IPC 8 full level

G01N 29/04 (2006.01); **G01N 29/06** (2006.01); **G01N 29/07** (2006.01); **G01N 29/22** (2006.01); **G01N 29/24** (2006.01); **G01N 29/265** (2006.01); **G01N 29/28** (2006.01); **G01N 29/34** (2006.01); **G01N 29/44** (2006.01)

CPC (source: CZ EP)

G01H 9/008 (2013.01 - CZ); **G01N 29/04** (2013.01 - CZ); **G01N 29/043** (2013.01 - EP); **G01N 29/048** (2013.01 - CZ); **G01N 29/0645** (2013.01 - EP); **G01N 29/069** (2013.01 - CZ EP); **G01N 29/07** (2013.01 - CZ EP); **G01N 29/22** (2013.01 - CZ); **G01N 29/221** (2013.01 - EP); **G01N 29/225** (2013.01 - EP); **G01N 29/2418** (2013.01 - CZ EP); **G01N 29/2437** (2013.01 - EP); **G01N 29/2462** (2013.01 - EP); **G01N 29/2487** (2013.01 - EP); **G01N 29/265** (2013.01 - CZ EP); **G01N 29/28** (2013.01 - EP); **G01N 29/343** (2013.01 - EP); **G01N 29/4436** (2013.01 - EP); G01N 2291/044 (2013.01 - EP); G01N 2291/102 (2013.01 - EP); G01N 2291/2632 (2013.01 - EP)

Citation (search report)

See references of WO 2020030202A1

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)

WO 2020030202 A1 20200213; CZ 2018397 A3 20200212; CZ 308186 B6 20200212; EP 3833972 A1 20210616

DOCDB simple family (application)

CZ 2019000037 W 20190730; CZ 2018397 A 20180807; EP 19761723 A 20190730