

Title (en)

METHOD AND DEVICE FOR REMOVING BRITTLE-HARD MATERIAL WHICH IS TRANSPARENT TO LASER RADIATION, BY MEANS OF LASER RADIATION

Title (de)

VERFAHREN UND VORRICHTUNG ZUM ABTRAGEN VON SPRÖDHARTEM, FÜR LASERSTRAHLUNG TRANSPARENTEM MATERIAL MITTELS LASERSTRAHLUNG

Title (fr)

PROCÉDÉ ET DISPOSITIF PERMETTANT D'ENLEVER AU MOYEN D'UN RAYONNEMENT LASER DE LA MATIÈRE DURE ET CASSANTE TRANSPARENTE AU RAYONNEMENT LASER

Publication

EP 2978558 A2 20160203 (DE)

Application

EP 14721752 A 20140324

Priority

- DE 102013005135 A 20130326
- EP 2014000788 W 20140324

Abstract (en)

[origin: WO2014154345A2] The invention relates to a method for removing brittle-hard material having a spatial volume of a given thickness between a top side and an underside by means of laser radiation, and the material has a defined optical penetration depth which is greater than or equal to the thickness of said material. The laser radiation is incident at a defined angle of incidence with respect to the surface normal of the top side; said laser radiation is designated as primary laser radiation. The primary laser radiation is at least partly reflected at the underside of the material, such that secondary laser radiation is generated in the volume of the material as a result of the reflection. For the processing of the brittle-hard material, the latter is backed by a further material on the underside in a positively locking manner. The invention also relates to a corresponding device.

IPC 8 full level

B23K 26/06 (2006.01); **B23K 26/12** (2006.01); **B23K 26/18** (2006.01); **B23K 26/40** (2014.01); **C03B 33/09** (2006.01)

CPC (source: EP)

B23K 26/1224 (2015.10); **B23K 26/18** (2013.01); **B23K 26/36** (2013.01); **B23K 26/38** (2013.01); **B23K 26/40** (2013.01); **B23K 2103/50** (2018.07); **C03B 33/0222** (2013.01)

Citation (search report)

See references of WO 2014154345A2

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 102013005135 A1 20141002; CN 105283265 A 20160127; EP 2978558 A2 20160203; KR 20150135381 A 20151202; WO 2014154345 A2 20141002; WO 2014154345 A3 20141231

DOCDB simple family (application)

DE 102013005135 A 20130326; CN 201480030335 A 20140324; EP 14721752 A 20140324; EP 2014000788 W 20140324; KR 20157030101 A 20140324