Title (en)

APPARATUS AND METHOD FOR CUTTING AND CHAMFERING A MATERIAL

Title (de)

VORRICHTUNG UND VERFAHREN ZUM TRENNEN UND ABFASEN EINES MATERIALS

Title (fr)

APPAREIL ET PROCÉDÉ DE COUPE ET DE CHANFREINAGE DE MATÉRIAU

Publication

EP 4263115 A1 20231025 (DE)

Application

EP 21807005 A 20211103

Priority

- DE 102020134197 A 20201218
- EP 2021080510 W 20211103

Abstract (en)

[origin: WO2022128242A1] The invention relates to a method for cutting and chamfering a workpiece (1) containing a transparent material, wherein material modifications (5) are introduced into the transparent material of the workpiece (1) along a cutting line (4) by means of ultrashort laser pulses of an ultrashort pulse laser (2), whereupon the material of the workpiece (1) is cut, in a cutting step, along the material modification area (50) formed thereby, the laser pulses being applied to the workpiece (1) at an angle of attack (α), and the material modifications (5) being modifications of type 1 and/or type II that are associated with a change in the refractive index of the material of the workpiece (1).

IPC 8 full level

B23K 26/0622 (2014.01); **B23K 26/073** (2006.01); **B23K 26/08** (2014.01); **B23K 26/53** (2014.01); **B32B 17/10** (2006.01); **C03B 33/02** (2006.01); **C03B 33/09** (2006.01); B23K 101/40 (2006.01); B23K 103/00 (2006.01)

CPC (source: EP KR US)

B23K 26/0624 (2015.10 - EP KR US); **B23K 26/0643** (2013.01 - US); **B23K 26/0736** (2013.01 - EP KR); **B23K 26/0853** (2013.01 - EP KR); **B23K 26/0876** (2013.01 - EP KR); **B23K 26/38** (2013.01 - KR US); **B23K 26/40** (2013.01 - US); **B23K 26/53** (2015.10 - EP KR US); **C03B 33/0222** (2013.01 - EP KR); B23K 2101/40 (2018.07 - EP KR); B23K 2103/52 (2018.07 - EP KR); B23K 2103/54 (2018.07 - EP KR); B23K 2103/56 (2018.07 - EP KR)

Citation (search report)

See references of WO 2022128242A1

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022128242 A1 20220623; CN 116669892 A 20230829; DE 102020134197 A1 20220623; EP 4263115 A1 20231025; JP 2024500756 A 20240110; KR 20230117245 A 20230807; US 2023347451 A1 20231102

DOCDB simple family (application)

EP 2021080510 W 20211103; CN 202180085774 A 20211103; DE 102020134197 A 20201218; EP 21807005 A 20211103; JP 2023536974 A 20211103; KR 20237024246 A 20211103; US 202318336045 A 20230616