Title (en)

LASER PROCESSING OF A WORKPIECE WITH A CURVED SURFACE

Title (de)

LASERBEARBEITUNG EINES WERKSTUECKS MIT EINER GEKRUEMMTEN OBERFLAECHE

Title (fr)

TRAITEMENT AU LASER D'UNE PIÈCE À TRAVAILLER AYANT UNE SURFACE INCURVÉE

Publication

EP 4196312 A1 20230621 (DE)

Application

EP 21758351 A 20210805

Priority

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Abstract (en)

[origin: WO2022033958A1] A method is disclosed for processing the material of a workpiece (9) using a laser beam (3), wherein the workpiece (9) comprises a material which is largely transparent to the laser beam (3) and which has a curved surface (9A). The method comprises the steps of: beam shaping (step 101) the laser beam (3) to form an elongate focal zone (7) in the material of the workpiece (9), the beam shaping being carried out using an arrangement of diffractive and/or refractive optical units and comprising: - focus-forming beam shaping (step 101A), which brings about an arrival of beam components (3A) at an arrival angle (δ') at a beam axis (5) of the laser beam (3) to form the elongate focal zone (7) along the beam axis (5) in the workpiece (9) by interference, and - phase-correcting beam shaping (step 101B), which counteracts influencing of the interference by an entry of the laser beam (3) into the workpiece (9), and adjusting (step 105) beam parameters of the laser beam (3) in such a way that the material of the workpiece (9) is modified in the elongate focal zone (7).

IPC 8 full level

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Citation (search report)

See references of WO 2022033958A1

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