

Title (en)

METHOD FOR WELDING USING A WIRE-TYPE FILLER MATERIAL AND AT LEAST ONE LASER BEAM

Title (de)

VERFAHREN ZUM SCHWEIßEN MIT EINEM DRAHTFÖRMIGEN ZUSATZWERKSTOFF UND MINDESTENS EINEM LASERSTRAHL

Title (fr)

PROCÉDÉ POUR SOUDER AU MOYEN D'UN MÉTAL D'APPORT SOUS FORME DE FIL ET D'AU MOINS UN FAISCEAU LASER

Publication

**EP 4168206 A1 20230426 (DE)**

Application

**EP 21733951 A 20210615**

Priority

- DE 102020207573 A 20200618
- EP 2021066078 W 20210615

Abstract (en)

[origin: CA3186503A1] In the method for welding using a wire-type filler material and at least one laser beam which is directed onto a surface of at least one workpiece (3) to be processed, wire-type filler material (1) is conveyed towards the surface of the workpiece (3) by means of a correspondingly formed wire feed drive (2). Filler material (1) in the region directly above the relevant surface is successively melted off using the energy of the at least one laser beam (5) during the feed movement thereof. The filler material (1) and workpiece (3) are connected to an electrical voltage source and form an electrical circuit. The electrical voltage, the electrical current and/or the electrical resistance is measured and used as a controlled variable for the wire feed movement and/or the power of the at least one laser beam (5). If a predefined threshold for the electrical voltage and/or the electrical current is not met, or if a predefined threshold of the electrical resistance is exceeded, the power of the laser beam (5) is reduced or the at least one laser beam (5) is switched off or not switched on, or the start, halting or termination of the welding process is initiated.

IPC 8 full level

**B23K 26/03** (2006.01); **B22F 3/00** (2021.01); **B22F 3/105** (2006.01); **B22F 10/00** (2021.01); **B22F 12/00** (2021.01); **B23K 10/02** (2006.01); **B23K 26/211** (2014.01); **B23K 26/342** (2014.01); **B23K 35/02** (2006.01)

CPC (source: EP US)

**B23K 10/027** (2013.01 - EP); **B23K 26/03** (2013.01 - EP); **B23K 26/21** (2015.10 - US); **B23K 26/211** (2015.10 - EP); **B23K 26/342** (2015.10 - EP); **B23K 26/702** (2015.10 - US); **B23K 35/0294** (2013.01 - EP)

Citation (search report)

See references of WO 2021255012A1

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)

**DE 102020207573 A1 20211223**; CA 3186503 A1 20211223; CN 115943010 A 20230407; EP 4168206 A1 20230426; JP 2023531428 A 20230724; US 2023234171 A1 20230727; WO 2021255012 A1 20211223

DOCDB simple family (application)

**DE 102020207573 A 20200618**; CA 3186503 A 20210615; CN 202180043415 A 20210615; EP 2021066078 W 20210615; EP 21733951 A 20210615; JP 2022577647 A 20210615; US 202118001892 A 20210615