

Title (en)

METHOD FOR ALIGNING A MULTI BEAM IRRADIATION SYSTEM

Title (de)

VERFAHREN ZUM AUSRICHTEN EINES MEHRSTRAHL-BESTRAHLUNGSSYSTEMS

Title (fr)

PROCÉDÉ D'ALIGNEMENT D'UN SYSTÈME D'IRRADIATION À FAISCEAUX MULTIPLES

Publication

EP 3755485 A1 20201230 (EN)

Application

EP 18706721 A 20180220

Priority

EP 2018054179 W 20180220

Abstract (en)

[origin: WO2019161886A1] A method for aligning a multi beam irradiation system (20) for use in an apparatus (10) for producing a three-dimensional work piece by irradiating layers of a raw material powder with electromagnetic or particle radiation comprises the steps of: i) applying a first raw material powder layer onto a carrier (16) so as to define an irradiation plane (S) to be irradiated with radiation beams (24a, 24b) emitted by the irradiation system (20); ii) producing a first test structure (34) in the first raw material powder layer in an overlap zone (18c) of the irradiation plane (S) using a first radiation beam (24a) emitted by a calibrated first irradiation unit (22a) of the irradiation system (20); iii) producing a second test structure (36) in the first raw material powder layer in the overlap zone (18c) of the irradiation plane (S) using a second radiation beam (24b) emitted by a calibrated second irradiation unit (22b) of the irradiation system (20); iv) determining an offset (dxt, dyt) between the first and the second test structure (34, 36) in the irradiation plane (S); and v) aligning at least one of the first and the second calibrated irradiation unit (22a, 22b) based on the determined offset (dxt, dyt) between the first and the second test structure (34, 36) in such a manner that the offset does not exceed a threshold value.

IPC 8 full level

B22F 3/105 (2006.01); **B23K 15/00** (2006.01); **B23K 26/04** (2014.01); **B29C 64/268** (2017.01); **B29C 64/277** (2017.01); **B33Y 10/00** (2015.01); **B33Y 50/02** (2015.01); **G05B 19/401** (2006.01); **G05B 19/4099** (2006.01); **H01J 37/317** (2006.01)

CPC (source: EP US)

B22F 10/28 (2021.01 - EP US); **B22F 10/31** (2021.01 - EP US); **B22F 10/36** (2021.01 - EP US); **B22F 12/45** (2021.01 - EP US); **B22F 12/90** (2021.01 - EP US); **B33Y 10/00** (2014.12 - EP US); **B33Y 50/02** (2014.12 - EP); **H01J 37/3178** (2013.01 - EP); **B22F 10/85** (2021.01 - EP US); **B22F 12/41** (2021.01 - EP US); **B22F 12/49** (2021.01 - EP US); **B29C 64/268** (2017.08 - EP); **B29C 64/277** (2017.08 - EP); **B29C 64/393** (2017.08 - EP); **Y02P 10/25** (2015.11 - EP)

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 2019161886 A1 20190829; CN 111867754 A 20201030; CN 111867754 B 20221028; EP 3755485 A1 20201230; JP 2021514309 A 20210610

DOCDB simple family (application)

EP 2018054179 W 20180220; CN 201880091414 A 20180220; EP 18706721 A 20180220; JP 2020566874 A 20180220