

Title (en)

METHOD FOR AVOIDING RESONANCE DAMAGE DURING CLEANING OF AN AT LEAST PARTLY ADDITIVELY MANUFACTURED COMPONENT, CLEANING DEVICE, MASS ELEMENT AND SYSTEM

Title (de)

VERFAHREN ZUR VERMEIDUNG VON RESONANZSCHÄDEN WÄHREND EINER REINIGUNG EINES ZUMINDEST TEILWEISE ADDITIV HERGESTELLTEN BAUTEILS, REINIGUNGSVORRICHTUNG, MASSELEMENT SOWIE SYSTEM

Title (fr)

MÉTHODE POUR ÉVITER UN ENDOMMAGEMENT PAR RÉSONANCE LORS DU NETTOYAGE D'UN COMPOSANT AU MOINS PARTIELLEMENT FABRIQUÉ DE MANIÈRE ADDITIVE, DISPOSITIF DE NETTOYAGE, ÉLÉMENT DE MASSE ET SYSTÈME

Publication

EP 4291388 A1 20231220 (DE)

Application

EP 22702862 A 20220127

Priority

- DE 102021201169 A 20210209
- DE 2022100070 W 20220127

Abstract (en)

[origin: WO2022171234A1] The invention relates to a method for cleaning powder residues of an additive layer build-up method away from an at least partly additively manufactured component (3) by means of a cleaning device (1), wherein a machine plate (2) and the component (3) arranged thereon are excited to mechanical oscillation during a cleaning process by a vibration actuator (4) of the cleaning device (1) with a set resonant frequency of the machine plate. According to the invention, before the cleaning process is carried out, a resonant frequency of the machine plate (2) is set to the set resonant frequency by an arrangement of a mass element (6) on a securing element of the machine plate (2), wherein the set resonant frequency is ascertained according to a predetermined selection method depending on at least one resonant frequency of the component (3), and the margin separating the set resonant frequency of the machine plate (2) from the at least one resonant frequency of the component (3) is greater than that separating the resonant frequency of the machine plate (2) without the arranged mass element (6), and at least one parameter of the mass element (6) is ascertained according to a predetermined ascertaining method depending on the set resonant frequency of the machine plate (2). The invention furthermore relates to a cleaning device (1) for cleaning an at least partly additively manufactured component (3).

IPC 8 full level

B29C 64/245 (2017.01); **B22F 10/68** (2021.01); **B29C 64/35** (2017.01); **B33Y 30/00** (2015.01); **B33Y 40/20** (2020.01)

CPC (source: EP US)

B08B 7/02 (2013.01 - EP); **B22F 10/68** (2021.01 - EP US); **B29C 64/245** (2017.08 - EP); **B29C 64/35** (2017.08 - EP US); **B33Y 30/00** (2014.12 - EP); **B33Y 40/20** (2020.01 - EP US); **B33Y 50/02** (2014.12 - US); **B22F 2999/00** (2013.01 - EP); **B29L 2031/7504** (2013.01 - US); **Y02P 10/25** (2015.11 - EP)

C-Set (source: EP)

B22F 2999/00 + **B22F 10/68** + **B22F 2202/01**

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 102021201169 A1 20220811; EP 4291388 A1 20231220; US 2024091861 A1 20240321; WO 2022171234 A1 20220818

DOCDB simple family (application)

DE 102021201169 A 20210209; DE 2022100070 W 20220127; EP 22702862 A 20220127; US 202218276213 A 20220127