

(19)



(11)

EP 3 138 644 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
05.04.2017 Bulletin 2017/14

(43) Date of publication A2:
08.03.2017 Bulletin 2017/10

(21) Application number: **16184504.5**

(22) Date of filing: **17.08.2016**

(51) Int Cl.:

B22F 3/105 (2006.01)	B22F 3/15 (2006.01)
B22F 3/24 (2006.01)	B22F 5/00 (2006.01)
F01D 5/02 (2006.01)	F01D 5/12 (2006.01)
F01D 5/34 (2006.01)	F01D 5/08 (2006.01)
F01D 11/02 (2006.01)	F01D 25/12 (2006.01)
B22F 7/06 (2006.01)	B22F 7/08 (2006.01)

(84) Designated Contracting States:
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 States:
BA ME
Designated Validation States:
MA MD

(30) Priority: **03.09.2015 US 201514844456**

(71) Applicant: **General Electric Company
Schenectady, NY 12345 (US)**

(72) Inventors:

- **WILLETT, Fred Thomas
Schenectady, NY New York 12345 (US)**
- **ZHENG, Xiaoqing
Schenectady, NY New York 12345 (US)**

(74) Representative: **Foster, Christopher Michael
General Electric Technology GmbH
GE Corporate Intellectual Property
Brown Boveri Strasse 7
5400 Baden (CH)**

(54) ROTATING COMPONENT, METHOD OF FORMING A ROTATING COMPONENT AND APPARATUS FOR FORMING A ROTATING COMPONENT

(57) Provided are a method of forming a rotating component. The method for forming a rotating component includes providing a rotor (101) having an outer surface. A circumferential surface feature (131) is formed on the outer surface of the rotor (101). The forming includes applying metallic material to the outer surface of

the rotor (101) to build up the circumferential surface feature (131) on outer surface of the rotor (101) to define at least one cooling passageway (211). A rotating component having a circumferential surface feature (131), a turbine system and an apparatus for forming the rotating component are also disclosed.

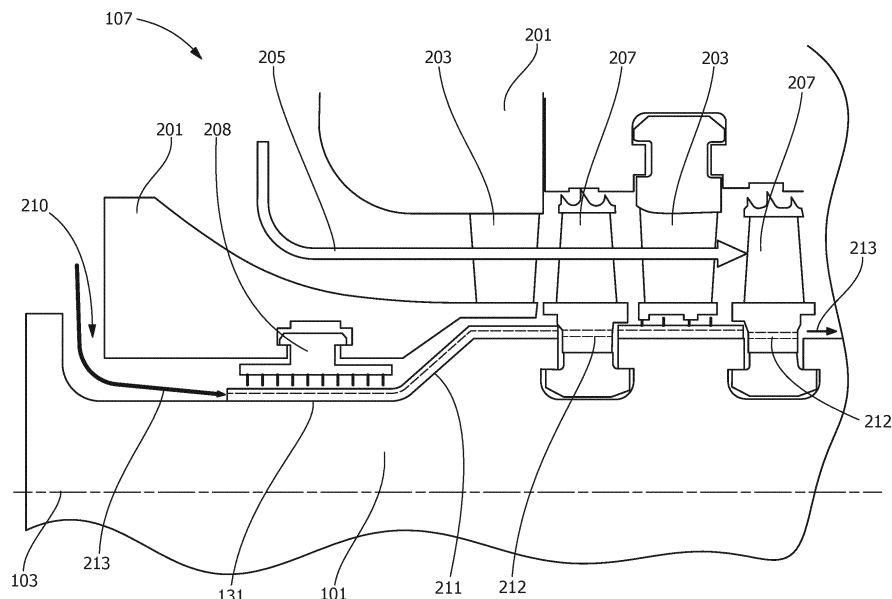


FIG. 2

EP 3 138 644 A3



EUROPEAN SEARCH REPORT

Application Number
EP 16 18 4504

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2011/052412 A1 (ADER CHRISTOPH [DE] ET AL) 3 March 2011 (2011-03-03) * paragraphs [0016], [0018], [0024] * -----	1-15	INV. B22F3/105 B22F3/15 B22F3/24
A	US 2011/078896 A1 (CALLA EKLAVYA [IN] ET AL) 7 April 2011 (2011-04-07) * the whole document * -----	1-15	B22F5/00 F01D5/02 F01D5/12 F01D5/34 F01D5/08 F01D11/02 F01D25/12 B22F7/06 B22F7/08
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B22F F01D B23K B23P
Place of search		Date of completion of the search	Examiner
The Hague		14 February 2017	Forestier, Gilles
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

1
EPO FORM 1503 03 82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 16 18 4504

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-02-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011052412 A1	03-03-2011	CA 2665069 A1	24-04-2008
		DE 102006049216 A1	24-04-2008
		EP 2089174 A1	19-08-2009
		EP 2218530 A1	18-08-2010
		US 2011052412 A1	03-03-2011
		WO 2008046388 A1	24-04-2008

US 2011078896 A1	07-04-2011	CH 701998 A2	15-04-2011
		DE 102010037690 A1	21-04-2011
		GB 2474345 A	13-04-2011
		JP 5791882 B2	07-10-2015
		JP 2011080463 A	21-04-2011
		US 2011078896 A1	07-04-2011
		US 2012272523 A1	01-11-2012
