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Published:

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(54) Title: TIP FABRICATION FOR ROTOR BLADE OR STATOR VANE AIRFOIL

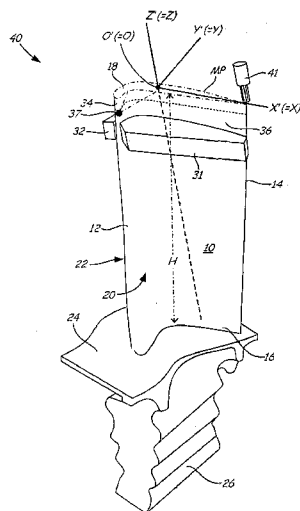


Fig. 4

(57) Abstract: A method comprises identifying an engine-run tip position for an airfoil having a tip section and a root section. The engine-run tip position is displaced and rotated with respect to « nominal position, as defined with respect to the root section before engine running. A airfoil tip is formed on the airfoil, and a machining datum is defined adjacent the airfoil tip. The tip section is translated and rotated to locate the airfoil tip in the nominal position, without respect to a location of the root section. The tip section is restored to a nominal profile by machining the airfoil tip along a machining path defined with respect to the machining datum, wherein the machining path is independent of the displacement and rotation of the engine-run tip position and independent of the position of the root section.



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## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/IB2013/001243****A. CLASSIFICATION OF SUBJECT MATTER****F01D 5/20(2006.01)i, F01D 5/12(2006.01)i, F02C 7/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

F01D 5/20; B23P 6/00; B21K 3/04; F01D 5/14; B23P 15/00; F01D 5/12; F02C 7/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; keywords: blade, airfoil, tip, repair, restore, and rotating

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5913555 A (RICHTER et al.) 22 June 1999 See column 3, line 52 - column 5, line 44, column 6, lines 7-14; claim 1; and figures 1-5.	1-6,11-14
A		7-10,15-21
Y	US 2008-0159869 A1 (RUEHR et al.) 3 July 2008 See paragraphs [0020]-[0023]; and figures 4,5.	1-6,11-14
A	US 2009-0246031 A1 (ROSE, WILLIAM M.) 1 October 2009 See paragraphs [0013]-[0015]; and figures 3,4.	1-21
A	US 2002-0162220 A1 (UPDEGROVE et al.) 7 November 2002 See paragraph [0008]; and figure 1.	1-21
A	US 2009-0313822 A1 (LEE et al.) 24 December 2009 See paragraph [0015]; claim 19; and figure 3.	1-21

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/IB2013/001243**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5913555 A	22/06/1999	EP 0837220 A2	22/04/1998
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