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- (71) Applicants: UNITED TECHNOLOGIES CORPORATION [US/US]; One Financial Plaza, Hartford, Connecticut 06101 (US). MTU AERO ENGINES AG [DE/DE]; Dachauer Str. 665, 80995 Muenchen (DE).
- (72) Inventors: TOPOL, David A.; 36 Lyman Road, West Hartford, Connecticut 06117 (US). MORIN, Bruce L.; 20 Biella St., Springfield, Massachusetts 01104 (US). KORTE, Detlef; Waldeckstrasse 4, 81543 Munich (DE).
- (74) Agent: OLDS, Theodore W.; Carlson, Gaskey & Olds/Pratt & Whitney, c/o CPA Global, P.O. Box 52050, Minneapolis, Minnesota 55402 (US).

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[Continued on next page]

(54) Title: GEARED TURBOFAN ENGINE LOW NOISE COMPRESSOR ROTOR

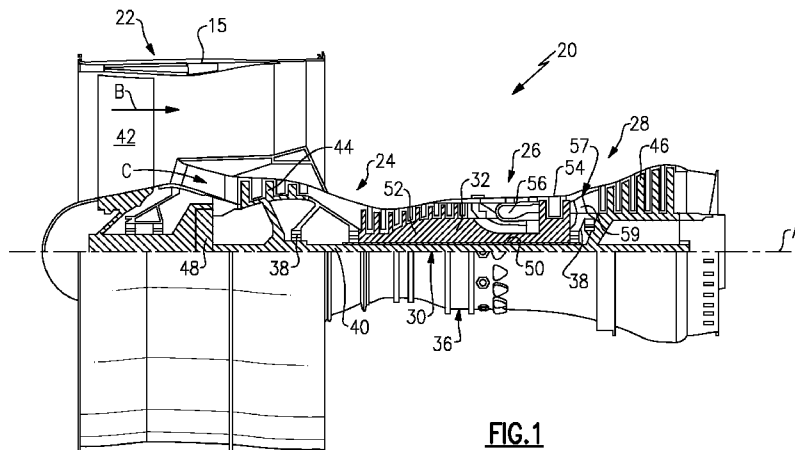


FIG. 1

(57) Abstract: A gear reduction effects a reduction in the speed of a fan relative to a speed of a low pressure turbine and a low pressure compressor portion. At least one of the low pressure turbine portion and low pressure compressor portion has a number of blades in each of a plurality of rows. The blades operate at least some of the time at a rotational speed. The number of blades and the rotational speed are such that the following formula holds true for at least one of the blade rows of the at least one of the low pressure turbine portion and/or the low pressure compressor sections: (number of blades x rotational speed)/60 ≥ 5500 Hz. The rotational speed is an approach speed in revolutions per minute.



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<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - F01D 1/02; F02C 7/262; F02K 3/02 (2014.01) USPC - 244/81; 415/119, 181 According to International Patent Classification (IPC) or to both national classification and IPC</p>																							
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8): F01D 1/02; F02C 7/262, 9/20; F02K 3/02 (2014.01) USPC: 60/226.3; 244/81; 415/119, 181, 198.1, 199.4; 416/28, 500</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) MicroPatent (US Granted, US Applications, EP-A, EP-B, WO, JP, DE-G, DE-A, DE-T, DE-U, GB-A, FR-A); Google; Google Scholar; ProQuest KEYWORDS: compressor, low, pressure, blade*, 5500, Hz, approach, speed, rotor*, certification, point, RPM, gas, turbine, 6000</p>																							
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>US 2010/0192595 A1 (ORLANDO, R. et al.) August 5, 2010; paragraphs [0014]-[0018]</td> <td>1-20</td> </tr> <tr> <td>Y</td> <td>US 2009/0191047 A1 (SCHLINKER, R. et al.) 30 July 2009; paragraphs [0022], [0055], [0057], [0060], [0065]</td> <td>1-20</td> </tr> <tr> <td>A</td> <td>US 2009/0260345 A1 (CHAUDHRY, Z.) October 22, 2009; figure 1A; [0016]-[0019]</td> <td>1</td> </tr> <tr> <td>A</td> <td>US 2,957,655 A1 (KNAPP, G., et al.) October 25, 1960; column 1, lines 15-20, 35-40, column 8, lines 1-5, 15-25.</td> <td>1</td> </tr> <tr> <td>A</td> <td>WO 2000/19082 A2 (LAWLOR, S.) April 6, 2000; entire document</td> <td>1</td> </tr> <tr> <td>A</td> <td>US 2,850,226 A1 (LUNDQUIST, W.) September 2, 1958; entire document</td> <td>1</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2010/0192595 A1 (ORLANDO, R. et al.) August 5, 2010; paragraphs [0014]-[0018]	1-20	Y	US 2009/0191047 A1 (SCHLINKER, R. et al.) 30 July 2009; paragraphs [0022], [0055], [0057], [0060], [0065]	1-20	A	US 2009/0260345 A1 (CHAUDHRY, Z.) October 22, 2009; figure 1A; [0016]-[0019]	1	A	US 2,957,655 A1 (KNAPP, G., et al.) October 25, 1960; column 1, lines 15-20, 35-40, column 8, lines 1-5, 15-25.	1	A	WO 2000/19082 A2 (LAWLOR, S.) April 6, 2000; entire document	1	A	US 2,850,226 A1 (LUNDQUIST, W.) September 2, 1958; entire document	1
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<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer:</p> <p>Shane Thomas</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>																					