(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 December 2013 (27.12.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/192027 A3

(51) International Patent Classification:
F02B 37/18 (2006.01) *F02B 37/00* (2006.01)

(21) International Application Number:
PCT/US2013/045775

(22) International Filing Date:
14 June 2013 (14.06.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
102012012495.3 21 June 2012 (21.06.2012) DE

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: EXHAUST-GAS TURBOCHARGER

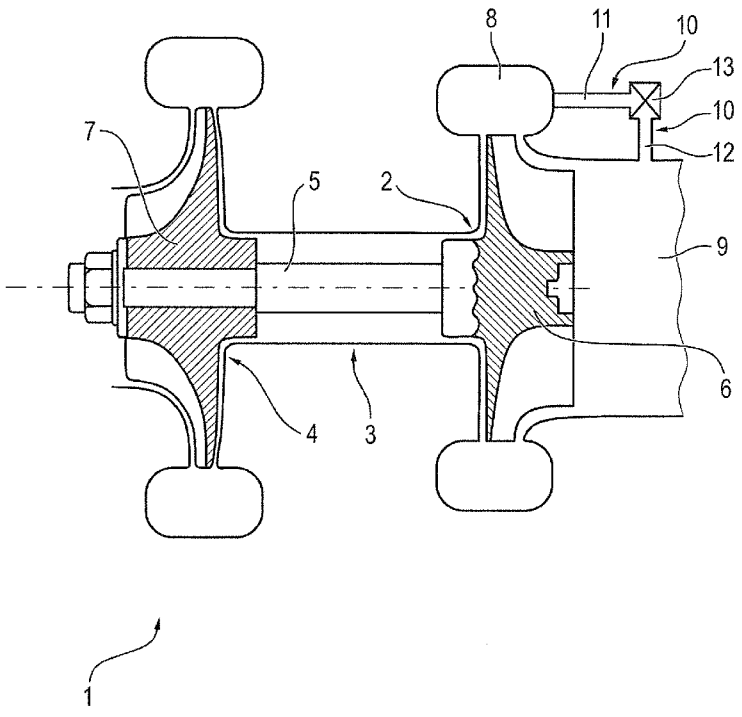


FIG. 1

(57) Abstract: The invention relates to an exhaust-gas turbo charger (1) comprising a turbine housing (2) which has a turbine housing inlet (8) and a turbine housing outlet (9), and which has a wastegate duct (10) between the turbine housing inlet (8) and the turbine housing outlet (9), and a shut-off element (13) for opening and closing the wastegate duct (10), wherein the shut-off element (13) comprises a sleeve (14), which is inserted into the turbine housing (2), and a piston (22), which is guided in the sleeve (14) so as to be movable along a longitudinal axis (L), wherein the sleeve (14) has apertures (15, 16) at which the wastegate duct (5) opens out into the interior of the sleeve (14).

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Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
27 February 2014

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/045775

A. CLASSIFICATION OF SUBJECT MATTER

F02B 37/18(2006.01)i, F02B 37/00(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)
F02B 37/18; F02B 37/12; F02M 21/02; F01D 17/12; F02B 33/00; F02B 37/00; F01D 17/08; F02D 23/00

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) & Keywords: turbocharger, turbine housing, wastegate, bypass, actuator, exhaust gas, piston and control

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2011-0049153 A (HYUNDAI MOTOR COMPANY et al.) 12 May 2011 See abstract; paragraphs [0010]-[0014]; figures 1,4,5.	1,5,6,8-10
Y		2-4,7
Y	US 4,499,731 A (MOSER, PETER) 19 February 1985 See abstract; column 2, lines 35-60, column 3, lines 19-28,34-42; figures 1-3,7-9.	2-4,7
A	US 5,855,117 A (SUMSER et al.) 05 January 1999 See abstract; column 3, lines 31-55; figures 1-3.	1-10
A	US 4,802,817 A (TYLER, THOMAS R.) 07 February 1989 See abstract; column 2, lines 52-68, column 3, lines 1-3,13-38; figure 1.	1-10
A	US 2002-0078934 A1 (HOHKITA et al.) 27 June 2002 See abstract; paragraphs [0041],[0042]; figures 1-10.	1-10

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

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Date of the actual completion of the international search	Date of mailing of the international search report
13 December 2013 (13.12.2013)	**13 December 2013 (13.12.2013)**

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2013/045775

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