



## **Topic 6: Retrieving and utilizing external examination results - Sources for retrieval**

Lutz Mailänder  
Head, Patent Information Section  
Global IP Infrastructure Sector

**Bangkok**  
**21-23 November 2012**  
**Hanoi**  
**26-28 November 2012**

# Agenda

- Public resources for retrieval (EPO, USPTO, WIPO, DPMA)
- Issues

# Selected online resources

- European Patent Register (EP)
  - <https://register.epo.org/espacenet/regviewer>
- Common Citation Document (Pilot)
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  - <http://www.wipo.int/patentscope/search/en/search.jsf>
- Public Pair (US)
  - <http://portal.uspto.gov/external/portal/pair>
- AIPN (JP)
  - <http://aipn.ipdl.inpit.go.jp/>
- K-PION (KR)
  - <http://kposd.kipo.go.kr:8088/up/kpion/>
- DPMAregister (DE)
  - <http://register.dpma.de/DPMAregister/Uebersicht?lang=en>

# Online resources

- European Patent Register (EP)
  - EP applications: enriched SR, ER, examination status, file wrapper)
- Common Citation Document (Pilot)
  - SRs for EP, JP, US, WO,.....
- Patentscope
  - WO applications: enriched SR, ER, file wrapper
- Public Pair (US)
  - US applications: file wrapper with SR, ER, examination status
- AIPN (JP)
  - See topic 6 presented by JPO
- K-PION (KR)
  - See topic 6 presented by JPO
- DPMAregister (DE)
  - DE applications: SR, examination status (file wrapper from Q3/2013)

# USPTO - PAIR

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**11/093,685**      **FIBER OPTIC TRANSCEIVER MODULE HAVING BUILT-IN TEST CAPABILITY AND ASSOCIATED METHOD**      038190/281944

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**Bibliographic Data**

Application Number:	11/093,685	Customer Number:	-
Filing or 371 (c) Date:	03-30-2005	Status:	Patented Case
Application Type:	Utility	Status Date:	02-20-2008
Examiner Name:	WONG, TINA MEI SENG	Location:	ELECTRONIC
Group Art Unit:	2874	Location Date:	-
Confirmation Number:	9505	Earliest Publication No:	US 2006-0228078 A1
Attorney Docket Number:	038190/281944	Earliest Publication Date:	10-12-2006
Class / Subclass:	385/089	Patent Number:	7,341,384
First Named Inventor:	Eric Y. Chan , Mercer Island, WA (US)	Issue Date of Patent:	03-11-2008

**Title of Invention:**      FIBER OPTIC TRANSCEIVER MODULE HAVING BUILT-IN TEST CAPABILITY AND ASSOCIATED METHOD

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04-28-2006	CTNF	<a href="#">Non-Final Rejection</a>	PROSECUTION	10	<input type="checkbox"/>
04-28-2006	1449	<a href="#">List of References cited by applicant and considered by examiner</a>	PRIOR ART	1	<input type="checkbox"/>
04-28-2006	892	<a href="#">List of references cited by examiner</a>	PRIOR ART	1	<input type="checkbox"/>
04-28-2006	FWCLM	<a href="#">Index of Claims</a>	PROSECUTION	1	<input type="checkbox"/>

<b>Notice of References Cited</b>	Application/Control No. 11/093,685	Applicant(s)/Patent Under Reexamination CHAN ET AL.	
	Examiner Tina M. Wong	Art Unit 2874	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,081,638	06-2000	Zhou, Ping	385/31
*	B	US-6,842,467	01-2005	Aronson et al.	372/27
*	C	US-5,179,420	01-1993	So et al.	356/73.1
	D	US-			
	E	US-			

# German Patent Office DPMAregister

- Access to examination status and search reports of applications processed by German patent office: no file wrapper yet

The screenshot shows the DPMAregister website interface. At the top, there is a navigation bar with links for 'DPMAregister-Startseite', 'English', 'Impressum/Datenschutzerklärung', and 'Hilfe'. Below this is a main menu with categories like 'Patente und Gebrauchsmuster', 'Marken', 'Geschmacksmuster', 'Geografische Herkunftsangaben', 'Service', and 'DPMAkurier'. A sub-menu includes 'Patentblatt', 'Einsteiger', 'Monitoring', 'Experte', and 'PIZ-Unterstützung'. The breadcrumb trail reads: 'Sie sind hier: > Startseite > Patente und Gebrauchsmuster > Einsteigerrecherche'.

### Einsteigerrecherche

Für weitere Informationen nutzen Sie die [Hilfe](#) zur Einsteigerrecherche.  
Informationen zur Internationalen Patentklassifikation (IPC) finden Sie unter: [IPC](#)

**Recherche formulieren**

Schutzrechtsart:  Patente  Gebrauchsmuster  Schutzzertifikat  Topografie [?](#)

Aktenzeichen/Veröffentlichungsnummer:  [?](#) z.B. 102008005373.2

Bezeichnung/Titel:  [?](#) z.B. Mikroprozessor

Anmelder/Inhaber/Erfinder:  [?](#) z.B. Schmidt GmbH

Publikationstag:  [?](#) z.B. 06.10.2010

IPC-Haupt-/Nebeklasse:  [?](#) z.B. F17D 5/00

Nur in Kraft befindliche Schutzrechte anzeigen:  [?](#)

**Trefferliste konfigurieren**

Aktenzeichen  Schutzrechtsart  Status

Bezeichnung  IPC-Hauptklasse  IPC-Nebeklasse(n)

Anmeldetag  Erstveröffentlichungstag  Eintragungstag

Anmelder/Inhaber  Erfinder  Vertreter

Trefferlisten sortierung nach

Treffer/Seite  Maximale Trefferzahl



# German Patent Office DPMAregister

## Treffer 1/1, Registerauskunft

Aktenzeichen DE: 10 2005 050 747.6

Schutzrechtsart: Patent

Status: anhängig/in Kraft

Stand am: 16. November 2011

[Zurück zur Einsteigerrecherche](#) [Zurück zur Trefferliste](#)

### Stammdaten [Details schließen](#)

INID	Kriterium	Feld	Inhalt
	Schutzrechtsart	SART	Patent
	Status	ST	Anhängig/in Kraft
21	Aktenzeichen DE	DAKZ	10 2005 050 747.6
54	Bezeichnung/Titel	TI	Multiplex-Sender für Polymerfaserübertragung und Verfahren zu dessen Herstellung
51	IPC-Hauptklasse	ICM (ICMV)	H04J 14/02 (2006.01)
22	Anmeldetag DE	DAT	22.10.2005
43	Offenlegungstag	OT	26.04.2007
71/73	Anmelder/Inhaber	INH	ESA Patentverwertungsagentur Sachsen-Anhalt GmbH, 39114 Magdeburg, DE; Hochschule Harz (FH), 38855 Wernigerode, DE
72	Erfinder	IN	Ulrich, Prof. Dr. Fischer-Hirchert, 38640 Goslar, DE
74	Vertreter	VTR	Sperling, Fischer & Heyner Patentanwälte, 39108 Magdeburg, DE
10	Veröffentlichte DE-Dokumente	DEPN	<a href="#">DE102005050747A1</a>
	Zustellanschrift		Sperling, Fischer & Heyner Patentanwälte, 39108 Magdeburg, DE
	Fälligkeit	FT FG	31.10.2011 Jahresgebühr für das 7. Jahr
	Zuständige Patentabteilung		55
57	Zusammenfassung	AB	Die Erfindung betrifft einen Multiplex-Sender für Polymerfaserübertragung und ein Verfahren zu dessen Herstellung. \$A Erfindungsgemäß besitzt der Multiplex-Sender einen Grundkörper mit Aussparungen, in denen Wellenleiter der Eingangskanäle sowie Wellenleiter des oder der Ausgangskanäle angeordnet sind, wobei sowohl der Grundkörper mit Aussparungen als auch die Wellenleiter Spritzgussteile sind. \$A Im Verfahren zur Herstellung eines Multiplex-Senders für Polymerfaserübertragung werden in einem ersten Verfahrensschritt der Grundkörper mit den Aussparungen als Spritzgussteil hergestellt, während in einem zweiten Verfahrensschritt die Wellenleiter ebenfalls durch Spritzguss in Aussparungen des Grundkörpers eingebracht werden.
56	Entgegenhaltungen	CT	<a href="#">DE000019716838A1</a> <a href="#">DE000010323032A1</a> <a href="#">DE000069030437T2</a> <a href="#">US000006356692B1</a> <a href="#">US020050175347A1</a> <a href="#">US020050069013A1</a>
	Anzahl der Bescheide		2

Search → Results → EP1864167 (A2)

EP 1864167 (A2)
<b>Bibliographic data</b>
Description
Claims
Mosaics
Original document
INPADOC legal status

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## Bibliographic data: EP 1864167 (A2)

Link to European Patent Register

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### FIBER OPTIC TRANSCEIVER MODULE HAVING BUILT-IN TEST CAPABILITY AND ASSOCIATED METHOD

**Page bookmark** [EP 1864167 \(A2\) - FIBER OPTIC TRANSCEIVER MODULE HAVING BUILT-IN TEST CAPABILITY AND ASSOCIATED METHOD](#)

**Publication date:** 2007-12-12

**Inventor(s):** CHAN ERIC Y [US]; KOSHINZ DENNIS G [US] ±

**Applicant(s):** BOEING CO [US] ±

**Classification:**  
- **international:** [G01M11/00](#); [G02B6/42](#)  
- **European:** [G01M11/00B2A](#); [G02B6/42C3R](#); [G02B6/42C6](#)

**Application number:** [EP20060748697](#) 20060324

**Priority number(s):** [WO2006US10973](#) 20060324; [US20050093685](#) 20050330

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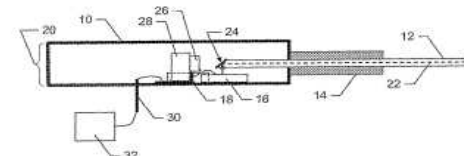
**Also published as:**  
[WO 2006104953 \(A2\)](#)  
[WO 2006104953 \(A3\)](#)  
[US 2006228078 \(A1\)](#)  
[US 7341384 \(B2\)](#)

PDF-documents of publications

**Cited documents:** [US6205274 \(B1\)](#) → [US4021121 \(A\)](#) → [View all](#)

**Abstract not available for EP 1864167 (A2)**  
**Abstract of corresponding document: WO 2006104953 (A2)**  
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A fiber optic transceiver module, having built-in test capability and a low physical profile that meets mil spec requirements, comprises a housing. The housing comprises an optical fiber having an angled end that defines an acute angle relative to the longitudinal axis of the optical fiber, an optical source for emitting an optical signal which is reflected by the angled end of the optical fiber and propagated along the optical fiber, and an optical detector for receiving a return optical signal transmitted through the angled end of the optical fiber in response to reflection from a discontinuity in the optical fiber. The acute angle may be 48 degrees, causing a desired portion of the signal emitted from the optical source to be propagated along the optical fiber and to cause a desired portion of the return optical signal to be transmitted through the angled end to a photodetector.



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<b>Publication date</b>	i	e.g. 20070919
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<b>Priority number</b>	i	e.g. US20030423700
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<b>Applicant(s)</b>	i	e.g. IBM
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<b>Inventor(s)</b>	i	e.g. Siemens
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<b>Opponent</b>	i	e.g. basf
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<b>Status</b>	Examination is in progress <i>Database last updated on 14.11.2011</i>
<b>Most recent event</b>	24.06.2011      Change: Appeal number
<b>Applicant(s)</b>	For all designated states The Boeing Company 100 North Riverside Plaza Chicago, IL 60606 / US  [N/P]
<b>Inventor(s)</b>	01 / Chan, Eric Y. 7555 80th Place S.E. Mercer Island, WA 98040-5909 / US  02 / Koshinz, Dennis G. 100 110th Ave NE B204 Bellevue, WA 98004-3607 / US  [2007/50]
<b>Representative(s)</b>	Land, Addick Adrianus Gosling , et al Arnold & Siedsma Sweelinckplein 1 2517 GK Den Haag / NL  [2008/34]
<b>Application number, filing date</b>	06748697.7      24.03.2006  [2007/50]  WO2006US10973
<b>Priority number, date</b>	US20050093685      30.03.2005      Original published format: US 93685  [2007/50]
<b>Filing language</b>	EN
<b>Procedural language</b>	EN
<b>Publication</b>	<b>Type :</b> A2 Application without search report  <b>No. :</b> <b>EP1864167</b>

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Advocaten en Octrooigemachtigden,  
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PAYS-BAS

**Formalities Officer**  
Name: SANCHEZ BARRIO, S  
Tel: +49 89 2399 - 2292  
or call  
+31 (0)70 340 45 00  
**Substantive Examiner**  
Name: Wolf, Steffen  
Tel: +49 89 2399 - 7029



Application No. 06 748 697.7 - 2216	Ref. H2FA75/AK1066	Date 14.02.2008
Applicant The Boeing Company		

## Communication pursuant to Article 94(3) EPC

The examination of the above-identified application has revealed that it does not meet the requirements of the European Patent Convention for the reasons enclosed herewith. If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(2) EPC.

You are invited to file your observations and insofar as the deficiencies are such as to be rectifiable, to correct the indicated deficiencies within a period

**of 4 months**

from the notification of this communication, this period being computed in accordance with Rules 126(2) and 131(2) and (4) EPC.

One set of amendments to the description, claims and drawings is to be filed within the said period on separate sheets (R. 50(1) EPC).

**Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Art. 94(4) EPC).**



Wolf, Steffen  
Primary Examiner  
for the Examining Division

# Patentscope: PCT file inspection

(WO/2006/026494) SYSTEM AND METHOD FOR PRODUCING WATER

http://www.wipo.int/pctdb/en/fetch.jsp?SEARCH\_IA=US2005030529&DBSELECT=PCT&AB

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**(WO/2006/026494) SYSTEM AND METHOD FOR PRODUCING WATER**

Biblio. Data Description Claims National Phase Notice **Documents**

**International Application Status**

Date	Title		
24.05.2010	International Application Status Report	view	download

**Published International Application**

Date	Title		
09.03.2006	Initial Publication with ISR (A1 10/2006)	view	download
09.03.2006	Declaration	view	download

**Related Documents on file at the International Bureau ([more information](#))**

Date	Title		
28.02.2007	Written Opinion of the International Search Authority	view	download
28.02.2007	International Preliminary Report on Patentability Chapter II (IPEA/409)	view	download
09.03.2006	US 60/642,597 10.01.2005 (Pr. Doc.)	view	download
09.03.2006	US 60/606,326 31.08.2004 (Pr. Doc.)	view	download
09.03.2006	US 60/619,264 15.10.2004 (Pr. Doc.)	view	download

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- CCD builds on the EPO's family system and has been developed and is hosted by the EPO.
- CCD permits viewing of cited patent documents
- No examination reports included
- Various display options



# Common Citation Document (CCD)

<http://www.trilateral.net/ccd>

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**CCD View**

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#	CC	Cat.	Citation details	Claims
1	EP		<b>Application N° EP04425475</b> (EP20040425475) - 30 June 2004 National Search Report	
X	DE	4310984 A1	(REXROTH MANNESMANN GMBH [DE]) - 6 October 1994 Column 4, line 31 - column 5, line 54 Figure 1	1-5,13 6
Y	WO	011227 A1	(SIEMENS AG [DE], et al) - 15 February 2001 Page 7, line 9 - page 9, line 3 Figure 1 Claim 17	6 1
A	EP	0740068 A2	(LUCAS IND PLC [GB]) - 30 October 1996 Column 4, line 27 - column 5, line 13 Figure 2	1
A	US	6257499 B1	(STURMAN ODED E) - 10 July 2001 Column 4, line 49 - column 5, line 23 Figure 4	1
2	AT		<b>Application N° AT05425384</b> (AT20050425384T) - 27 May 2005	
3	AT		<b>Application N° AT05425383</b> (AT20050425383T) - 27 May 2005	
4	DE		<b>Application N° DE602004004254</b> (DE200460004254T) - 30 June 2004	
5	DE		<b>Application N° DE602005000662</b> (DE200560000662T) - 27 May 2005	
6	DE		<b>Application N° DE602005003175</b> (DE200560003175T) - 27 May 2005	
7	EP		<b>Application N° EP05425384</b> (EP20050425384) - 27 May 2005 National Search Report	

Simple families: 5 Total family members: 23

**Inspector: biblio for EP20040425475**

**Bibliographic data: EP 1612403 (A1)**

**Servo valve for controlling an internal combustion engine fuel injector**

**Publication date:** 4 January 2006

**Inventor(s):** RICCO MARIO [IT]; DE MATTHAEIS SISTO LUIGI [IT]; GORGOLIONE ADRIANO [IT]; DI MEO ALFONSO [IT]

**Applicant(s):** FIAT RICERCHE [IT]

**Classifications:** International: F02M59/46; F02M47/02  
European: F02M47/02D; F02M63/00E2B; F02M63/00E4C; F02M63/00E4D

**Application number:** EP20040425475 20040630

**Priority number(s):** EP20040425475 20040630

**Abstract of EP 1612403 (A1)**

A control servo valve (8) is housed inside the casing of a combustion engine fuel injector (1), and has an actuator (9) between a closed and open position to close and open the outlet passage (22), and a shutter (35) movable along an axis (3) between a closed position and an open position to close and open the outlet passage (22) respectively. The servo valve (8) also has a fixed axial rod (29) interposed between the actuator (9) and the control chamber (13). The outlet passage (22) comes out through an outer lateral surface (30) of the axial rod (29) and the shutter (35) is defined by a sleeve which slides axially on the outer lateral surface (30), and, in the closed position, closes the outlet passage (22) so as to be subjected to a zero axial resultant force by the pressure of the fuel.

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**CCD View**

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#	CC	Cat.	Citation details	Claims
7	EP		<b>Application N° EP05425384</b> (EP20050425384) - 27 May 2005	
8	ES		<b>Application N° ES04425475</b> (ES20040425475T) - 30 June 2004	
9	ES		<b>Application N° ES05425384</b> (ES20050425384T) - 27 May 2005	
10	JP		<b>Application N° JP2005192051</b> (JP20050192051) - 30 June 2005	
11	JP		<b>Application N° JP2005118446</b> (JP20050118446) - 15 April 2005	
12	US		<b>Application N° US11112772</b> (US20050112772) - 21 April 2005	
13	US		<b>Application N° US11741474</b> (US20070741474) - 27 April 2007	
14	US		<b>Application N° US11171659</b> (US20050171659) - 30 June 2005	
15	EP		<b>Application N° EP05425383</b> (EP20050425383) - 27 May 2005	
16	JP		<b>Application N° JP2005191978</b> (JP20050191978) - 30 June 2005	
17	US		<b>Application N° US11171658</b> (US20050171658) - 30 June 2005	
18	AT		<b>Application N° AT06114551</b> (AT20060114551T) - 25 May 2006	
19	CN		<b>Application N° CNA2006101639681</b> (CN20061163968) - 24 November 2006	
20	KR		<b>Application N° KR1020060117230</b> (KR20060117230) - 24 November 2006	
21	EP		<b>Application N° EP06114551</b> (EP20060114551) - 25 May 2006	
22	JP		<b>Application N° JP2006147852</b> (JP20060147852) - 29 May 2006	
23	US		<b>Application N° US11441643</b> (US200601441643) - 26 May 2006	

Simple families: 5 Total family members: 23

**Inspector: biblio for EP20040425475**

**Bibliographic data: EP 1612403 (A1)**

**Servo valve for controlling an internal combustion engine fuel injector**

**Abstract of EP 1612403 (A1)**

A control servo valve (8) is housed inside the casing of an internal combustion engine fuel injector (1), and has an actuator (9), a control chamber (13) communicating with a fuel inlet (5) and with a fuel outlet passage (22), and a shutter (35) movable along an axis (3) by the actuator (9) between a closed position and an open position to close and open the outlet passage (22) respectively. The servo valve (8) also has a fixed axial rod (29) interposed between the actuator (9) and the control chamber (13). The outlet passage (22) comes out through an outer lateral surface (30) of the axial rod (29) and the shutter (35) is defined by a sleeve which slides axially on the outer lateral surface (30), and, in the closed position, closes the outlet passage (22) so as to be subjected to a zero axial resultant force by the pressure of the fuel.

**Bibliographic data: EP 1612403 (B1)**

# Common Citation Document (CCD)

Trilateral - CCD

Number:

EP20030746705
EP20060123454

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**CCD Viewer**

#	CC	Cat.	Citation details	Claims
1	EP		<b>Application N° EP20060123454</b> (EP06123454) - 3 November 2006	
National Search Report				
X	US	2003035726 A1	(TIEMANN PETER, , et al) - 20 February 2003 Page 4, paragraph 44 - page 4, paragraph 45 Figure 4	1-9
X	EP	0541207 A1	(GEN ELECTRIC [US]) - 12 May 1993 Column 5, line 33 - column 5, line 37 Figure 2, 3	1-9
A	US	5695321 A	(GEN ELECTRIC [US]) - 9 December 1997 Column 6, line 28 - column 6, line 32 Figure 4 - 6	2
A			<b><i>Impingement cooling in a rotating curved square annular duct with crossflow effect from rib-roughened surfaces</i></b> <b>Authors:</b> SHOU-SHING HSIEH, JUNG-TAI HUANG, HUANG-HSIU TSAI <b>Publication data:</b> INSPEC Abstract	8,9
2	CA		<b>Application N° CA20062567126</b> (CA002567126) - 3 November 2006	
3	FR		<b>Application N° FR20050053357</b> (FR0553357) - 7 November	

Simple families: 1      Total family members: 6

**Inspector: classifications and fields searched**

**Classifications**

**EP**

IPC **F01D5/18**  
EC F01D9/04B, F01D5/18G2C, F01D9/06C

**CA**

IPC **F01D5/18, F01D25/12**  
EC F01D9/04B, F01D5/18G2C, F01D9/06C

**FR**

IPC **F01D5/18**  
EC F01D9/04B, F01D5/18G2C, F01D9/06C

**JP**

IPC **F01D9/02, F01D1/18**  
FI F01D1/18, F01D9/02&102  
FTERM 3G002/CA03, 3G002/CA06, 3G002/CA07, 3G002/CB01, 3G002/CB04, 3G002/CB05, 3G002/GA08, 3G002/GB01, 3G202/CA03, 3G202/CA06, 3G202/CA07, 3G202/CB01, 3G202/CB04, 3G202/CB05, 3G202/GA08, 3G202/GB01

EC F01D9/04B, F01D5/18G2C, F01D9/06C

**RU**

IPC **F01D5/18**  
EC F01D9/04B, F01D5/18G2C, F01D9/06C

Number: EP1612402

Search

examples: EP1612402, US2006000447A1, JP20090214944

EP20040425480

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Original document

Enriched Citations for EPO

#	CC	Cat.	Citation details	Claims
1	EP		Application N° EP20040425480 (EP04425480) - 22 April 2004 National Search Report	
	X		DE10345154 A1 (DENSO CORP [JP]) - 22 April 2004 Page 3, paragraph 19 Figure 1	1-3
	X		US4501246 A (BOSCH GMBH ROBERT [DE]) - 26 February 1985 Column 2, line 22 - column 2, line 23 Figure 1	1-5
	X		EP0270720 A1 (RENAULT [FR]) - 15 June 1988 Page 5, line 12 - page 6, line 5 Figure 1, 6	1,4-8
	A		EP0299337 A2 (IVECO FIAT [IT], et al) - 18 January 1989 Figure 1	1-8
	A		DE19714489 C1 (SIEMENS AG [DE]) - 1 October 1998 Figure 1	1-8
2	AT		Application N° AT20040425480T (AT04425480) - 30 June 2004	
3	DE		Application N° DE200460002105T (DE602004002105) - 30 June 2004	
4	ES		Application N° ES20040425480T (ES04425480) - 30 June 2004	
5	JP		Application N° JP20050120087 (JP2005120087) - 18 April 2005	
6	JP		Application N° JP20090214944 (JP2009214944) - 16 September 2009 National Examination	
			JP2004011448 A (NIPPON SOKEN, et al) - 15 January 2004	
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Full document: US 4501246 (A)

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### Leblanc

[54] FUEL INJECTION PUMP 4,398,518 8/1983 Leblanc et al  
4,398,519 8/1983 Tissot et al.

[75] Inventor: Jean Leblanc, Lyons, France

[73] Assignee: Robert Bosch GmbH, Stuttgart, Fed. Rep. of Germany FOREIGN PATENT DOCUMENTS  
53-80803 7/1978 Japan .....

[21] Appl. No.: 397,712 Primary Examiner—William L. Fr

[22] Filed: Jul. 13, 1982 Assistant Examiner—Paul F. Neils  
Attorney, Agent, or Firm—Edwin I

[30] Foreign Application Priority Data  
Jul. 22, 1981 [DE] Fed. Rep. of Germany ..... 3128975

[51] Int. Cl.<sup>3</sup> ..... F02M 39/00

[52] U.S. Cl. .... 123/449; 123/458;  
417/487; 417/519

[58] Field of Search ..... 417/487, 519, 221, 244,  
417/253, 462, 505; 123/449, 450, 458, 502, 500,  
506

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ABSTRACT  
A fuel injection pump is proposed metering during the intake stroke of the fuel injection pump is effected in the cross section of which is electrically controlled switching means of the control of a fuel supply pressure conduit by means of a communicating with the pump which part of a distributor shaft, is guided rpm. By means of the oblique displacement and the possibility of an longitudinal displacement of the angular position at which injection is embodied in an arbitrary manner in switching valve.

5 Claims, 2 Drawing

Simple family of citation

1/5 - ABSTRACT  
2/5 - DRAWINGS  
3/5  
4/5 - DESCRIPTION  
5/5 - CLAIMS  
1/5 - ABSTRACT

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EP20040425480
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US20050095425		US6889656 B1 (BOSCH GMBH ROBERT [DE]) - 10 May 2005	
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US20050095425		EP0299337 A2 (IVECO FIAT [IT], et al) - 18 January 1989	

**Hochdruck-kraftstoffpumpe für einen verbrennungsmotor**

**Publication date:** 22 April 2004

**Inventor(s):** WATANABE TOSHIKAZU [JP]

**Applicant(s):** DENSO CORP [JP]

**Classifications:**

**International:** F02M59/44; F02M59/06; F02M59/08; F02M59/20; F02M59/46

**European:** F02M59/08; F02M59/20B; F02M59/46B

**Application number:** DE20031045154 20030929

**Priority number(s):** JP20020286361 20020930

**Abstract of DE 10345154 (A1)**

Ein Auslassventil 13 hat eine Kegelsitzfläche 14, die in einem Auslasskanal 12 ausgebildet ist, eine Ventilkugel 15, welche den Auslasskanal 12 schliesst, wenn sie auf einen Sitzabschnitt der Sitzfläche 14 aufliegt und eine Feder 16 zum Drängen der Ventilkugel 15 in eine Ventilschliessrichtung. Der Auslasskanal 12 ist mit einer zweiten Kegelfläche 17 stromaufwärts von dem Sitzabschnitt ausgebildet. Die zweite Kegelfläche hat einen Kegelwinkel, der kleiner als der der Sitzfläche 14 ist. Wenn Kraftstoff, der von einer Kraftstoffkammer 8 abgeführt wird, in die Sitzfläche 14 strömt, wird eine Strömungsrichtung des Kraftstoffs nicht abrupt geändert, sondern kontinuierlich verändert. Deshalb ist ein Strömungszustand des Kraftstoffs stromaufwärts von dem Sitzabschnitt verbessert. Folglich kann die Erzeugung von ungleichmässiger Strömung um die Ventilkugel 15 verhindert werden und die Erzeugung von unnormalem Geräusch kann verhindert werden.

Shows for each citation in which search report it is cited, taking into account equivalents

Number: EP1612402

EP20040425480

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#	CC	Cat.	Citation details	Claims
1	EP		Application N° EP20040425480 (EP040425480) - 30 June 2004 National Search Report	
X	DE	A1	DE10345154 A1 (DENSO CORP [JP]) - 22 April 2004 Page 3, paragraph 19 Figure 1	1-3
X	US	A	US4501246 A (BOSCH GMBH ROBERT [DE]) - 26 February 1985 Column 2, line 22 - column 2, line 23 Figure 1	1-5
X	EP	A1	EP0270720 A1 (RENAULT [FR]) - 15 June 1988 Page 5, line 12 - page 6, line 5 Figure 1, 6	1,4-8
A	EP	A2	EP0299337 A2 (IVECO FIAT [IT], et al) - 18 January 1989 Figure 1	1-8
A	DE	C1	DE19714489 C1 (SIEMENS AG [DE]) - 1 October 1998 Figure 1	1-8
2	AT		Application N° AT20040425480T (AT04425480) - 30 June 2004	
3	DE		Application N° DE200460002105T (DE602004002105) - 30 June 2004	
4	ES		Application N° ES20040425480T (ES04425480) - 30 June 2004	
5	JP		Application N° JP20050120087 (JP2005120087) - 18 April 2005	
6	JP		Application N° JP20090214944 (JP2009214944) - 16 September 2009 National Examination	

Application EP20040425480

Biblio Description Claims Original document

Full document: EP 1612402 A1

5 EP 1 612 402

defined in the annexed claims. For example, it is possible to eliminate the motion-transmission device 26 and actuate the shaft 23 of the high-pressure pump 7 at a rate independent of the speed of the engine shaft 4. Also the solenoid valve 15 for draining the fuel from the accumulator 6 can be eliminated.

[0025] Furthermore, the two pumping elements 18 can be arranged in parallel and actuated in phase opposition by two different cams. Finally, the pump 7 can have a different number of pumping elements, for example three pumping elements actuated by a common cam with a phase offset of 120°.

Claims

1. A high-pressure variable-flow-rate pump for a fuel-injection system of an internal-combustion engine, comprising at least one pumping element (18), which is actuated in reciprocating motion through suction and delivery strokes and is provided with an intake valve (25) in communication with an intake pipe (10), and a delivery valve (30) in communication with a delivery pipe (8); said pump (7) being characterized in that its flow rate is regulated by a regulation device (27) for regulating the fuel supplied to said pumping element (18), said regulation device (27) being arranged on said intake pipe (10) and being designed to be actuated during the suction strokes of said pumping element (18).
2. The high-pressure pump according to Claim 1, in which said intake valves (25) are in communication with a common intake pipe (10), said pump being

20.99 x 29.70 cm

US4501246.A (EP20040425480) [also published as]

Biblio Description Claims Original document

Full document: US 4501246 (A)

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shaft and variable opening times of the switching valve 16, it is possible for an arbitrary fuel quantity to come to the point of injection within an arbitrary range of the possible supply stroke of the pump pistons 3. With an appropriately embodied control device, arbitrary injection times and injection durations can be attained in accordance with temperature, load, rpm and other engine parameters.

The foregoing relates to a preferred exemplary embodiment of the invention, it being understood that other embodiments and variants thereof are possible within the spirit and scope of the invention, the latter being defined by the appended claims.

What is claimed and desired to be secured by Letters Patent of the United States is:

1. A fuel injection pump having at least one pump work chamber enclosed in a cylinder by at least one pump piston, which is actuated by cam means in synchronism and constant relation to drive means of said injection pump, said pump work chamber being in continuous communication with a distributor opening in an axially displaceable distributor shaft which is rotated by said drive means in synchronism therewith within a cylinder and is capable of being connected thereby with one of a series of supply lines distributed over the circumference of said cylinder which lead from said cylinder to a fuel injection point, said point being effected in sequence during the supply stroke of said pump piston, further wherein said pump work chamber is in continuous communication with a control groove in a jacket face of said distributor shaft, with control groove arranged to cooperate with a fuel inlet opening which discharges into said cylinder and wherein the rotary and axial position of a part of said control groove that coacts with said fuel inlet opening relative to said drive means is variable by an axial displacement of said distributor shaft characterized in that said fuel inlet opening is

20.99 x 29.70 cm

Number: WO1999EP02462

Search

examples: EP1612402, US2006000447A1, JP20090214944

EP20040425480

WO1999EP02462

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Classifications & fields searched

#	CC	Cat.	Citation details	Claims
1	WO		<p><b>Application N° WO1999EP02462</b> (WOEP9902462) - 13 April 1999</p> <p>National Search Report</p> <p>A JP57046917 A (FUJISAWA PHARMACEUTICAL CO) - 17 March 1982</p> <p>A EP0256785 A2 (FUJISAWA PHARMACEUTICAL CO [JP]) - 24 February 1988</p> <p>A US4693742 A (ROHM &amp; HAAS [US]) - 15 September 1987</p> <p>A US4330529 A (FUJISAWA PHARMACEUTICAL CO) - 18 May 1982</p> <p>A US4268503 A (FUJISAWA PHARMACEUTICAL CO) - 19 May 1981</p> <p>A EP0009686 A1 (FUJISAWA PHARMACEUTICAL CO [JP]) - 16 April 1980</p> <p>A US4206156 A (FUJISAWA PHARMACEUTICAL CO [JP]) - 3 June 1980</p> <p>A DE2733658 A1 (FUJISAWA PHARMACEUTICAL CO) - 9 February 1978</p> <p>A <i>Fosfomycin and fosmidomycin</i>                      Author: GREENWOOD D                      Publication data: ANTIBIOTICS AND CHEMOTHERAPY, 19970101 ANTIBIOTICS AND CHEMOTHERAPY, NORTHFIELD, IL, US                      Source info: Page(s): 357 - 359</p> <p>A <i>In Vitro and In Vivo Antibacterial Activity of FR-31564, a Phosphonic Acid Antimicrobial Agent</i>                      Authors: NEU H C, ET AL                      Publication data: Antimicrobial Agents and Chemotherapy, 19810601 AMERICAN SOCIETY FOR MICROBIOLOGY, WASHINGTON, DC, US                      Source info: Vol: 19, Nr: 6, Page(s): 1013 - 1023</p> <p>A <i>Antimicrobial Agents</i>                      Author: NEU H C, ET AL                      Publication data: Antimicrobial Agents and Chemotherapy, 19821001 AMERICAN SOCIETY FOR MICROBIOLOGY, WASHINGTON, DC, US</p> <p>A <i>Antimicrobial Activity of FR-31564, a Phosphonic Acid Antimicrobial Agent, Against Urinary Tract Pathogens</i>                      Author: NEU H C, ET AL                      Publication data: Antimicrobial Agents and Chemotherapy, 19821001 AMERICAN SOCIETY FOR MICROBIOLOGY, WASHINGTON, DC, US                      Source info: Vol: 18, Nr: SUPPL. 02, Page(s): S60 - S64</p>	
2	AT		<p><b>Application N° AT19990919226T</b> (AT99919226) - 13 April 1999</p>	

Inspector: classifications and fields searched

Classifications

WO

IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

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IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

AU

IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

BR

IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

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IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

CN

IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

EP

IPC A61K31/662, A01N57/00, A61K31/00, A61K31/66, A61K31/661, A61P31/00, A61P31/04, A61P31/12, A61P33/02, A61P33/06

EC A61K31/66, A61K31/662

Estimated number of simple families

Simple families: ≈24

Total family members: ≈136

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Number: WO1999EP02462

Search

examples: EP1612402, US2006000447A1, JP20090214944

EP20040425480

WO1999EP02462

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#	CC	Cat.	Citation details	Claims
1	WO		Application N° WO1999EP02462 (WOEP9902462) - 13 April 1999	
2	AT		Application N° AT19990919226T (AT99919226) - 13 April 1999	
3	AU		Application N° AU19990041208 (AU4120899) - 13 April 1999	
4	AU		Application N° AU19990041208D (AU4120899) - 13 April 1999	
5	BR		Application N° BR19990009668 (BR9909668-4) - 13 April 1999	
6	CA		Application N° CA19992328159 (CA002328159) - 13 April 1999	
7	CN		Application N° CN19998005115 (CN99805115) - 13 April 1999	
8	EP		Application N° EP19990919226 (EP99919226) - 13 April 1999	
9	HU		Application N° HU20010001716 (HU01 01716) - 13 April 1999	
10	JP	A		
11	MX	A		
12	OA	A		
13	PL	A		
14	SK		Application N° SK1522-2000 (SK1522-2000) - 13 April 1999	
15	TR		Application N° TR2000/02965T (TR2000/02965) - 13 April 1999	
16	US		Application N° US20000673	
17	US		Application N° US20030676	
18	US		Application N° US20111315	
19	AU		Application N° AU19990051580D (AU5158099) - 9 July 1999	
20	AU		Application N° AU19990051580D (AU5158099) - 9 July 1999	
21	BR		Application N° BR19990012062 (BR9912062-3) - 9 July 1999	
22	CA		Application N° CA19992336143 (CA002336143) - 9 July 1999	

“+” separator between simple families

Actual number of simple families

Simple families: 19

Total family members: 122

Application BR19990009669

Biblio Description Claims Original document

Bibliographic data: BR 9909669 (A)

Processo para identificação de ingredientes químicos ativos e de ingredientes ativos para inibição da via de biossíntese de 1-desóxi-d-xilulose-5-fosfato

Publication date: 19 December 2000

Inventor(s): HASSAN JOMAA

Applicant(s): JOMAA HASSAN [DE]

Classifications: International: C07K14/00

Application number: BR19990009669 19990413

Priority number(s): DE19981016196 19980414

DE19981025585 19980609

DE19981028097 19980624

DE19981031637 19980715

WO1999EP02463 19990413

Abstract of BR 9909669 (A)

Patente de Invenção  
 "PROCESSO PARA IDENTIFICAÇÃO DE INGREDIENTES QUÍMICOS ATIVOS E DE INGREDIENTES ATIVOS PARA INIBIÇÃO DA VIA DE BIOSÍNTESE DE 1-DESÓXI-D-XILULOSE-5-FOSFATO". A invenção refere-se a um processo para a obtenção de ingredientes químicos ativos que são adequados para o tratamento de doenças infecciosas causadas por parasitas unicelulares ou multicelulares. Com este processo as proteínas que estão envolvidas na via metabólica do 1-desóxi-D-xilulose-5-fosfato ou derivados das mesmas que atuam similarmente são colocados em contato com os ingredientes ativos que terão sua atividade investigada em relação aos parasitas, e os ingredientes ativos que inibem as proteínas ou seu derivados são selecionados. A invenção também refere-se aos ingredientes ativos descobertos para a produção de composições farmacêuticas contra as infecções parasiticas.

Thank you