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61/982,673	22 April 2014 (22.04.2014)	US
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62/016,907	25 June 2014 (25.06.2014)	US
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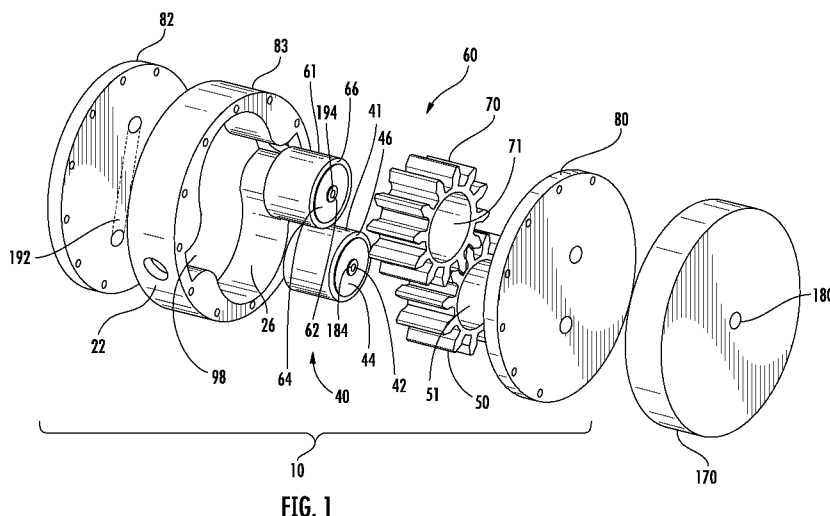
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, 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.

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- (88) Date of publication of the international search report:  
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(54) Title: FLUID DELIVERY SYSTEM WITH A SHAFT HAVING A THROUGH-PASSAGE



(57) Abstract: A fluid delivery system having at least one fluid storage device and a pump with at least one fluid driver with a flow-through shaft that has a through-passage. The pump includes a casing, and at least one fluid driver having a prime mover and at least one fluid displacement member. A shaft of the prime mover and/or a shaft of the fluid displacement member and/or a common shaft of the prime mover/fluid displacement member (depending on the configuration of the pump) is a flow-through shaft with a through-passage configuration that allows fluid communication between at least one port of the pump and the at least one fluid storage device.



**INTERNATIONAL SEARCH REPORT**

International application No PCT/US2015/027003
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**A. CLASSIFICATION OF SUBJECT MATTER**  
 INV. F04C2/18 F04C15/00  
 ADD.

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)  
 F04C

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 918 209 A (OTTO SCHUELLER) 22 December 1959 (1959-12-22)	1,10,11, 13, 21-24, 44, 53-73,86
Y	column 1 - column 4, line 2; figures 1-3	2-9,12, 14-20
Y	----- US 5 271 719 A (ABE YOSHIKAZU [JP] ET AL) 21 December 1993 (1993-12-21)	12,14-20
A	the whole document	1-11,13, 21-24, 61-73,86
X	----- US 3 585 973 A (KLOVER JOHN J) 22 June 1971 (1971-06-22)	44-52, 58-60
Y	column 46, line 59 - column 47, line 32; figure 38	2-9
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Further documents are listed in the continuation of Box C.       See patent family annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"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
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  27 October 2015	Date of mailing of the international search report  04/11/2015
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Alquezar Getan, M
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## INTERNATIONAL SEARCH REPORT

International application No

PCT/US2015/027003

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/006902 A1 (GREYSTONE TECHNOLOGIES PTY LTD [AU]; WHEELER DARYL [AU]; ERWIN JUSTIN) 17 January 2013 (2013-01-17) page 13, line 34 - page 18, line 24; figures 1-3	44-52, 58-60
X	----- US 2011/250082 A1 (HAN JEONGMIN [KR] ET AL) 13 October 2011 (2011-10-13) paragraphs [0022], [0032]; figure 1	44,45
X	----- US 1 418 741 A (STALLMAN GRANVILLE H) 6 June 1922 (1922-06-06) the whole document	44,53-60
A	----- US 2 940 661 A (ALBERT LORENZ) 14 June 1960 (1960-06-14) the whole document	1-24, 44-73,86
A	----- DE 10 2011 005831 A1 (BOSCH GMBH ROBERT [DE]) 27 September 2012 (2012-09-27) the whole document	1-24, 44-73,86
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2015/027003

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:  
  
1-24, 44-73, 86
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-24, 61-73, 86

Relating to a pump and its corresponding operating method, wherein the potential special technical feature is that the pump comprises a first and a second motor. The technical effect can be considered to provide pump with two motors, thereby synchronising the rotors without the need of timing gears.

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2. claims: 25-43, 74-85, 87

Relating to a pump and its corresponding method, wherein the potential special technical feature is that the pump comprises a single motor which drives a first gear, the second gear being driven by the first gear. The technical effect can be considered to provide a pump with a more cost efficient driving means.

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3. claims: 44-60

Relating to a fluid delivery system wherein the potential special technical feature is that it comprises a shaft having an axial-through passage. The technical effect can be considered to provide a fluid delivery system with a reduced number of piping and hoses.

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4. claims: 88, 89

Relating to a fluid driver, wherein the potential special technical feature ist that it comprises an inner stator and an outer rotor comprising gears. The technical effect can be considered to provide a compact fluid driver.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/027003

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
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