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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 October 2012 (26.10.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/145287 A3

(51) International Patent Classification:
F04D 13/08 (2006.01) *F04D 1/06* (2006.01)
F04D 29/24 (2006.01)

(21) International Application Number:
PCT/US2012/033887

(22) International Filing Date:
17 April 2012 (17.04.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/089,942 19 April 2011 (19.04.2011) US

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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, 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,

[Continued on next page]

(54) Title: SUBMERSIBLE CENTRIFUGAL PUMP FOR SOLIDS-LADEN FLUID

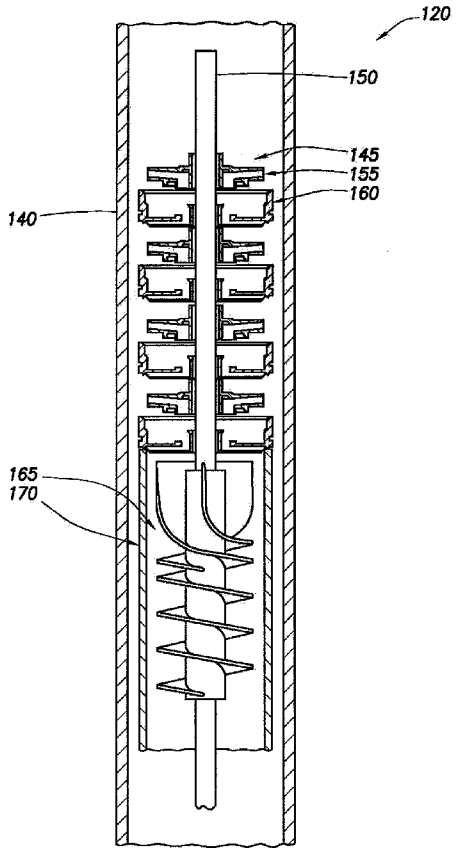


FIG.2

(57) Abstract: A submersible centrifugal pump is disclosed. The submersible centrifugal pump includes a pump housing having a pump intake disposed generally opposite a pump outlet. A shaft extends at least partially through the pump housing and is adapted to be driven by a submersible motor. A centrifugal impeller is attached to the shaft and has an opening for fluid intake. A diffuser is disposed corresponding to the centrifugal impeller to form a pump stage. And an auger is coupled to the shaft.

WO 2012/145287 A3

HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, 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, 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, MD, 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, ML, MR, NE, SN, TD, TG).

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 December 2012

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/033887

A. CLASSIFICATION OF SUBJECT MATTER

F04D 13/08(2006.01)i, F04D 29/24(2006.01)i, F04D 1/06(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)

F04D 13/08; F04B 23/08; E21B 43/00; F03B 1/04; F01D 1/02; E21B 43/38; B01D 19/00

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: pump, impeller, diffuser, auger

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6406277 B1 (SHAFER; TERRY W. et al.) 18 June 2002 See abstract; column 2, line 17-43; column 2, line 64 - column 3, line 1; figures 1,2A,2B.	1-18
A	US 05482117 A (KOLPAK; MIROSLAV et al.) 09 January 1996 See abstract; column 4, line 46 - column 5, line 3; figure 2.	1-18
A	US 7461692 B1 (WANG CHENGBAO) 09 December 2008 See abstract; column 2, line 36-57; column 3, line 26-39; column 4, line 1-22 ; figures 1,2,4,5.	1-18
A	US 2010-0319926 A1 (REID LESLIE C.) 23 December 2010 See abstract; paragraphs [0029]-[0030]; figures 1,4,5.	1-18

☐ 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
22 OCTOBER 2012 (22.10.2012)	**23 OCTOBER 2012 (23.10.2012)**

Name and mailing address of the ISA/KR

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Facsimile No. 82-42-472-7140

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/033887

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6406277 B1	18.06.2002	CA 2238276 C	30.08.2005
		CA 2363620 A1	22.05.2002
		CA 2363620 C	21.02.2006
		US 6190141 B1	20.02.2001
US 05482117 A	09.01.1996	None	
US 7461692 B1	09.12.2008	None	
US 2010-0319926 A1	23.12.2010	None	