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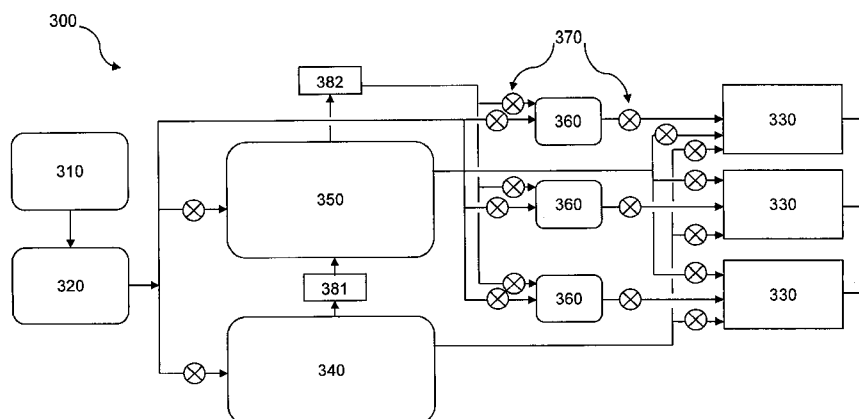


FIG. 3

(57) Abstract: The present disclosure is directed to a compressed fuel dispensing station having a compressor configured to compress a fuel source, a plurality of fuel dispensing units, at least one low pressure compressed fuel reservoir fluidly connected to the fuel compressor and the plurality of fuel dispensing units, and a plurality of high pressure compressed fuel reservoirs, wherein each high pressure compressed fuel reservoir is fluidly connected to the fuel compressor and at least one fuel dispensing unit.

INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. F17C5/06

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)

F17C

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)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/118575 A1 (BOYD ROBERT W [US] ET AL BOYD ROBERT WALTER [US] ET AL) 8 June 2006 (2006-06-08)	1-9, 11-15
Y	figure 7 paragraphs [0020], [0022] - [0025], [0027] - [0028], [0039]	10
X	US 2007/034283 A1 (PLUMMER DARRILL L [US] ET AL PLUMMER DARRILL LEE [US] ET AL) 15 February 2007 (2007-02-15)	1-7,9, 11-13
Y	figure 1 paragraphs [0019], [0021] - [0022], [0033] - [0036], [0039]	10
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Further documents are listed in the continuation of Box C.



See patent family annex.

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009/250138 A1 (BAVARIAN FARSHAD ALEXANDER [US] ET AL) 8 October 2009 (2009-10-08)	1,3-7,9, 11-13
Y	figure 2 paragraphs [0011], [0021] - [0022], [0024], [0027] - [0029] -----	10
X	US 2009/151809 A1 (BALASUBRAMANIAN BHASKAR [US] ET AL) 18 June 2009 (2009-06-18)	1,2,11, 12
Y	paragraphs [0011], [0016], [0018], [0023] - [0026] -----	10
X	EP 1 777 454 A1 (AIR PROD & CHEM [US]) 25 April 2007 (2007-04-25)	1
Y	paragraphs [0023] - [0024], [0028] -----	10
X	WO 2012/123349 A1 (SHELL INT RESEARCH [NL]; GUPTA NIKUNJ [US]) 20 September 2012 (2012-09-20) page 13, lines 16-33 page 15, lines 9-10 -----	1,2,11, 12

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006118575 A1	08-06-2006	NONE	
US 2007034283 A1	15-02-2007	NONE	
US 2009250138 A1	08-10-2009	US 2009250138 A1	08-10-2009
		US 2011247724 A1	13-10-2011
US 2009151809 A1	18-06-2009	NONE	
EP 1777454 A1	25-04-2007	AT 393896 T	15-05-2008
		CA 2561988 A1	10-04-2007
		DE 602006001045 T2	02-07-2009
		EP 1777454 A1	25-04-2007
		US 2007079891 A1	12-04-2007
WO 2012123349 A1	20-09-2012	EP 2683977 A1	15-01-2014
		JP 2014508261 A	03-04-2014
		US 2014110017 A1	24-04-2014
		WO 2012123349 A1	20-09-2012