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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ISOLATION VALVE FOR ENERGETIC AND HIGH TEMPERATURE GASSES

(57) Abstract: An improved fluid flow control valve (15a) that allows for conduction of a substantial portion of thermal energy therethrough includes a first portion (60), a second portion, (62) and a moveable element (64). The first portion includes an aperture (66) for fluid communication with a fluid source. The second portion includes a second aperture, (68) which is at least partially aligned with the first aperture (66). The moveable element, which is disposed between and spaced from the first and second portions to allow conduction of at least a substantial portion of thermal energy from the first portion to the second portion. The moveable element includes an aperture (70) that at least partially aligns with the first and second apertures when the moveable element is in an open position and that misaligns with at least one of the first and second apertures when the moveable element is in a closed position.



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INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER

INV. F16K5/04 F16K51/00 F16K11/085 C23C16/452 C23C16/455

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)

F16K C23C

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1 695 014 A (HEGGEM ALFRED G) 11 December 1928 (1928-12-11) column 2, line 76 - column 4, line 77; figures	1-59
X	US 3 971 402 A (GALLO ET AL) 27 July 1976 (1976-07-27) column 1, line 36 - column 2, line 63; figures	1-6, 21-26, 40-59
A	US 2004/163720 A1 (JOUNG TAE-YEOL) 26 August 2004 (2004-08-26) paragraph [0021] - paragraph [0033]; figures -/--	1-59

☒ 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

"E" earlier document but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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.

"&" document member of the same patent family

Date of the actual completion of the international search

5 September 2006

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No

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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.
A	US 3 276 466 A (HERBERT JOHN T) 4 October 1966 (1966-10-04) column 2, line 20 - column 4, line 55; figures -----	1-59

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/017700

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:
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.:

1-59

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ 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: 1-59

A fluid flow control valve

2. claims: 60-68

An apparatus for delivering dissociated gas

3. claims: 69-89

A system for controlling a process.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/017700

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 1695014	A	11-12-1928	NONE	
US 3971402	A	27-07-1976	NONE	
US 2004163720	A1	26-08-2004	NONE	
US 3276466	A	04-10-1966	NONE	