Abstract: A valve regulating the flow of a gas between a high-pressure zone (42) and a low pressure zone (43) includes a hollow body (20) having a first chamber (28) and a second chamber (27). A nozzle (30) within the body (20) separates the chambers (27, 28) and defines a gas passage between the chambers (27, 28). A valve stem (21) is movable axially within the passage and comprises a distal portion (22) extending at least partially into the first chamber (28) and a proximate portion (23) within the second chamber (27). An o-ring seat (24) contacts with the nozzle (30) to close the passage against the passage of gas. The proximate portion (23) includes a threaded barrel (31) cooperating with an externally threaded operating stem (17) and guide pin (35) to reciprocate the stem (21) open and close the valve.
Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— of inventorship (Rule 4.17(iv)) for US only

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

Date of publication of the international search report: 12 May 2005

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.
**INTERNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**

<table>
<thead>
<tr>
<th>IPC(7)</th>
<th>US CL</th>
<th>According to International Patent Classification (IPC) or to both national classification and IPC</th>
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<tr>
<td>F16K 31/50, 47/08</td>
<td>251/121, 266, 274, 276, 282, 357, 900</td>
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**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 251/121, 265, 266, 267, 274, 276, 282, 357, 368, 900; 137/614.2

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<tr>
<td>Y</td>
<td>US 3,918,484 A (LAMB) 11 November 1975 (11.11.1975), see fig. 2 and col. 2, line 63 through col. 3, line 8.</td>
<td>13, 49</td>
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<td>Y</td>
<td>US 1,510,528 A (SEBENSTE) 07 October 1924 (07.10.1924), see fig. 1 and page 1, line 100 through page 2, line 35.</td>
<td>14, 25-27, 29, 52, 53</td>
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<td>Y</td>
<td>US 5,392,825 A (MIMS et al) 28 February 1995 (28.02.1995), see fig. 7 and col. 8, lines 45-68.</td>
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<td>Y</td>
<td>US 3,951,381 A (WHITENER) 20 April 1976 (20.04.1976), see fig. 7 col. 5, line 33 through col. 6, line 20.</td>
<td>48</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search: 09 December 2004 (09.12.2004)

Date of mailing of the international search report: 28 FEB 2005

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