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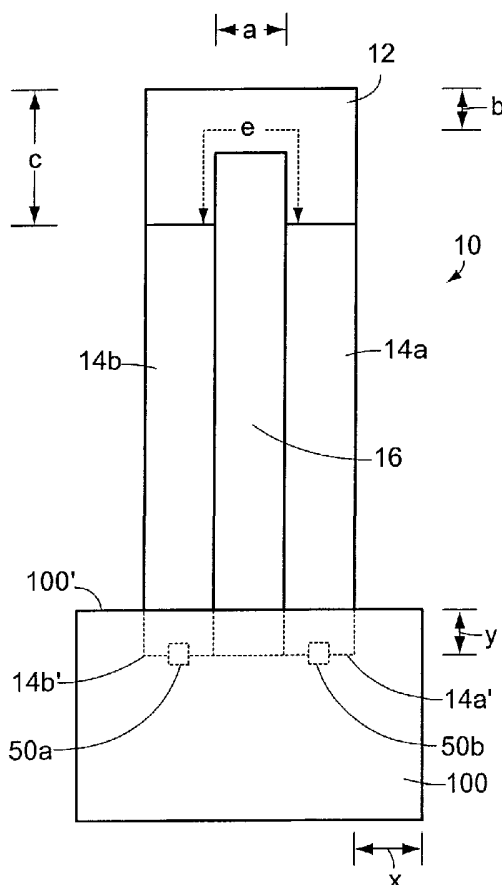
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60/313,113 18 August 2001 (18.08.2001) US
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[Continued on next page]

(54) Title: CERAMIC IGNITERS WITH SEALED ELECTRICAL CONTACT PORTION



(57) Abstract: Robust ceramic igniters include an improved sealing system which can significantly enhance operational life of the igniter. Preferred igniters comprise a conductive cold zone (14a, 14b) and hot zone (12) with higher resistivity. A hermetic sealant material (100) covers one or more electrical connections on each cold zone thereby avoiding igniter failure resulting from electrical shorts and/or undesired oxidation.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/26067

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F23Q 13/00

US CL : 219/270, 541; 361/264

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)

U.S. : 219/270, 260, 541, 552, 553; 361/264-266; 123/145A, 145R

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)
Derwent WPI, Japio

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, RE. 29,853 A (PERL) 28 November 1978 (28.11.1978), Figs. 2, 4.	1, 34
Y	JP 7-55146 A (INGERSOLL RAND CO.) 03 March 1995 (03.03.1995), Abstract, Fig. 2.	2, 3, 19-22, 35, 36
Y	US 5,564,618 A (AXELSON) 15 October 1996 (15.10.1996), Fig. 1.	2, 3, 19-22, 35, 36
A	JP 2-75189 A (NGK SPARK PLUG CO. LTD.) 14 March 1990 (14.03.1990), Abstract, Fig. 1, 3.	1-49
A	US 4,260,872 A (BRODMANN et al) 07 April 1981 (07.04.1981), Fig. 1.	1-49

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

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"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

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document member of the same patent family

Date of the actual completion of the international search

16 October 2002 (16.10.2002)

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/26067

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

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

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claim 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. ☒ Claim Nos.: 4-18,23-33 and 37-49
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

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

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.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.