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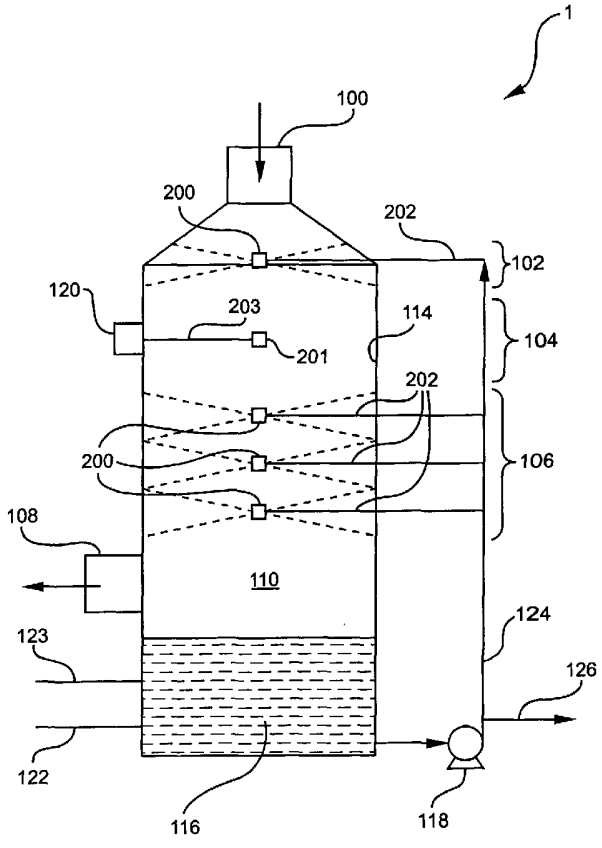
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[Continued on next page]

(54) Title: WET SCRUBBING APPARATUS AND METHOD FOR CONTROLLING NOx EMISSIONS



(57) Abstract: An apparatus (1) for controlling NOx emissions which includes a chamber having a wall surface (114) and an interior (110), a flue gas entrance (100) and a flue gas exit (108) for a flue gas to enter and exit the interior of the chamber, a gas quenching zone (102) in which the temperature of the gas can be lowered, an ozone injection and retention zone (104) in the chamber, and a liquid spray zone (106) including at least one spray nozzle (200) for spraying a liquid towards the wall surface.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/31101

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : C01B 21/00; B01D 50/00
US CL : 423/210, 235, 239.1, 390.1; 422/170, 172, 176
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. : 423/210, 235, 239.1, 390.1; 422/170, 172, 176

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)
APS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,316,737 A (Skelley et al) 31 May 1994 (31.05.1994), Entire Document	1-52
X --- Y	US 4,351,810 A (Martinez et al.) 28 Sept 1982 (28.09.1982), Entire Document	1-4, 6-17, 19-44, 46-52 --- 5, 18, 45
Y	US 5,316,737 A (Skelley et al) 31 May 1994 (31.05.1994), Entire Document	5, 18, 45

☐ 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

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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

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

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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.:
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.