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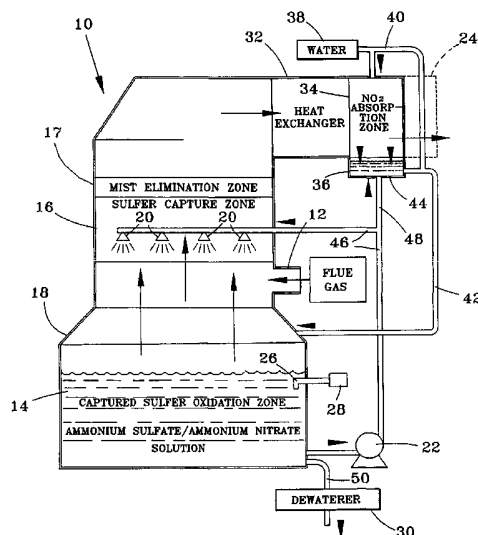
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(54) Title: FLUE GAS DESULFURIZATION PROCESS AND APPARATUS FOR REMOVING NITROGEN OXIDES



(57) Abstract: An apparatus (10) and process for removing acidic gases and NO_x from flue gases produced by utility and industrial plants. The process and apparatus (10) convert NO_x, and particularly nitric oxide, to nitrogen dioxide, which is then reacted to form a valuable byproduct. The process generally entails contacting a flue gas with a scrubbing medium (14) to absorb acidic gases from flue gas and produce an intermediate flue gas. The intermediate flue gas is then cooled to cause nitric oxide present therein to be oxidized to form nitrogen dioxide, which is then absorbed from the flue gases to produce a nitrogen dioxide-containing solution (36) and a scrubbed flue gas. The nitrogen dioxide in the nitrogen dioxide-containing solution (36) is then reacted with ammonium hydroxide to form ammonium nitrate as a valuable byproduct.

INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01D53/14 B01D53/56 C01C1/18

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)

IPC 7 B01D C01C

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)

WPI Data, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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A document defining the general state of the art which is not considered to be of particular relevance

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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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Date of the actual completion of the international search

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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.
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