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[Continued on next page]

(54) Title: SYSTEM AND PROCESS FOR GAS SWEETENING

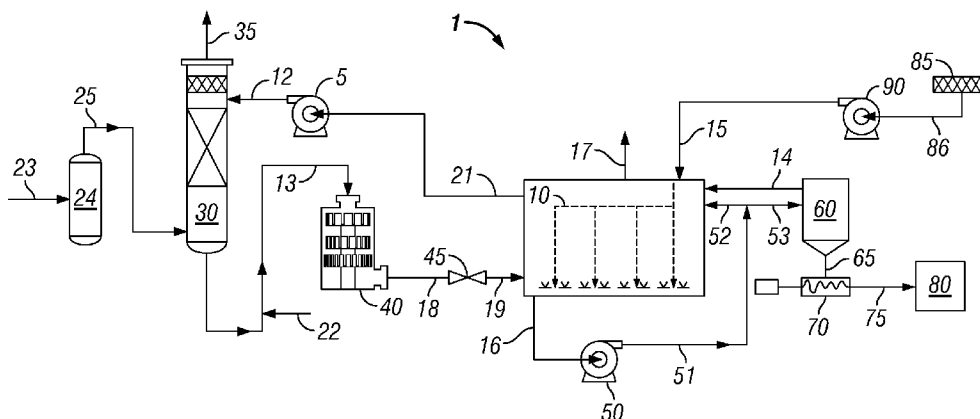


FIG. 1

(57) Abstract: A method for removing hydrogen sulfide from a sour gas stream comprising hydrogen sulfide by oxidizing hydrogen sulfide in a converter by contacting the sour gas stream with an aqueous catalytic solution, thereby producing a desulfurized gas stream and a liquid stream comprising reduced catalyst and elemental sulfur, introducing an oxidant and the liquid stream comprising reduced catalyst and elemental sulfur into a high shear device and producing a dispersion wherein the mean bubble diameter of the oxidant gas in the dispersion is less than about 5 microns, introducing the dispersion into a vessel from which a sulfur-containing slurry is removed and a regenerated catalyst stream is removed, wherein the sulfur slurry comprises elemental sulfur and aqueous liquid, and recycling at least a portion of the regenerated catalyst stream to the converter. A system of apparatus for carrying out the method is also provided.

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**A. CLASSIFICATION OF SUBJECT MATTER*****B01D 53/52(2006.01)i, B01D 53/14(2006.01)i, C01B 17/04(2006.01)i***

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 8: B01D, C01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean Utility models and applications for Utility Models since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
eKIPASS(KIPO internal) "hydrogen sulfide", "desulfurize", "shear", "bubble", "dispersion" and similar terms**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4649032 A (SNAVELY, Jr. et al.) 10 March 1987 see column 7, line 16 to column 8, line 46 and column 11, line 52 to column 13, line 21.	3-10
A		1-2, 11-20
Y	US 6368366 B1 (LANGER et al.) 9 April 2002 see column 9, line 18 to column 10, line 3.	3-10
A	US 5500135 A (SMITH et al.) 19 March 1996 see abstract and fig1.	1-20
A	US 5126118 A (HARDISON) 30 June 1992 see abstract and fig1.	1-20
A	US 4508537 A (FENTON et al.) 2 April 1985 see column 3, line 59 to column 5, line 33.	1-20
A	US 5989513 A (RAI) 23 November 1999 see abstract.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"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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