



US005433925A

United States Patent [19]

[11] Patent Number: **5,433,925**

McCord et al.

[45] Date of Patent: **Jul. 18, 1995**

[54] **METHOD AND APPARATUS FOR REMOVING SULFUR DIOXIDE FROM GAS STREAMS**

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[73] Assignee: **Freeport-McMoRan Inc., New Orleans, La.**

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[21] Appl. No.: **291,041**

[22] Filed: **Aug. 15, 1994**

Related U.S. Application Data

[60] Continuation-in-part of Ser. No. 74,471, Jun. 11, 1993, abandoned, which is a continuation of Ser. No. 808,772, Dec. 17, 1991, abandoned, which is a division of Ser. No. 705,654, May 24, 1991, Pat. No. 5,106,603.

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[51] Int. Cl.⁶ **B01D 53/18**

[57] ABSTRACT

[52] U.S. Cl. **422/168; 261/119.1; 261/126; 366/102; 366/245; 366/292; 366/295; 422/176**

A process and apparatus for removing SO₂ from low-volume gas streams containing high concentrations of SO₂ includes a tank scrubber containing an aqueous SO₂ absorbent and an impeller. The tank scrubber has an unpartitioned vessel. The impeller includes a vertical rotating shaft having an upper and lower impeller. The lower impeller serves to agitate the SO₂ absorbent. The upper impeller includes a shroud thereby directing the absorbent and gas outwardly toward the wall of the scrubber. The gas is injected into the absorbent at a point below the shrouded impeller. The shroud prevents gas bypass and thereby promotes gas-liquid mixing and, consequently, markedly improves SO₂ removal efficiency.

[58] Field of Search 422/168, 176, 225, 231; 261/119.1, 126; 366/102, 245, 292, 295

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13 Claims, 1 Drawing Sheet

