

United States Patent [19]
Chamberlain

[11] **Patent Number:** **4,675,107**
 [45] **Date of Patent:** **Jun. 23, 1987**

[54] **TILTING PAN FILTERS**

[75] **Inventor:** **Donald L. Chamberlain, Baton Rouge, La.**

[73] **Assignee:** **Freeport Minerals Company, New York, N.Y.**

[21] **Appl. No.:** **754,410**

[22] **Filed:** **Jul. 12, 1985**

[51] **Int. Cl.:** **B01D 35/08**

[52] **U.S. Cl.:** **210/232; 210/328; 210/330; 210/344; 210/345**

[58] **Field of Search** **210/232, 328, 330, 333.01, 210/333.1, 344, 345, 347, 450, 479**

[56] **References Cited**

U.S. PATENT DOCUMENTS

| | | | | |
|-----------|---------|------------------|-------|---------|
| 3,139,404 | 6/1964 | Stock | ..... | 210/328 |
| 3,216,576 | 11/1965 | Roos | ..... | 210/328 |
| 3,327,860 | 6/1967 | Lyle, Jr. et al. | ..... | 210/328 |
| 3,373,873 | 3/1968 | Parmentier | ..... | 210/328 |
| 3,389,800 | 6/1968 | Roos | ..... | 210/328 |
| 3,426,909 | 2/1969 | Garner | ..... | 210/328 |
| 3,830,658 | 8/1974 | Davister | ..... | 210/328 |

| | | | | |
|-----------|---------|------------|-------|---------|
| 4,172,791 | 10/1979 | Davister | ..... | 210/328 |
| 4,391,706 | 7/1983 | Steinkraus | ..... | 210/330 |
| 4,430,404 | 5/1982 | Davister | ..... | 210/328 |
| 4,547,288 | 10/1985 | Little | ..... | 210/330 |

FOREIGN PATENT DOCUMENTS

| | | | | |
|--------|--------|-------------|-------|---------|
| 238157 | 1/1964 | Netherlands | | 210/328 |
|--------|--------|-------------|-------|---------|

Primary Examiner—Peter A. Hruskoci
Attorney, Agent, or Firm—Fisher, Christen & Sabol

[57] **ABSTRACT**

Tilting filter pans having generally parallel leading and trailing sidewalls which are sloped at an angle to permit increased filtration rates for a predetermined filtering efficiency, and also to permit increased filtering efficiency where the feed rate is constant. Drainage of the pans may also be improved. The feed is a slurry from which the liquid is removed, and the filter cake is dumped by rotation of each filter pan at a predetermined point of movement of the filter pan along a cyclical path.

20 Claims, 13 Drawing Figures

