

[54] **METHOD AND APPARATUS FOR HANDLING SOLVENT EXTRACTION CRUD**

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[58] **Field of Search** 210/83, 153, 159, 171, 210/195 S, 197, 236, 241, 523, 525, 538, 270, 271; 292/124, 125, 122, 224, 225; 198/746, 747, 748, 750

[56] **References Cited**

U.S. PATENT DOCUMENTS

659,916	10/1900	Davis	210/271
2,305,929	12/1942	Lund et al.	210/525
3,055,313	9/1962	Stoll et al.	198/750
3,498,465	3/1970	Klump et al.	210/525

FOREIGN PATENT DOCUMENTS

390,989	4/1933	United Kingdom	210/525
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[57] **ABSTRACT**

An apparatus and method are provided for handling the

problem of crud formation in solvent extraction equipment. "Crud" is the name commonly given to the thick interfacial layer of semi-floatable material that accumulates and interferes with many solvent extraction operations.

The apparatus disclosed is used in combination with mixer-settler equipment, and it includes a rotatable shaft, a blade mounted on the shaft, apparatus for moving the shaft and blade across a plane parallel to the surface of the liquid inside a rectangular settler vessel, equipment for rotating the blade and shaft about the shaft's longitudinal axis, and a locking device for locking the blade into an extended or retracted position. The method disclosed provides for lowering the blade into the liquid periodically and slowly traversing the length of the settler vessel; moving the crud mass toward one end of the vessel and causing it to be compressed therein; rotating the shaft and blade which causes the compressed crud to flow over a high-level weir at the end of the vessel; locking the blade with both faces parallel to the settler's surface and returning it to its original position, or to any other convenient predetermined position, from which it can be subsequently lowered again below the liquid level to start another cycle.

The invention is particularly applicable to the solvent extraction recovery of uranium from wet-process phosphoric acid.

10 Claims, 8 Drawing Figures

