

[54] PROCESS FOR THE MANUFACTURE OF ELECTROLYTIC COPPER

Primary Examiner—R. L. Andrews  
Attorney, Agent, or Firm—Lawrence W. Flynn

[75] Inventors: Bernard M. Fisher, New Orleans; Robert C. Hills, Metairie; Freddie J. Touro, New Orleans, all of La.

[57] ABSTRACT

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

A process is described for making electrolytic copper of high quality from chalcopyrite flotation concentrates, and the like. The concentrates are first slurried and then subjected to a high temperature-high pressure oxidation-leaching operation in an autoclave system under controlled conditions. The resulting slurry from the oxidation-leaching operation is flashed to atmospheric pressure in order to remove heat and then subjected to a solids-liquid separation. The separated liquor from the solids-liquid separation system, containing the recovered copper values, is cooled and then fed to an electrolytic deposition operation where metallic copper cathodes of high purity are produced. The spent electrolyte is further subjected to a sulfide treatment to precipitate and recover, as copper sulfide, the residual amounts of copper not deposited in the electrolytic cells. The copper sulfide is then recycled in the form of a slurry to the initial stages of the process.

[22] Filed: Feb. 27, 1974

[21] Appl. No.: 446,314

[52] U.S. Cl. .... 204/108; 75/117; 423/140; 423/633; 423/602; 423/158; 423/37; 423/87; 423/522; 423/555; 423/35; 423/41

[51] Int. Cl. .... C22d 1/16; C22b 15/00

[58] Field of Search ..... 75/117; 423/140, 158, 633, 423/602, 37, 87, 522, 555, 41; 204/108

[56] References Cited  
UNITED STATES PATENTS

3,637,371 1/1972 Maclaw et al. .... 75/117

22 Claims, 1 Drawing Figure

