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**Marsden et al.**

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(54) **PROCESS FOR DIRECT ELECTROWINNING OF COPPER**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) Appl. No.: **09/912,921**

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(51) **Int. Cl.**<sup>7</sup> ..... **C22B 3/06**

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(52) **U.S. Cl.** ..... **75/744; 205/367; 423/34**

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(58) **Field of Search** ..... **75/744; 205/367; 423/34**

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(57) **ABSTRACT**

A system and process for recovering copper from a copper-containing ore, concentrate, or other copper-bearing material to produce high quality cathode copper from a leach solution without the use of copper solvent extraction techniques or apparatus. A process for recovering copper from a copper-containing ore generally includes the steps of providing a feed stream containing communicated copper-containing ore, concentrate, or other copper-bearing material, leaching the feed stream to yield a copper-containing solution, conditioning the copper-containing solution through one or more physical or chemical conditional steps, and electrowinning copper directly from the copper-containing solution, without subjecting the copper-containing solution to solvent extraction.

(List continued on next page.)

**23 Claims, 2 Drawing Sheets**

