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**Robertson et al.**

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(54) **SYSTEMS AND METHODS FOR IMPROVED METAL RECOVERY USING AMMONIA LEACHING**

(58) **Field of Classification Search**  
CPC ..... C22B 15/0008; C22B 15/0078; C22B 15/0089; C22B 15/0093; C22B 3/14; C22B 3/44  
See application file for complete search history.

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(57) **ABSTRACT**

Systems and methods for basic leaching are provided. In various embodiments, a method is provided comprising leaching a slurry comprising a copper bearing material and an ammonia leach medium, adding copper powder to the slurry, separating the slurry into a pregnant leach solution and solids, and performing a solvent extraction on the pregnant leach solution to produce a loaded aqueous stream.

(52) **U.S. Cl.**  
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