No. 789,740. PATENTED MAY 16, 1905.

W. McA. JOHNSON.

ELECTROLYTIC APPARATUS.

APPLICATION FILED AUG. 14, 1903.

Fig. 1.

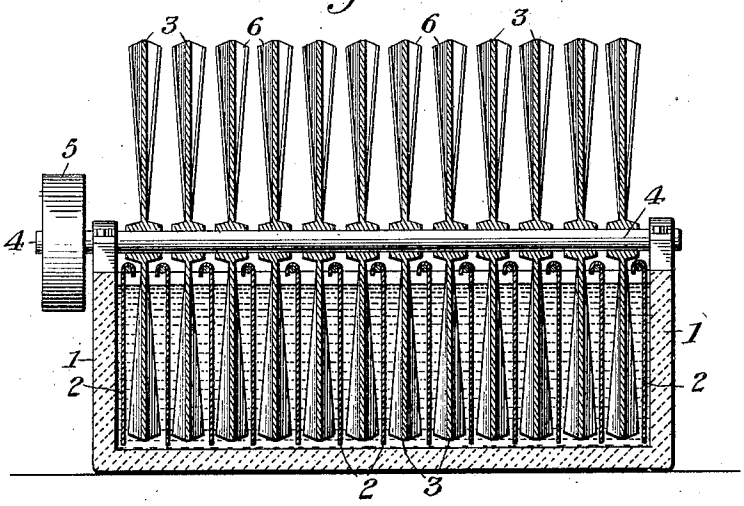


Fig. 2.

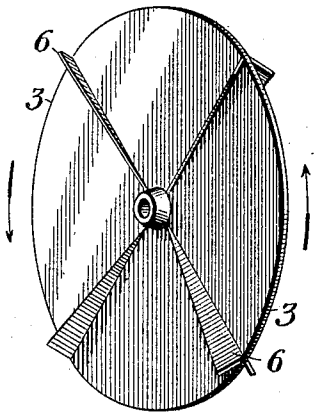
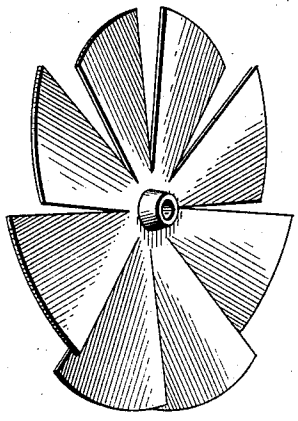


Fig. 3.



Witnesses:

R. A. Baldwin.

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No. 789,740. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

WOOLSEY McA. JOHNSON, OF IOLA, KANSAS.

ELECTROLYTIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 789,740, dated May 16, 1905.

Application filed August 14, 1903. Serial No. 169,463.

To all whom it may concern:

Be it known that I, WOOLSEY McA. JOHNSON, a citizen of the United States, residing at Iola, in the county of Allen and State of Kansas, have invented certain new and useful Improvements in Electrolytic Apparatus, of which the following is a specification.

This invention is an electrolytic apparatus designed particularly for the deposition of metals from solutions. The apparatus is more especially intended for the separation of copper from sulfate solutions obtained by leaching soluble surface ores or roasted sulfid ores.

For a clear understanding of my invention reference is made to the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section of my preferred form of electrolytic tank, showing the anodes and cathodes in position therein. Fig. 2 is a perspective view of one of the anodes.

Referring to said drawings, 1 represents a suitable tank or containing vessel, which may be constructed of or lined with any material substantially unaffected by the electrolyte, and 2 2 represent stationary cathodes immersed in the electrolyte and preferably composed of the metal to be deposited—in the specific instance to be described of copper.

3 3 are anodes consisting of cast disks of hard lead mounted upon a rotatable shaft 4, supported upon the tank.

A pulley 5 or equivalent device is provided for imparting movement to the shaft 4 and the anode-disks secured thereto.

Referring to Figs. 1 and 2, each anode comprises a disk 3, of hard lead, carrying a plurality of lead vanes, (indicated at 6,) the purpose of said vanes being to direct, during the rotation of the anode, a stream or streams of the electrolyte against the faces of the adjacent cathodes, thereby to facilitate the deposition of the copper in commercially-available form from weak or highly acid solutions. The vanes 3 may be inclined, as shown, to the plane of the disks.

I claim—

1. In electrolytic apparatus, a rotatable disk anode and a cathode, said anode having means for directing a stream of electrolyte against said cathode, substantially as described.

2. In electrolytic apparatus, a rotatable anode consisting of a disk of lead and a cathode, said anode having means for directing a stream of electrolyte against said cathode, substantially as described.

3. An electrolytic apparatus, comprising a containing vessel, cathodes therein, and anodes between said cathodes, said anodes consisting of disks of lead mounted for rotation and provided with vanes for directing a stream or streams of electrolyte against said cathodes, substantially as described.

4. An electrolytic apparatus comprising a containing vessel, cathodes therein, and anodes between said cathodes, said anodes consisting of disks of lead mounted for rotation and provided on each side with vanes for directing streams of electrolyte against said cathodes, substantially as described.

5. An anode for electrolytic apparatus comprising a disk provided on each side with vanes, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WOOLSEY McA. JOHNSON.

Witnesses:
H. W. EWING,
A. M. EWING.