

952,484.

G. VERVUERT.
METHOD OF LIXIVIATING ORES.
APPLICATION FILED AUG. 2, 1909.

Patented Mar. 22, 1910.

Fig. 1.

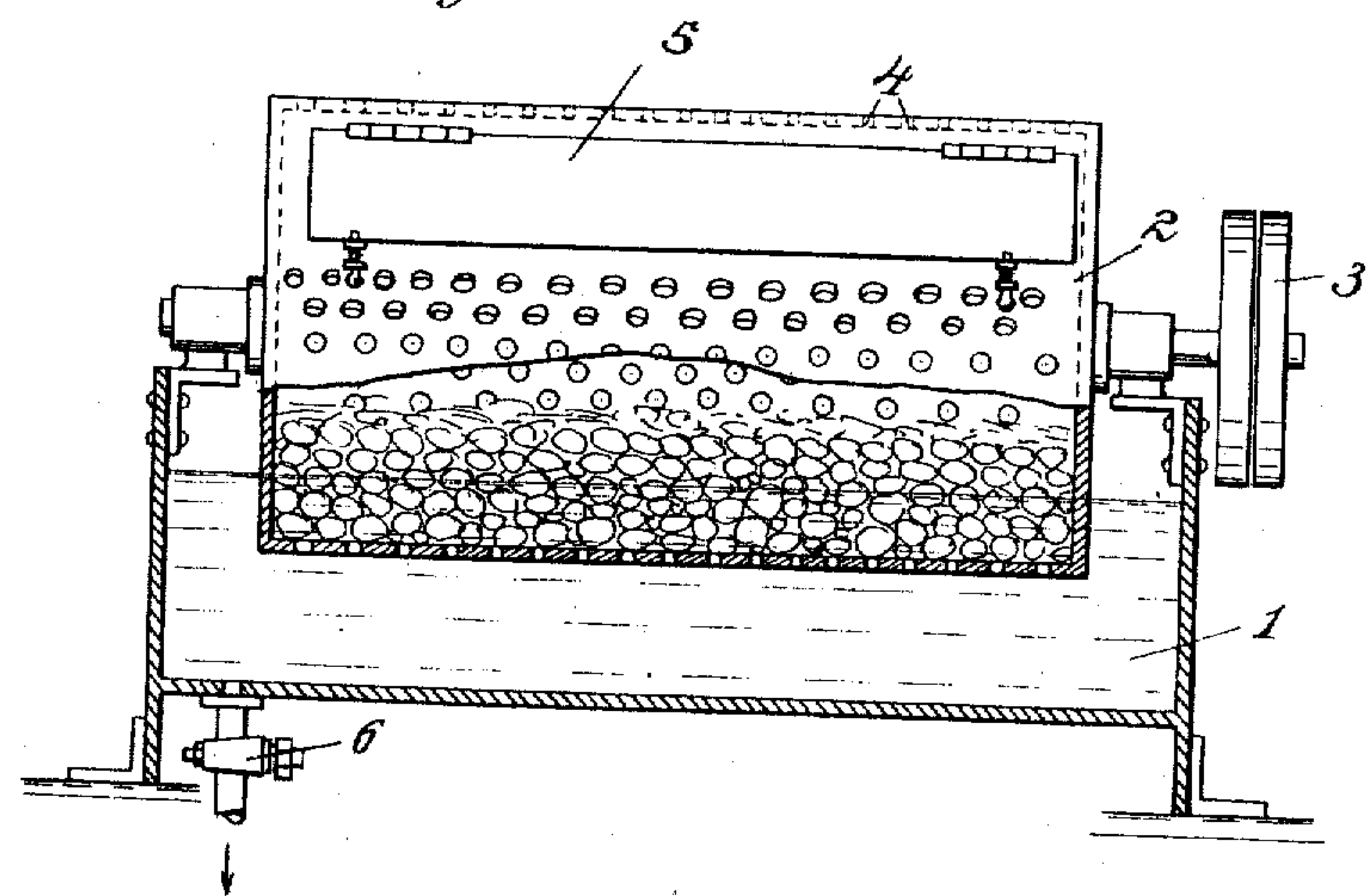
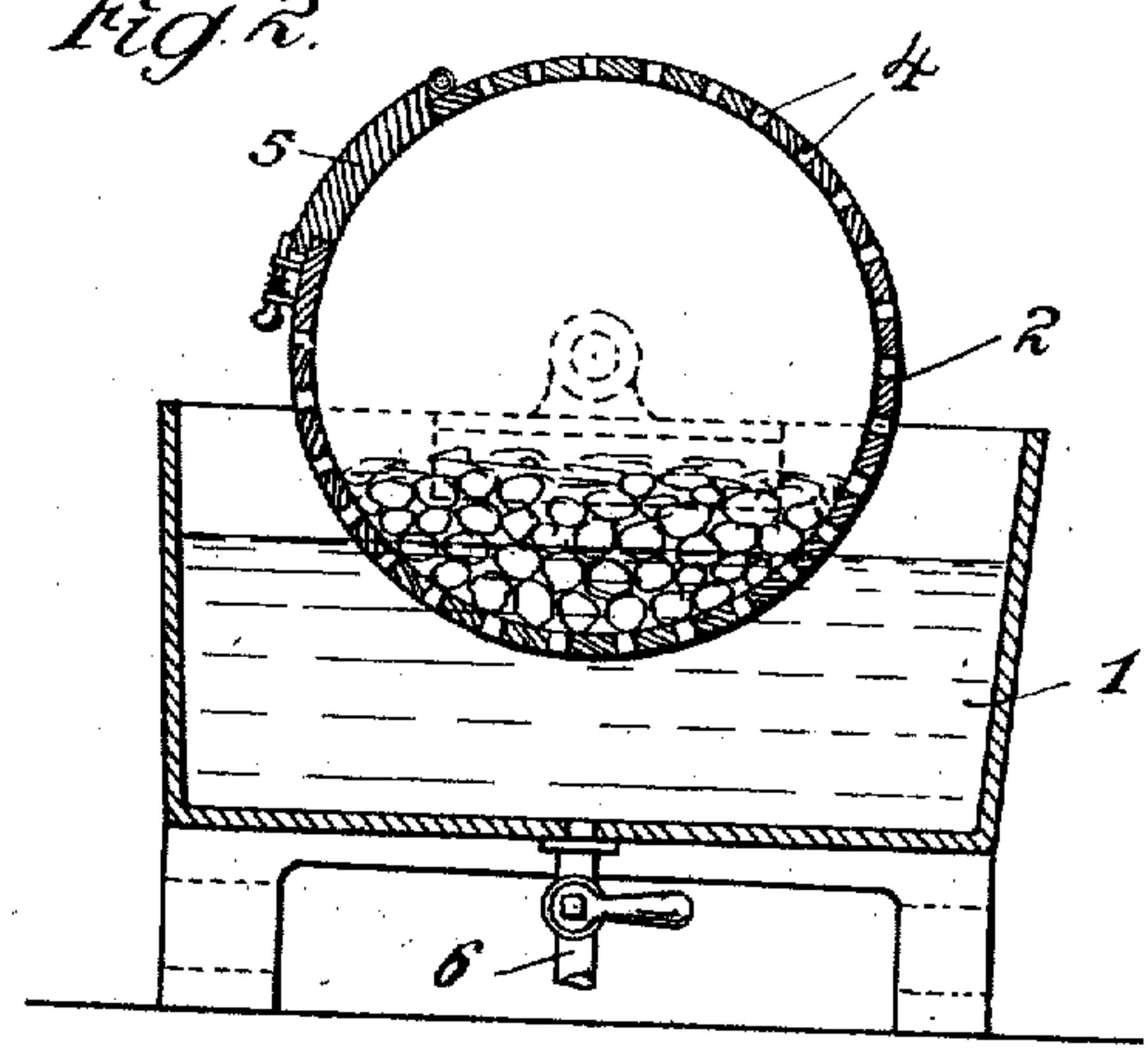


Fig. 2.



Witnesses:
Notch
G. Vervuert.

Inventor:
Gottfried Vervuert.
Lennie W. Hough & Co.
Attys.

UNITED STATES PATENT OFFICE.

GOTTFRIED VERVUERT, OF IMSBACH, GERMANY, ASSIGNOR TO EUGEN ABRESCH, OF NEUSTADT-ON-THE-HARDT, GERMANY.

METHOD OF LIXIVIATING ORES.

952,484.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed August 2, 1909. Serial No. 510,712.

To all whom it may concern:

Be it known that I, GOTTFRIED VERVUERT, doctor of engineering, a subject of the German Emperor, and resident of Imbach, in the Palatinate, Germany, (with the post-office address Gasthof Bauer,) have invented new and useful Methods of Lixivating Ores, of which the following is a specification.

Hitherto ores have usually been lixiviated by allowing the lixiviating liquid, such as an acid, to act on the stationary ore, which for this purpose is contained in spacious vessels; this process makes it difficult to obtain a rapid and complete lixiviation for several reasons. Besides this, after draining off the solutions a large part of the solvent adheres to the ore particles which can only be removed by using great quantities of washing water.

The object of the present invention is to obviate these disadvantages.

According to the present invention the process of lixiviating is effected by placing the ore in a drum which is rotated by hand or mechanically in a vertical plane and in such a manner that the drum is partially or completely immersed in the lixiviating liquid contained in a special vessel. The drum is provided with holes at its periphery, through which the liquid has access to the ore, and is also provided with a removable cover, to enable the ore to be introduced or removed.

The drawing shows an apparatus which may be used for carrying out the process.

Figure 1 is a sectional side elevation; Fig. 2 is a cross section.

1 is the reservoir for holding the lixiviating fluid, above which is journaled the drum 2, which may be set in motion by a pulley belt 3. The drum is provided at its periphery with holes 4, while the cover 5 serves to close the opening for introducing or emptying out the ore. The liquid can be removed from the vessel 1 through the cock 6.

The rotation of the drum in a vertical plane, while partially immersed in the lixiviating solution, will give the ore particles

a tumbling movement that will cause them to exert an abrasive or rubbing action on each other, which has a peculiarly favorable influence on the leaching; and at the same time the particles of different sizes will be kept well mixed, which is also a desideratum.

I am aware that it has been proposed to give the ore a shaking movement during the leaching operation, but this does not result in a tumbling motion, which is especially effective, and on the other hand it causes the light particles to remain permanently at the top of the mass, regardless of the agitation, and the heavy particles to be segregated at the bottom.

Another very important feature of the invention is that the rotation of the drum is attended with free access thereto of atmospheric air, whereby the chemical reactions, and therefore the extraction, are accelerated, whether the ore be an oxid, for instance, or a sulfid.

Now what I claim and desire to secure by Letters Patent is the following:

The method of lixiviating ores, which consists in introducing the ore into a perforated drum in such quantity that the particles may have a free movement therein with respect to each other, and in rotating the drum while partially immersed in the lixiviating solution, whereby the ore is given a tumbling motion to cause the rubbing or abrasive action of the particles on each other during lixiviation, and the particles of different sizes are kept well mixed during such operation, the rotation of the drum being attended with the free access thereto of atmospheric air, to accelerate the chemical reactions; substantially as described.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 21st day of July, 1909.

GOTTFRIED VERVUERT.

Witnesses:

EUG. ABRESCH,
HEINRICH SPÜHLER.