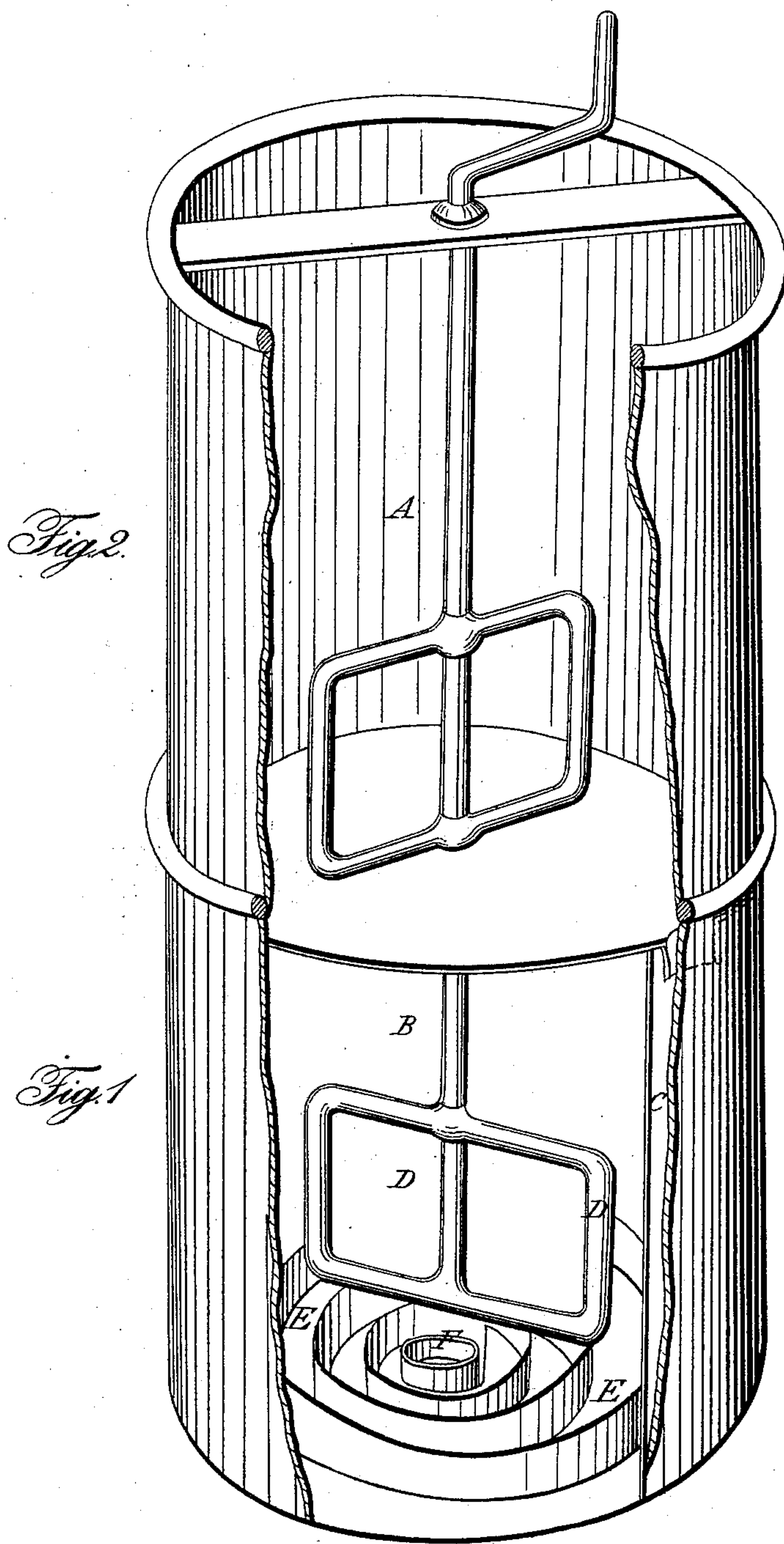


A. BUFFUM.
Ore Amalgamator.

No. 8,443.

Patented Oct. 21, 1851.



UNITED STATES PATENT OFFICE.

ARNOLD BUFFUM, OF BROOKLYN, NEW YORK.

ORE-WASHER.

Specification of Letters Patent No. 8,443, dated October 21, 1851.

To all whom it may concern:

Be it known that I, ARNOLD BUFFUM, of Brooklyn, Kings County, and State of New York, have invented a new and useful Improvement in Quicksilver and Gold Amalgamators; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The object of my invention is to supply the wants of the gold miners with a more harmonious and perfect arrangement for extracting gold by amalgamation, by passing crushed quartz and other auriferous matter commingled with water, over an extended length of surface of quicksilver in continuous contact, by the arrangement of a coiled quicksilver holding channel on the inside of the bottom plate of a stationary cistern; in combination with a horizontally revolving water mover, immediately above the channel, to carry the water in a circular direction, to sweep the auriferous matter in the channel coil, on the surface of the quicksilver, spirally, from the periphery to the center of the cistern. The cistern may be sixteen inches diameter and fourteen inches deep, with an escape opening two inches diameter at the center of the bottom, surrounded by a ring rising above the surface of the quicksilver. The coiled channel is formed by the application of a flange rising say two inches from the bottom, commencing at or near the central ring, and coiled spirally to the circumference, forming a coiled channel about sixteen feet long, two inches deep, and one inch broad, covering the bottom of the cistern, from the central ring to the circumference. A washing cistern about the same dimensions is arranged over the amalgamator, with a spout leading from the bottom of the washing cistern to a descending pipe connected with the outer end of the coiled channel. There is a descending shaft in the center of the washing cistern, passing downward through the bottom into the amalgamating cistern, with a whirling dasher attached in the washing cistern, and a pair of paddles or water movers in the amalgamating cistern.

In operation the coiled channel is about half filled with quicksilver, the supply of

water and auriferous matter is passed into the open top of the washing cistern, the descending shaft is made to revolve horizontally, which whirls the dasher and commingles the contents in the cistern. The commingled contents then pass downward through the descending pipe, and fall upon the quicksilver at the outer end of the coiled channel; the whirling motion given to the paddles in the lower cistern, carries the water in a whirlpool, which moves the auriferous matter in the coiled channel, in a circular and centripetal direction, from the circumference to the center, sliding on the surface of the quicksilver a spiral distance of about sixteen feet, uniting the gold and quicksilver in amalgam, and carrying off the sand through the ring at the center of the bottom.

Drawings.—Figure 1, represents an inside top view of the bottom of the amalgamating cistern, with the spiral flange forming a coiled channel, commencing at the side of the cistern and ending at the ring in the center. Fig. 2, letter A represents the washing cistern with its arrangements; B represents the amalgamating cistern; C represents the descending pipe; D D represents the whirling paddles in the amalgamating cistern; E represents the division of space on the bottom of the cistern by the spiral flange; F represents the central ring through which the water and sand pass away.

By making the amalgamating cistern four feet in diameter, the coiled channel in which the water and auriferous matter pass on the surface of the quicksilver, becomes extended to one hundred and fifty feet in length. The washing cistern placed above the amalgamating cistern, is described only as one mode of conveying the auriferous matter to the amalgamating channel. A sloping funnel on the outside of the lower cistern, entering at the periphery of the channel, answers the same purpose.

The word "spiral" is used not to convey the idea of a screw form, but an even coil on a level surface.

What I claim as my invention, and desire to secure by Letters Patent is,

The combining in the same separating cistern, the spiral channel having a discharge

aperture at the center, and the revolving
dasher, whose arms are immediately above
the channel; for the purpose of separating
metals from the impurities with which they
5 are mechanically mixed, by acting in the
manner substantially as described, and I
claim this construction irrespective of the

use of quicksilver in the channel, which may
in some cases be dispensed with.

New York 25 August 1851.

ARNOLD BUFFUM.

Witnesses:

H. F. BURDICKS,

G. W. FRINK.