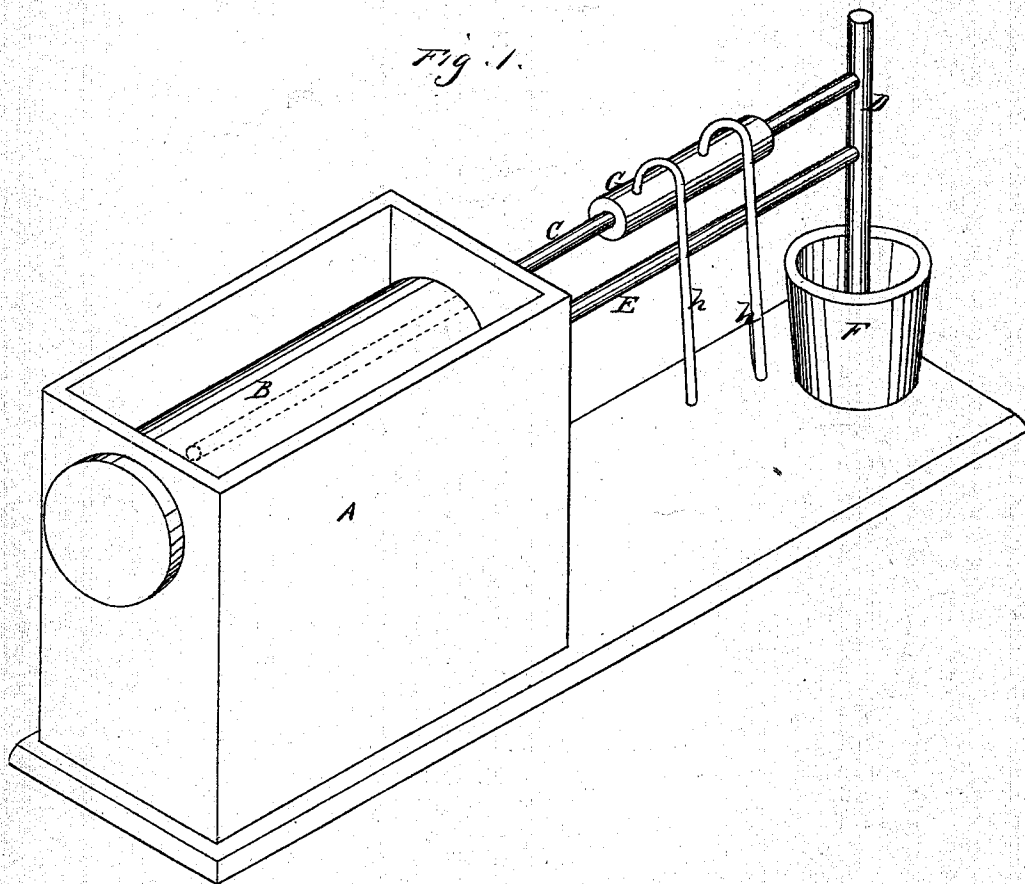


M. B. HOWARD.

Apparatus for Separating Quicksilver from Amalgams.

No. 139,314.

Patented May 27, 1873.



Witnesses

John L. Boone
C. M. Richardson

Marcus B. Howard
per Seavey & Co
Atty

UNITED STATES PATENT OFFICE.

MARCUS B. HOWARD, OF ELLSWORTH, NEVADA.

IMPROVEMENT IN APPARATUS FOR SEPARATING QUICKSILVER FROM AMALGAMS.

Specification forming part of Letters Patent No. **139,314**, dated May 27, 1873; application filed January 24, 1873.

To all whom it may concern:

Be it known that I, MARCUS B. HOWARD, of Ellsworth, Nye county, State of Nevada, have invented an Improved Quicksilver Amalgam Retort; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains, to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improved retort for separating quicksilver from any metal with which it may be combined in the form of an amalgam. My improvement consists in the employment of two parallel pipes which pass from the interior of the retort and are connected at their outer ends with the discharge-pipe, thus serving to establish a current or circulation of the vapors through the upper pipe and back again through the lower pipe into the retort. My improvements further consist in surrounding either one or both of the pipes with a water-jacket by which the condensation is greatly hastened.

In order to more fully illustrate and explain my invention reference is had to the accompanying drawing forming a part of this specification, in which—

Fig. 1 is a perspective view of my improved retort.

Let A represent the masonry in which the retort B is supported. C is a pipe which extends from inside of the retort, passing out through one end above the center, and extending to a distance from it, where it is connected to the upper end of the vertical discharge-pipe D. E is another pipe which is connected with the end of the retort through which the pipe C passes at some point below

the pipe E, and the outer end of which is also connected with the vertical discharge-pipe. The lower end of the discharge-pipe D is immersed in water in the vessel F in the usual way. G is an annular jacket which surrounds the upper or outflowing pipe C, and into which water is conducted or drawn off through the pipes *h h*.

By employing the upper and lower pipes, C E, there will be an outflowing and inflowing current or circulation established through them which passes the vaporized mercury rapidly and continuously through the water jacket or condenser, thus affecting a material saving in time, labor, and fuel, as well as mercury, as has been demonstrated by repeated tests.

The water jacket can be applied either to the upper pipe alone or to both the upper and lower, as desired. I prefer to employ it only on the upper pipe.

This improvement can be attached to a pot-retort as well as the horizontal cylinder-retort.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The upper and lower pipes C E connected at their outer ends with the vertical discharge-pipe D, when attached to the retort B, in the manner and for the purpose above described.

2. The upper and lower pipes C E and vertical discharge-pipe D, in combination with one or more water-jackets, G, substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

MARCUS B. HOWARD. [L. S.]

Witnesses:

MARK A. ROCK,
GRILLS H. ISBELL.