A. Millochau,

Refining Metals.

No. 112,831. Patented Mar. 21. 1871.

Fig. 1.

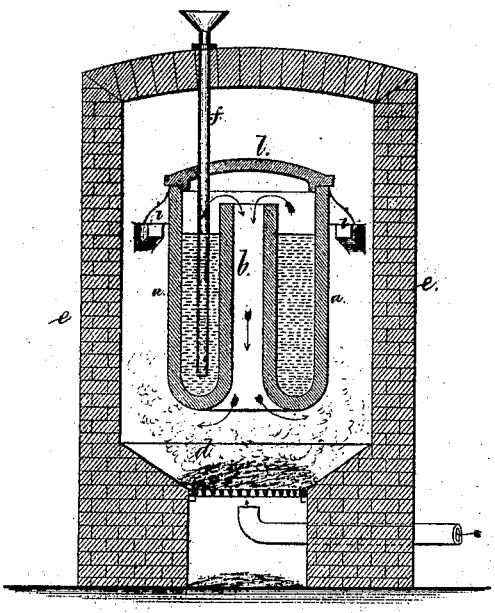
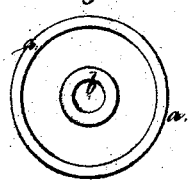


Fig. 2.



Witnesses,
Chas. H. Smith
Geo. D. Walker

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Samuel W. Gerrell Atty.

United States Patent Office.

ADOLPH MILLOCHAU, OF NEW YORK, N. Y.

Letters Patent No. 112,831, dated March 21, 1871.

IMPROVEMENT IN APPARATUS FOR REFINING METALS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ADOLPH MILLOCHAU, of the city and State of New York, have invented an Improvement in Refining Metals; and the following is declared to be a correct description of the same.

The object of this invention is to subject the metal to be refined to an intense heat and to the action of chemical substances, and at the same time allow for the escape and combustion of gaseous materials from the crucible and the exclusion of the atmospheric air.

I make use of a crucible with a central descending tube opening at the bottom into the fire-space, and at the top into the crucible at a little distance below a removable cover.

The metal to be refined is put into the crucible and the cover secured by a luting of clay or similar material, and heat is applied to the outside of said crucible. When the contents are sufficiently heated the refining material, such as caustic soda combined with an oil, or any flux or refining substance, is introduced among the metal in the crucible through a tube that passes through the cover.

The volatile products pass off from the materials in the crucible and drive the air before them down the central tube, and the combustible products are consumed and act to increase the heat of the fire beneath the crucible.

By this means the refining operation is promoted, because the escaping gases intensify the fire at a point where it is most available in heating the contents of the crucible, and the crucible itself is strengthened and rendered less liable to be broken by the action of the heat.

In the drawing—

Figure 1 is a vertical section of the crucible and a furnace for containing the same, and

Figure 2 is a plan of the crucible, detached.

The crucible is made with the sides *a* and interior central tube *b*, that opens downwardly through the bottom of the crucible, and

l is a cover, that is to be placed on and rendered tight by a luting of clay.

The furnace *d* and inclosing brick-work *e* are of suitable size and shape, and the crucible is to be sustained by lugs *i* or otherwise, so that the fire has free play all around the same.

The refining material is to be introduced through the tube *f* after the metal in the crucible has become sufficiently heated, and the gaseous products evolved escape downward through the tube *b* to intensify the heat by the combustion of the escaping gases.

I have discovered that cocoa-nut oil combined with caustic soda forms a superior refining compound that acts as a flux, and combines with impurities in iron or other metals, and causes the separation of such impurities, and the improvement in the quality of the metal.

This crucible may be employed in the manufacture of bone black or other materials in which gaseous materials are driven off that will be consumed in the fire and add to the intensity of the heat.

I claim as my invention—

The crucible made with a descending tube, opening at the lower end into the fire-space below the crucible, as and for the purposes specified.

Signed by me this 31st day of December, 1870.

AD. MILLOCHAU.

Witnesses:

CHAS. H. SMITH,

GEO. T. PINCKNEY.