

G. LUCE.

Processes and Apparatus for Desilvering and Refining
Lead.

No. 152,906.

Patented July 14, 1874.

fig. 1

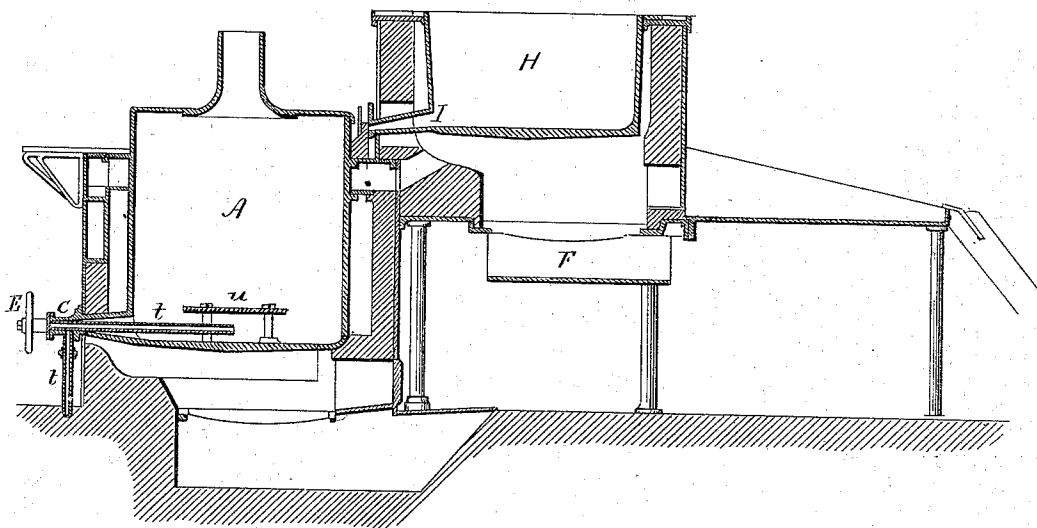
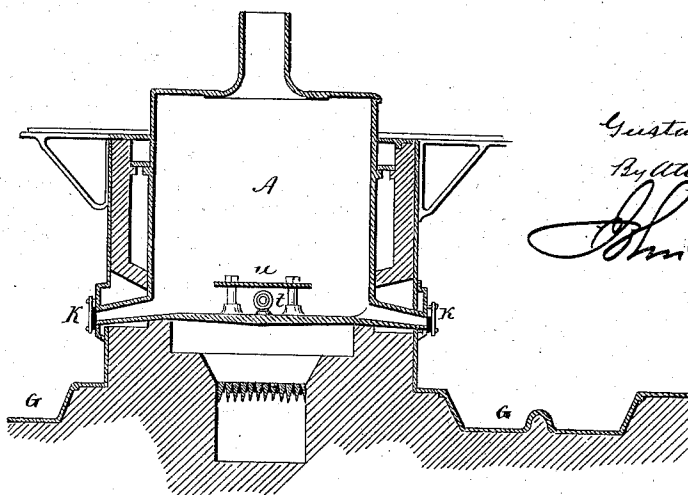


fig. 2



Gustave Luce
By Atty. Inventor

John E. Cade

Witnesses
J. H. Shumway
A. J. Dittels

UNITED STATES PATENT OFFICE.

GUSTAVE LUCE, OF MARSEILLES, FRANCE.

IMPROVEMENT IN PROCESSES AND APPARATUS FOR DESILVERING AND REFINING LEAD,

Specification forming part of Letters Patent No. **152,906**, dated July 14, 1874; application filed June 3, 1874.

To all whom it may concern:

Be it known that I, GUSTAVE LUCE, of the firm LUCE, SON & ROZAN, of Marseilles, France, manufacturers, have invented an Improvement in Process of and Apparatus for Desilvering and Refining Lead, of which the following is a specification:

My invention relates to certain improvements upon the patent granted to me November 25, 1873, No. 144,993, for desilvering and refining lead; and it consists, first, in a new and improved method of agitating the molten lead to start crystallization, and at the same time to oxidize and separate the oxidizable metals; and, second, in a new and improved arrangement of the pipes for delivering or introducing the agitating and oxidizing fluid throughout the molten mass, as will be hereinafter fully described.

In the process as described in my former patent I make use of steam to agitate the molten mass of metal and separate the oxidizable metals therefrom; and in my present application I desire to substitute ordinary atmospheric air for the steam, or other compressible gaseous compound containing oxygen. In using the air or gas I compress the same in any suitable manner, and force it through the molten metal in the manner and by the apparatus hereinafter described.

The apparatus which I employ differs from that described and shown in my patent above referred to in the disposition and arrangement of the pipes for distributing the air or gas throughout the molten metal.

In the drawings, Figure 1 represents a longitudinal section of my apparatus, and Fig. 2 a transverse section of the same.

H represents a boiler, in which the lead is to be melted, provided with a tubular spout, I, and having a fire-grate and furnace, F, un-

derneath. A represents the vat or crucible in which the molten metal is subjected to the action of the agitating fluid, provided with spouts K K, leading to the ingot-molds G G'. The pipe *t t*, through which the air or gas or other agitating and oxidizing fluid is introduced is arranged horizontally in the lower part of the crucible or vat H at the center below a plate, *u*, which serves to distribute the air or gas uniformly throughout the molten metal. The said pipe *t* is provided with a cock, C, which is operated by means of a wheel, E.

As above stated, I employ compressed air or other compressible gaseous compound containing oxygen to agitate the molten metal and oxidize the oxidizable metals in the mass. The agitation starts crystallization in the mass, and serves to separate the lead from the other metals, as described in my former patent, to which reference has been made.

The general operation of my apparatus is similar to that described in my former patent, and need not be described in detail.

What I claim is—

1. The within-described process of refining lead by the employment of compressed air or other compressible gaseous compound containing oxygen, substantially as and for the purposes herein described.

2. The pipe *t*, arranged horizontally in the lower part of the vat or crucible H, as and for the purposes herein described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

GUSTAVE LUCE.

Witnesses:

L. GIRARD, *Fils*,
AUGT. ARVET.