

Thomas Rhoad.

Apparatus for Separating Gold from Quartz.

N^o 73,041.

Patented Jan 7. 1868.

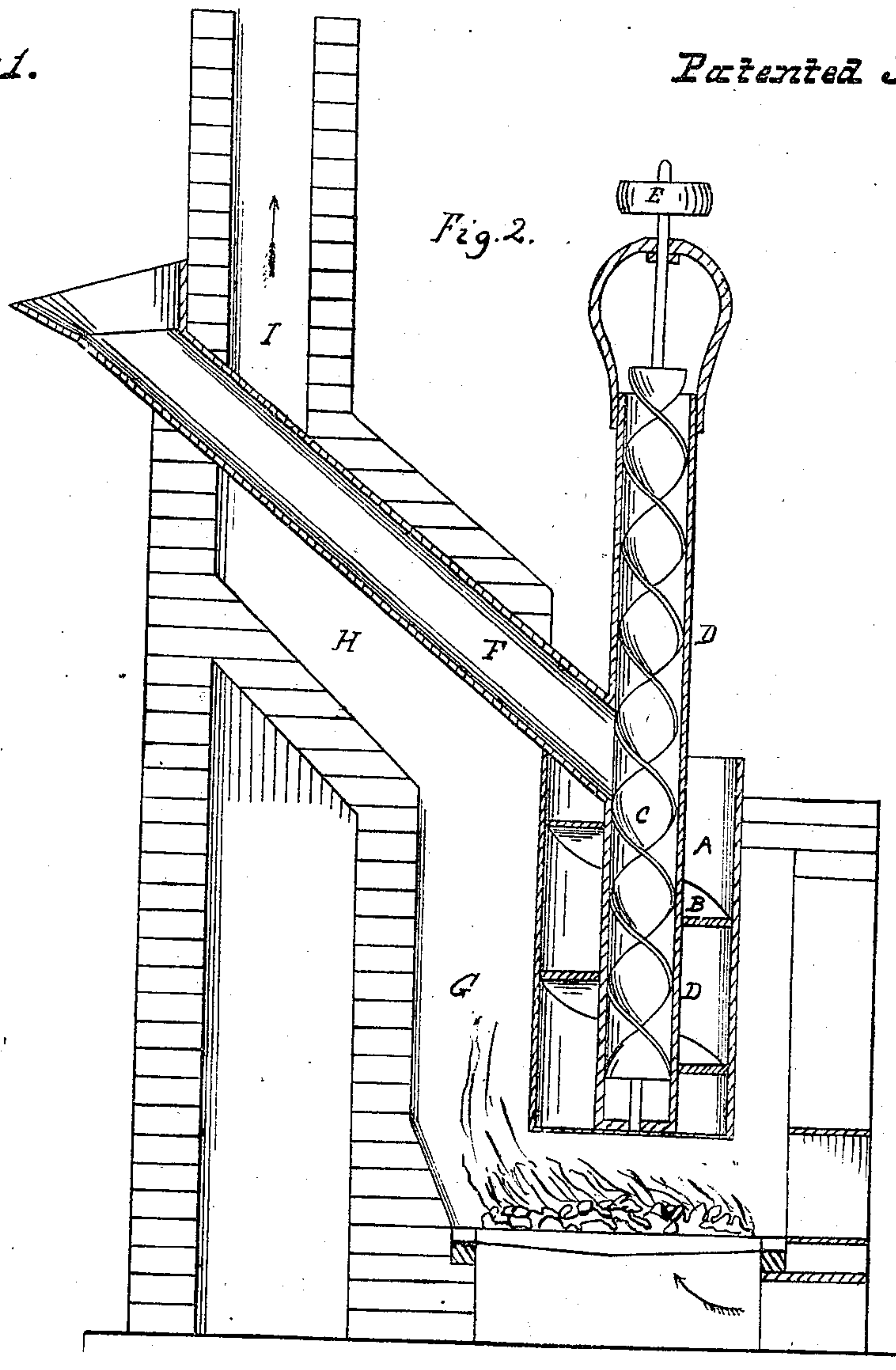
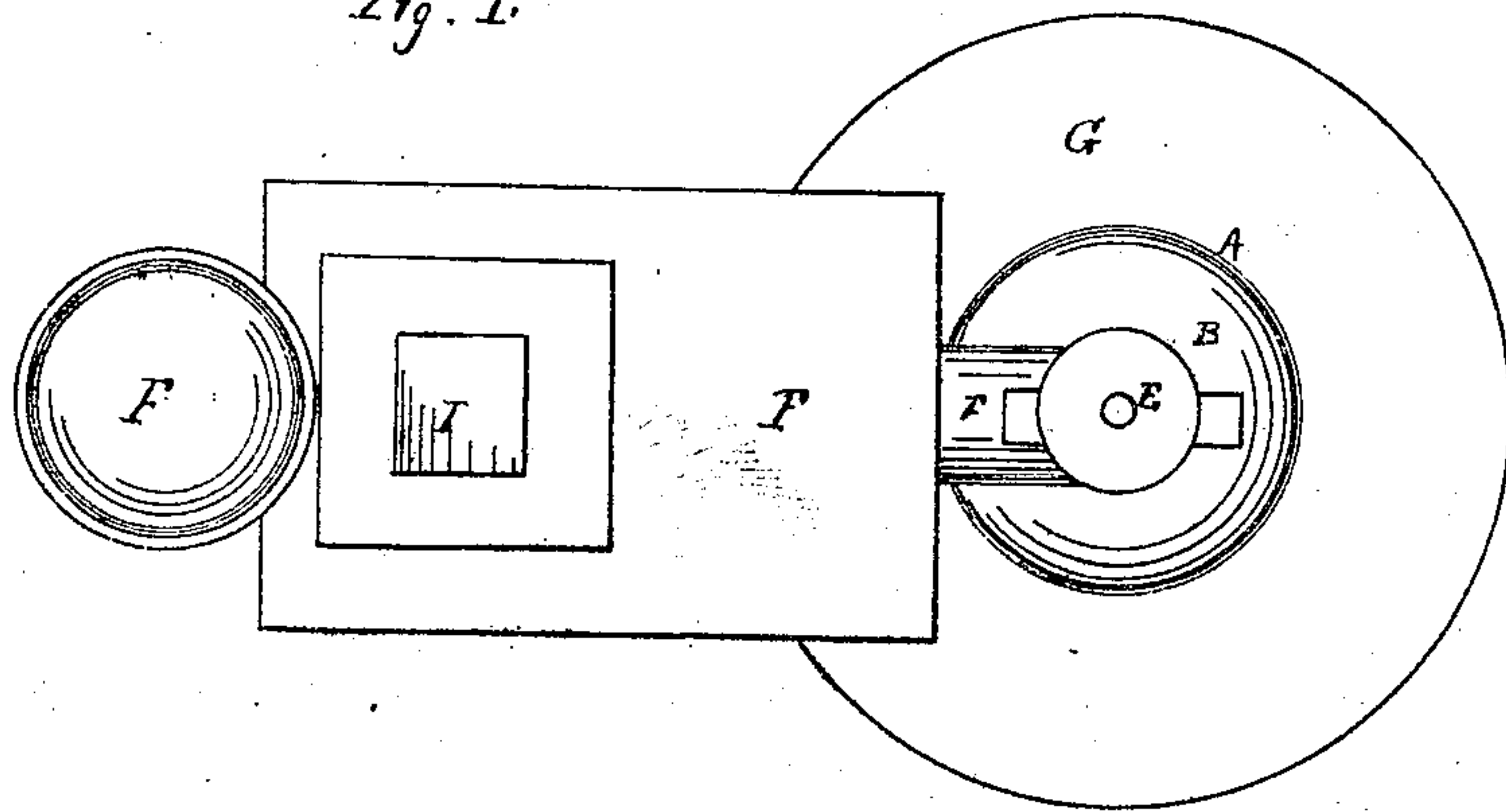


Fig. 1.



United States Patent Office.

THOMAS RHOADS, OF OTTAWA, ILLINOIS.

Letters Patent No. 73,041, dated January 7, 1868.

IMPROVED APPARATUS FOR SEPARATING GOLD FROM ORES.

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, THOMAS RHOADS, of Ottawa, in the county of La Salle, in the State of Illinois, have invented a new and improved Apparatus for Separating Gold from Quartz or other Ores; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in a novel manner of feeding the crushed quartz or gold ore into a separator or amalgamator, whereby the feeding is continuous, and involves but little labor, at the same time feeding the ore at the bottom of the vessel containing the mercury or heated lead.

My invention further consists in providing a novel means for keeping the crushed ore in contact with the mercury or lead for a long time, and continually moving, in order to enable the latter to extract or appropriate as much as possible of the gold contained in the ore.

My invention further consists in providing a means for heating the ore before it comes in contact with the lead, when lead is used, in order that the lead may not be chilled, and thus the operation can be conducted more rapidly.

To enable others skilled in the arts to make and use my invention, I will proceed to give a full and exact description thereof.

Corresponding letters in the drawings represent corresponding parts.

Figure 1 is a horizontal plan of the apparatus.

Figure 2 is a vertical section through the apparatus.

I construct a kettle of sheet or cast iron, A, cylindrical in form, said kettle A having an iron worm or helix, B, in the inside, fitting against the interior side of the kettle A, and having a space in the centre to receive the pipe D. Said pipe D contains a double helix, C; terminating with cylindrical ends, running in journals, and having at the upper part a pulley, E, to receive motive-power. To the pipe D is attached a side branch-pipe, F, provided with a funnel at the outer end, into which the ore is fed, either with a shovel or by the cart-load. This apparatus is enclosed in brick-work, consisting of a furnace, G, a flue, H, and a chimney, I.

The mode of operation is as follows: The kettle A being filled with lead at a moulding-heat, and kept fluid by a fire ignited in the furnace G, finely-pulverized gold ore or quartz is poured into the pipe F. At the same time a rotary motion is given to the double helix C, in the proper direction to make it feed downwards. The ore being forced down into the lead, will, on account of its less specific gravity, rise upwards in the latter, but is prevented from rising too rapidly by the worm or helix B; along which the ore has to glide in its upward progress, and, while on this transit, will expose every part of its surface to the action of the lead.

When the separation of the gold from the ore is effected with mercury, the operation is exactly alike, except that the fire is dispensed with.

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

The inside double helix C, the helix B, inside kettle A, the feed-pipe F, and the heating-flue H, when in combination with each other, constructed substantially as and for the purpose described in the foregoing specification.

THOMAS RHOADS.

Witnesses;

E. ROSE,

A. F. JAQUES.