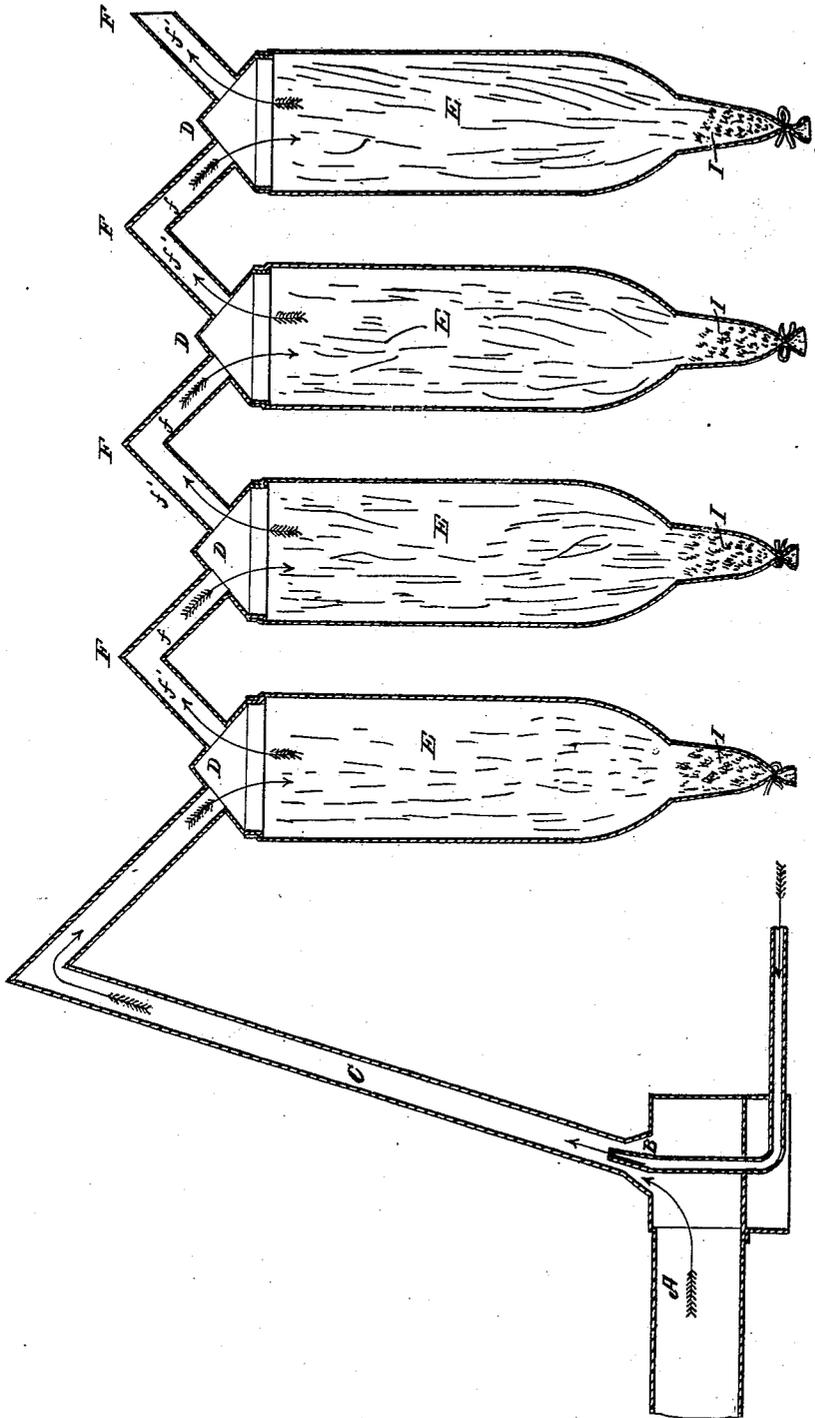


R. JONES.
Making White Zinc.

No. 10,696.

Patented March 28, 1854.



UNITED STATES PATENT OFFICE.

RICHARD JONES, OF BURLINGTON COUNTY, NEW JERSEY.

IMPROVEMENT IN MAKING ZINC-WHITE.

Specification forming part of Letters Patent No. 10,696, dated March 28, 1854.

To all whom it may concern:

Be it known that I, RICHARD JONES, of the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in the Process of Manufacturing White Oxide of Zinc, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which makes part of this specification, and which represents a vertical section through so much of an apparatus for making white oxide by my improved process as is necessary to illustrate my improvements.

My improvements are applicable to the manufacture of the white oxide from metallic zinc or from any of its ores suitable for the purpose; and my invention consists in forcing a jet of air among the fumes and vapors which rise from the furnace or retort in which the zinc or its ore is heated. The office of this jet of air is to oxidize the vapor of zinc, cool it, and carry it over into the collecting-chambers.

My invention further consists in so constructing and arranging the pipes for conducting the mixed air and vapor into the collecting-chambers, and from one chamber to another, that every portion of the conduit shall be inclined sufficiently to prevent it from choking by the lodgment of the oxide.

My invention further consists in constructing and arranging the conduit-pipes in such manner that the vapor shall be forced down into one collecting-chamber, and must rise to go into another, by which means the deposited oxide is assorted in as many different qualities as there are receiving-chambers.

The accompanying drawing represents an apparatus by means of which my improvements may be carried into effect. The furnace or retort and the fan or other blower are omitted, as they may be made in the usual manner. The mouth A of the furnace or retort terminates at the entrance to the pipe C, which conducts the vapors to the collecting-chambers. The nozzle B of the blast-pipe, for supplying air to oxidize the vapors and to create the requisite draft, enters the foot of the conduit C, and the pressure given to the air by the blower must be such that the mechanical force of the jet issuing from the nozzle will be sufficient to convey the vapors through a series of receiving-chambers. The conduit-pipes should

be made of iron and connected to the domes D, which form the tops of the collecting-chambers. The pipes in this instance are arranged in a series of pointed arches, F, the sides of which meet at the top at an angle of about forty-five degrees and terminate at their bottoms, which are open in the domes D, so that no place in the pipes is left flat enough for the oxide to accumulate on. As the pipes *f*, that lead the vapor into the domes, are all inclined downward, the vapor is thrown down to the bottom of the chambers, and must rise again before it can enter the ascending side *f'* of the arch, to pass into the next chamber.

The collecting-chambers are represented as consisting of a sack, E, of muslin, which I deem the best material known for the purpose, and recommend it in all cases; but my improvements may be used in connection with chambers of any other form and material. Each of these sacks E is suspended from a dome, D, and has a contracted neck, I, at its lower end, to collect and more conveniently discharge the product. By this arrangement an abundance of air is always intermixed with the vapors, which insures their rapid cooling and thorough oxidizing, as oxygen is always present in excess.

The form and arrangement of the parts may be greatly varied without any departure from the principles of my invention, and I contemplate to make such changes, if necessary, to adapt the apparatus to different circumstances and to suit the views of different constructors. Some of the improvements, too, are applicable to other apparatus, and one or more of them will often be found useful when separated from my apparatus and introduced into others. I therefore contemplate using my improvements both separately and in connection.

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

1. The method herein described of cooling, conveying, and oxidizing the vapor of zinc, by means of a jet of air introduced into a closed retort, substantially as herein described.

2. The blowing of the mixed air and vapor through a series of narrow vertical chambers in succession, in each of which the vapor descends on entering, and must rise again to the top before it can pass into the next chamber, whereby the oxide is sooner deposited, and at

the same time is separated into as many different qualities as there are chambers.

3. Constructing the conduit-pipes so that every portion of them shall be inclined in such manner as to prevent the accumulation of matter to clog them, and to direct the current of vapor downward on entering the condensing-chambers, the conduits thus constructed and operating being arranged over the collect-

ing and condensing chambers, substantially as described.

In testimony whereof I have hereunto subscribed my name.

RICHARD JONES.

Witnesses:

JOSEPH L. MORTON,
WILLIAM EARLEY.