

United States Patent Office.

EAYRE O. BARTLETT, OF BIRMINGHAM, PENNSYLVANIA.

Letters Patent No. 108,433, dated October 18, 1870.

IMPROVEMENT IN TREATING THE ORES OF LEAD AND ZINC FOR THE MANUFACTURE OF PIGMENTS, &c.

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, EAYRE O. BARTLETT, of Birmingham, Huntingdon county, Pennsylvania, have invented a new and useful Process of Treating the Ores of Lead for the Manufacture of a White Pigment, applicable to the ores of zinc and the mixed ores of zinc and lead; and I do hereby declare the following to be a full and exact description thereof.

My process is to be used in a furnace, as hereinafter described, in connection with the ordinary settling-room, and the bag-collecting room, known as the Jones's bag-room.

My process is applicable to galena or other ores of lead, or to the ores of combined sulphuret of lead and zinc, or to the carbonates, or sulphurets, or silicates of zinc.

In manufacturing white pigment from galena or the sulphuret of lead, I pulverize the ore, either with or without a preliminary roasting. I employ an ordinary furnace, say, three (3) feet by four (4) feet, in section, inside measurement, and about four (4) feet high, with either arched or flat top. I employ a solid bottom, made of iron plate, set on piers, to allow the air to pass, in contact with the under side of the iron plate.

The furnace is open in front for about three (3) feet in height. From the top a pipe or flue leads into the ordinary cooling or settling-room used in the manufacture of white zinc.

The blast is introduced by tuyeres on the two sides and back. I prefer to employ lump charcoal as fuel, although other fuel will answer, though not nearly so well.

I build my fire on the flat bottom of the furnace, of charcoal, and when it is in a glow I throw the pulverized ore over the top of the fuel, in a very light shower, and as soon as the ore reaches the fuel it blazes up, and is instantly carried off as a vaporous product to the ordinary settling and collecting-room.

I repeat constantly lightly showering or throwing the ore on top of the burning fuel, allowing only suf-

ficient intermission for the vaporous product of the previous combustion to pass off.

At intervals, as the fuel burns out, I suspend throwing in the ore, replenish the fire, and draw out the ashes through the front.

I prefer charcoal because it makes a livelier and quicker fire, and has less impurity.

I find by this mode of burning galena or other ore of lead, that a product resembling closely the pigment usually called white lead is produced.

By treating in the same manner the mixed sulphuret of lead and zinc, a product suitable for a white pigment will also be obtained as a vaporous product; and in like manner by treating the ordinary ores of zinc, such as silicate, carbonate, or sulphuret, the pigment known as zinc white will be obtained.

The products of combustion in either case pass, together with the vaporous product from the ore to the ordinary cooling and settling-room or tower used in the manufacture of zinc white, and thence through an exhaust fan into a bag-room, where they are strained, and the material for white pigment collected on the inside of the bags by what is known as the Jones's bag process.

During the process I stir up the fire to bring dry ore or metal, not acted upon, into direct contact with the air.

I find that without the use of any kind of grate bars I can obtain, in a furnace with solid bottom, by a continuous process, a fine white pigment from either of the ores above mentioned.

Having thus described my improvement, What I claim as new, and desire to secure by Letters Patent, is—

The process of treating ores of lead and zinc by continuously throwing a thin shower or stratum of pulverized ore onto a bed of ignited fuel, and collecting the products, as above described.

Witnesses: EAYRE O. BARTLETT.

GEORGE E. BUCKLEY,

WM. R. WRIGHT.