D. R. ERDMANN.

Making White Lead.

No. 25,106. Patented Aug. 16, 1859.

Fig. 1.

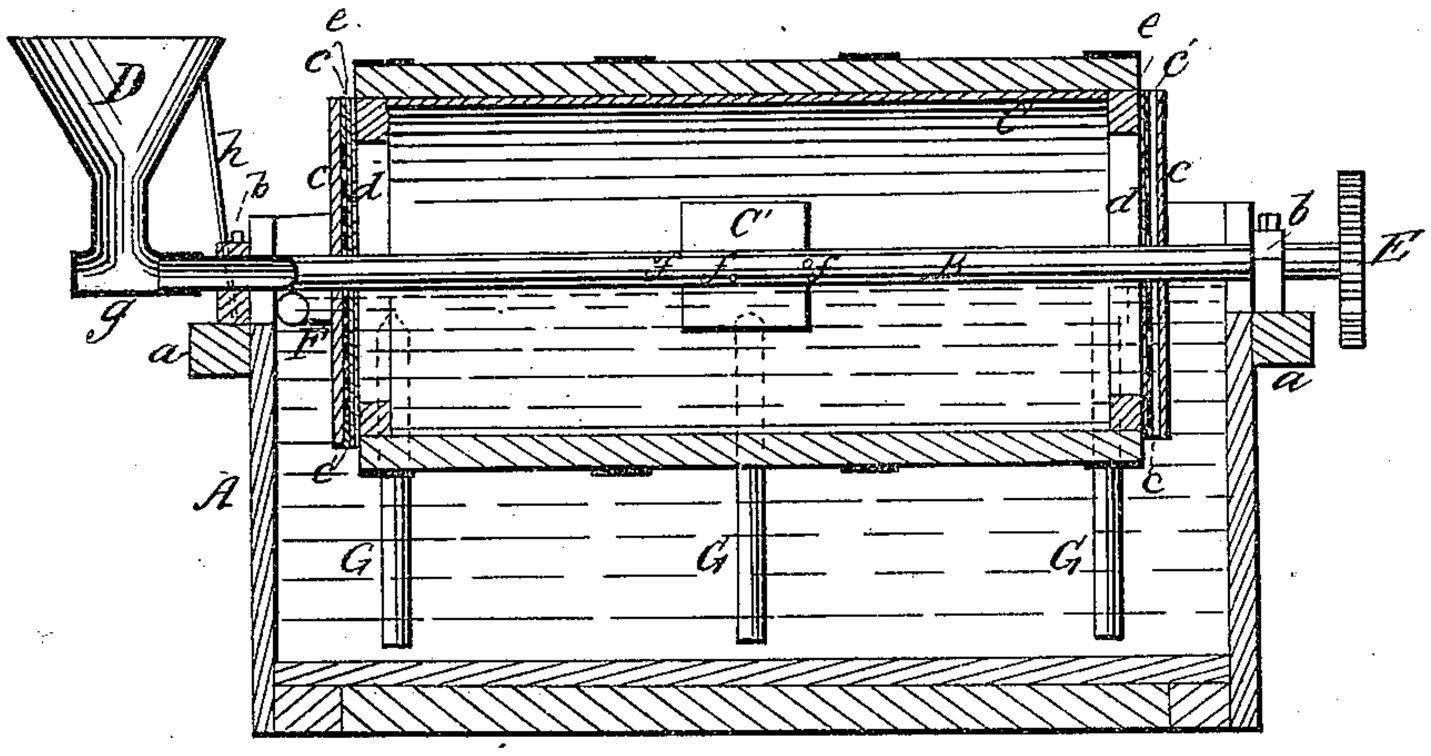
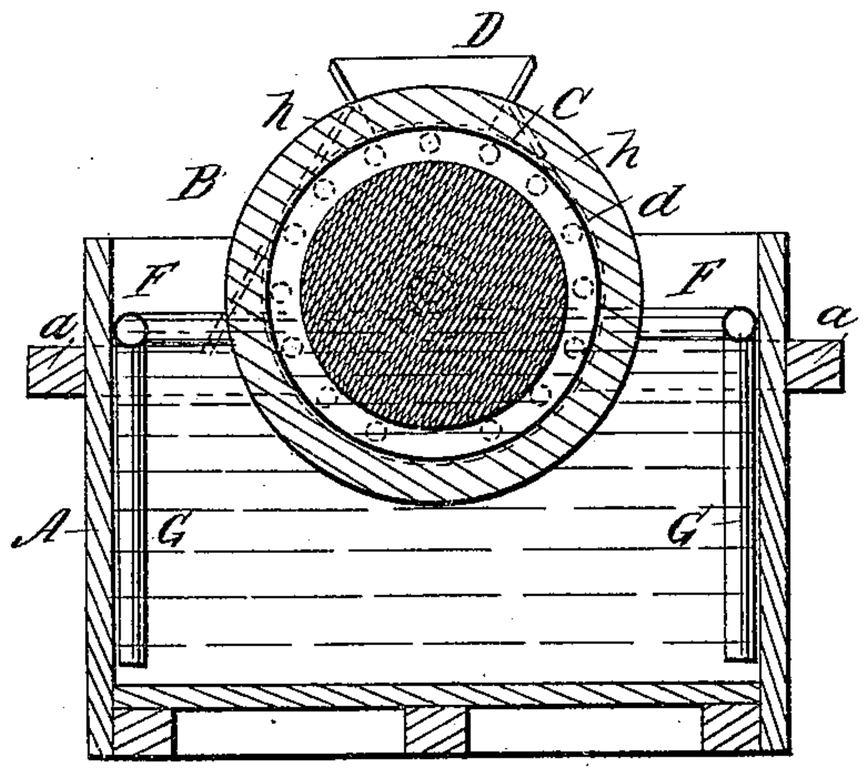


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

DAN R. ERDMANN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED WHITE-LEAD APPARATUS.

Specification forming part of Letters Patent No. **25,106**, dated August 16, 1859.

To all whom it may concern:

Be it known that I, DAN R. ERDMANN, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Apparatus for Manufacturing White Lead; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a vertical longitudinal section of my apparatus. Fig. 2 is a transverse vertical section of the same.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists of certain improvements in the machinery for producing white lead—to wit, a cylinder which rotates in a vat containing water, and both ends of which are closed by means of a double layer of wire-netting with a piece of flannel between them, so that none but the very finest particles of pure white lead can escape from the cylinder, and the vat is furnished with a tube which is carried nearly all the way round on the inside of the vat and near its top, and from which a number of branches extend down nearly to the bottom of the same, the object of this machinery being that the water contained therein is always saturated with a fresh supply of atmospheric air, and that the carbonic acid thus introduced with the air into the water by combining with the metallic lead in the cylinder produces the white lead.

To enable those skilled in the art to fully understand, construct, and use my invention, I will proceed to describe its construction and operation.

A is a vat of rectangular form, constructed of wood sufficiently strong and stout for the purpose and perfectly water-tight, and strengthened by a band which surrounds the vat near its upper edge, and which forms the support for the journal-boxes *b*, which serve as bearings for a horizontal shaft B, which extends beyond the vat on each side, and rigidly attached to this shaft is the hollow cylinder C, which is constructed of wood lined with sheet-lead and open at each end, being fastened to the shaft by means of cross-bars *c*, which unite in the center so as to form a hub in which the shaft can be permanently secured, and attached to each end of the cylinder C by means of rings *c'* is a double sheet of wire-netting *d*, which is folded over a piece of flannel *e*, so that none but the very finest particles can escape from the cylinder. A door C' serves to give access to the interior of the cylinder in order to clear out the impurities remaining in the same, or for the purpose of charging it. One end of the shaft B is hollow and provided with holes *f*, and it extends into a short tube *g*, which connects with the funnel D, through which the fine metallic lead is introduced into the cylinder C, and which is secured to the sides of the vat by means of rods *h*, and attached to the other end of the shaft B is a gear-wheel E, which serves to give motion to the cylinder C.

Fastened in the inside of the vat A and near its top is the tube F, which extends along three sides of the vat, but which may be carried around all four sides, if desirable, and which serves to impregnate the water contained in the vat with atmospheric air, or, more properly speaking, serves to obtain the full benefit of the carbonic-acid gas contained in the atmosphere for the purpose of producing the white lead. The air may be forced into this tube by some device, and in order to distribute it well in the vat and through the whole mass of water a series of pipes G are attached to the pipe F, which are open below and which extend very nearly down to the bottom of the vat.

The operation is as follows: The metallic lead is melted and poured into a cask of water. It then flies into small particles, which are put into the cylinder or drum by the door before the cylinder is rotated and after the cylinder has been started through the hollow shaft B and the cylinder is rotated, and the lead by absorbing the carbonic acid contained in the water forms white lead, and as the pure white lead is very fine it escapes through the wire-gauze *d*, and collects on the bottom of the vat, while all the coarser parts and the metallic lead are retained in the cylinder, and as the water is constantly supplied with fresh carbonic acid introduced into the same, together with the atmospheric air through the tube F, the metallic lead is transformed into white lead without any extra expense and in a very

short time by rotating the cylinder, and by the aid of the wire-gauze *d* it is cleaned and deposited in the vat in a more perfect state than with the ordinary apparatus for the same purpose.

I am well aware that rotating cylinders similar to mine have been before employed for the purpose of cleaning and washing white lead, and I therefore do not claim, broadly, the use of such a cylinder for producing white lead; but

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

A rotary cylinder C, arranged with double wire-nettings *d*, in combination with a vat A, provided with a tube F, substantially in the manner and for the purpose herein specified.

DAN R. ERDMANN.

Witnesses:

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