Charles W. Dwelle.

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Manufacture of White Lead.

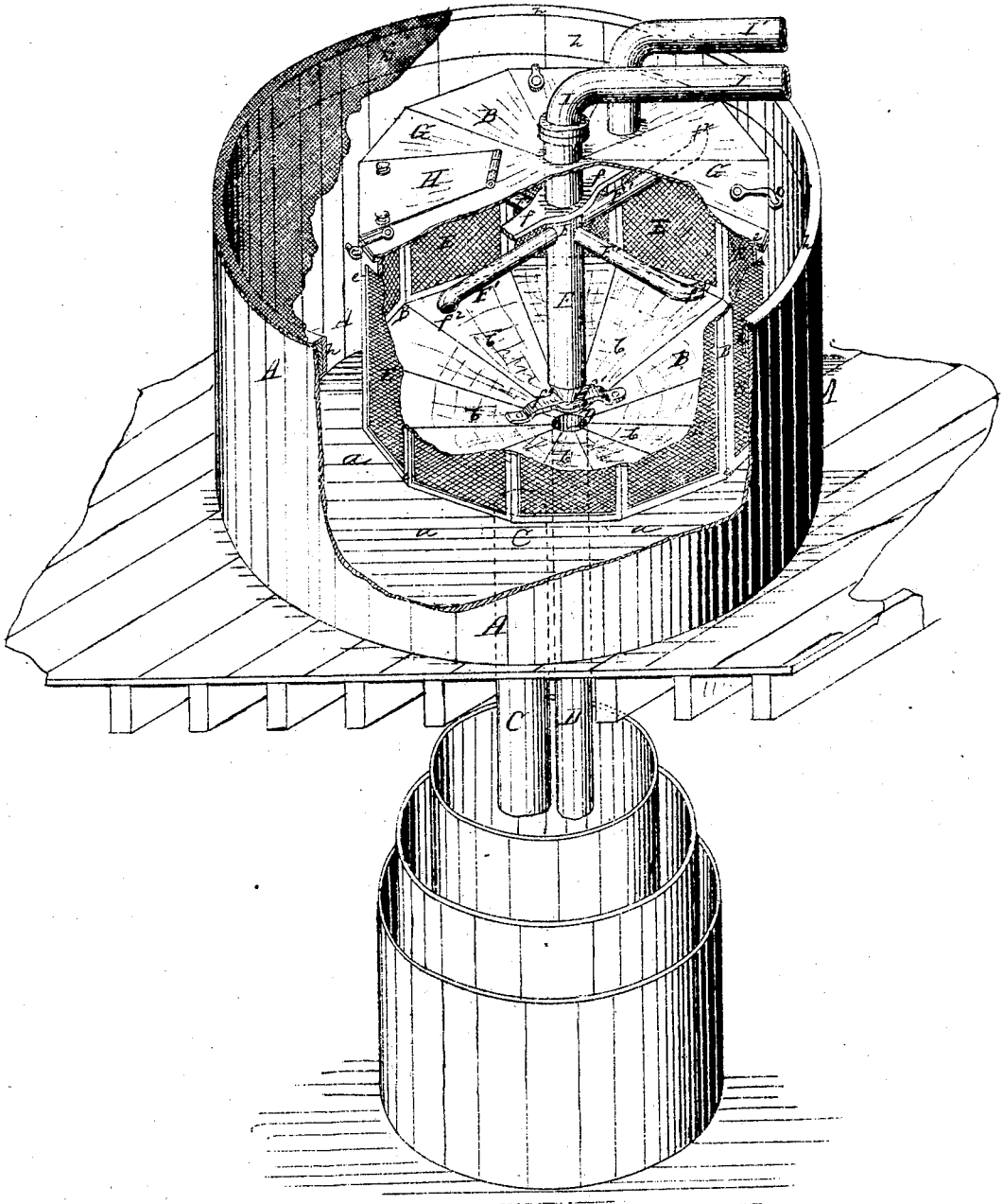

Figure 1

Witnesses:

William H. Kethel

Robert Burns.

Inventor:

Chas W. Dwelle

UNITED STATES PATENT OFFICE.

CHARLES W. DWELLE, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN THE MANUFACTURE OF WHITE LEAD.

Specification forming part of Letters Patent No. **108,571**, dated October 25, 1870.

To all whom it may concern:

Be it known that I, CHARLES W. DWELLE, of St. Louis, in the county of St. Louis and State of Missouri, have made certain new and useful Improvements in Processes for Manufacturing White Lead and similar substances; and I do hereby declare the following to be a full and true description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates, generally, to a construction of cistern, as an improvement to that described in the Letters Patent of the United States issued to me for improvements in the manufacture of white lead, bearing date the 21st day of September, 1869, and being numbered 95,097.

In the use of the cistern constructed and arranged as described in my said Letters Patent, the coarser particles of lead frequently fill and choke the perforations of the pan, preventing the water-supply from reaching and wetting said carbonate received in the cistern, and thus the same would become inoperative and ineffective for one of its principal purposes; also, the carbonate-dust, escaping through the spaces of the falling water, would pass up the annular space formed between the rim of the pan and the cistern-wall, and find its exit through the space intervening between the flange and pan. Said dust thus escaping, besides being a great wastage, would be injurious to the health and difficult for proper manipulation.

To avoid said inconveniences, and, in general, to form an improved cistern, the nature of the improvements here presented is, first, in the construction of a cistern proper, consisting of an inner and outer vessel or "tubs," arranged one within the other, for receiving carbonate; and, secondly, in providing the interior tub with sliding screens or doors of wire-gauze, or other perforated metal suitable, and arranging within said vessel an ordinary reaction water-wheel, or its equivalent, for the more perfect regulation and wetting the carbonate in its passage to the final water-tanks or settling-tubs.

To enable those herein skilled to make and use my said improved cistern, I will now more fully describe the same, referring to the accompanying Figure 1 as a perspective view, having parts of tubs removed to show interior construction of the same and as generally arranged when in use.

My improved cistern consists of the exterior vessel, A, and the interior vessel, B, constructed of any convenient form and material. Each of said vessels or tubs has concave bottoms *a* and *b*, for the better passage of the carbonate and water through the respective discharge-pipes C and D, arranged in direct or indirect communication with the water tanks or receivers.

The interior vessel or "blast-tub," B, I provide with proper screens or perforated sliding doors E, fitted to open and close within the flanges *e*. Any number of said sliding screens may be arranged in the sides of said blast-tub, as deemed preferable. Furthermore, I arrange within the tub B a reaction water-wheel, (known as the "Barker mill,") having its hollow shaft F turning freely in a cross-bearing, *f*, and resting upon a pivot-step, f^1, in manner usual.

The arms F′ I arrange, however, close to the top of the hollow shaft, so that the water escaping at the arm ends dashes down the screens and sides of the tub B.

The cover G, secured to the top of the blast-tub B in a manner to be readily disconnected, has the hinged doors H, to permit the operator to open and close the screen-doors E.

To prevent the air from being vitiated, as well as any undue loss of carbonate-dust which passes into the exterior vessel, A, I have arranged the same with rim-flanges *h*, in which a flannel, *h′*, or other cloth material, may be inserted, so as to entirely inclose the top of said vessel A.

My said cistern is usually arranged at the top of the building, in communication with the distributing-pipes through which the carbonate passes and supply-pipes through which the water passes, to be received in said cistern preparatory to a final discharge in the proper receivers thereof.

The operation of these parts is, therefore, as follows: The carbonate-dust, when carried off the reel, elevator, conveyer-rolls, or other separator device, and taken by the fan, is forced or carried through the rising pipe I into

the blast-tub B. At the same time the weight of the water from the supply-pipe I′ causes, by its pressure, the water-mill F to rotate and distribute the water through the arm ends f^2, so as to wet said carbonate in its passage through the pipe D to the water-tanks.

It will be observed that the perforated sides or screen-doors E of the blast-tub B will always remains open, the dash of the water sufficently preventing any choking action of the carbonate-dust, and that any surplus water and carbonate entering the exterior tub, A, is readily discharged through the pipe C into the series of tubs as final receivers.

Having thus fully described my said invention, what I claim is—

1. A cistern consisting of tubs A and B, when constructed and arranged one within the other, substantially as and for the purpose set forth.

2. The arrangement of the blast-tub B, sliding screens E, reaction water-mill F, cover G, hinged doors H, when combined with the exterior tub, A, having rim-flanges *h*, and cloth covering *h′*, substantially as set forth.

In testimony of said invention I have hereunto set my hand in presence of—

CHAS. W. DWELLE.

Witnesses:

WILLIAM W. HERTHEL,

ROBERT BURNS.