

E. N. TRUMP & J. D. PENNOCK.
 POROUS GRANULAR HYGROSCOPIC MATERIAL.
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1,026,724.

Patented May 21, 1912.

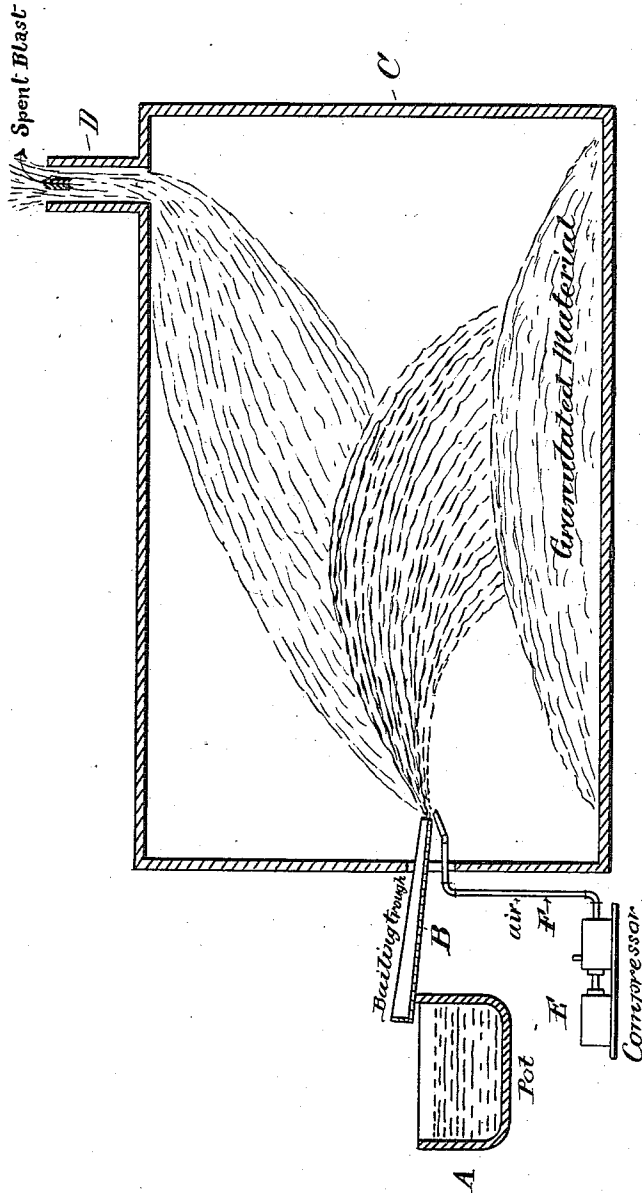


Fig. 1

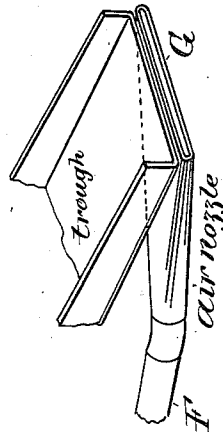


Fig. 2

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UNITED STATES PATENT OFFICE.

EDWARD N. TRUMP, OF SYRACUSE, AND JOHN D. PENNOCK, OF SOLVAY, NEW YORK,
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POROUS GRANULAR HYGROSCOPIC MATERIAL.

1,026,724.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed March 18, 1910. Serial No. 550,236.

To all whom it may concern:

Be it known that we, EDWARD N. TRUMP, residing at Syracuse, and JOHN D. PENNOCK, residing at Solvay, in the county of Onondaga and State of New York, both citizens of the United States, have invented a Porous Granular Hygroscopic Material, of which the following is a specification.

Our invention relates generally to those hygroscopic metallic compounds which are obtained in solid form by cooling so as to solidify a molten mass thereof or crystallize the compounds out of a solution thereof, though in practice we have more particularly applied it to calcium chlorid and caustic soda, in connection with which it has some particular advantages.

Heretofore in the production of compound of this class it has been the practice after having produced, in whatever way, a solution thereof, and brought the same to a high degree of saturation, to permit such solution to gradually cool, whereupon the material crystallizes or solidifies out of the solution. In this manner there is produced a solid mass, or as it is called, a "drum" of the salt or other compound, in which shape such salts are sold in large quantities. In this shape the material, if to be used in solution, is dissolved slowly from the mass, or otherwise is ground or pulverized before entering into solution, as are also compounds of this class, such as caustic soda, when sold in the dry state in small quantities, as for domestic use.

The object of our improvements is to produce such compounds in the first instance in such form that no subsequent pulverization will be required to adapt them for use, and to make them more readily soluble than heretofore. To this end we take the concentrated solution of the salt or other compound to be produced, which may be made in any usual or well known way, at the point where it is ready to be set aside to cool so as to permit the compound to solidify, and instead of gradually cooling the solution, as heretofore, we subject it to the action of a blast of air. The solution by the action of the air blast is blown into drops, or par-

ticles, which are suddenly cooled. As a result the solid material contained in each drop is solidified in an individual mass, and the product takes the form of irregular, small, rounded particles, of convenient size for use, without further manipulation. In this manner not only is the necessity of any pulverization of the product avoided, but the particles are of a more porous structure, and hence are more readily soluble than are such compounds in the form in which they have heretofore been produced.

In the drawings forming a part hereof we have illustrated a form of apparatus which may conveniently be employed for carrying our invention into effect.

Figure 1 of the drawings shows a vertical section of the apparatus, and Fig. 2 an elevation of the air blast nozzle.

Referring to the drawings, A, indicates a pot or tank in which the saturated solution of the material to be produced is contained, and from which a trough, B, leads into a granulating chamber, C, provided with an air outlet, D.

E indicates an air compressor from which a pipe, F, leads to a flat air nozzle, G, extending across the end of the trough B.

The solution is discharged from the pot, A, into the trough, B, in any convenient manner, as by being dipped up in buckets and emptied into the trough, and flows through the trough to the discharge end thereof within the chamber, C. As the solution reaches the discharge end of the trough it is met by a blast of air from compressor, E, and blown into spray or drops which are quickly cooled. Immediately upon the cooling of the solution the contained salt or other compound solidifies and falls to the bottom of the granulating chamber, C, in the shape of small, irregularly-shaped, rounded granules. The granules thus formed are not only of convenient size for immediate use for the purpose to which such compounds are applied; without any subsequent grinding or crushing, but the granules are of a more porous structure, and hence the material absorbs moisture more readily and enters more readily into solu-

tion, than heretofore, the advantage of which, especially in the case of a hygroscopic salt employed for the drying of air or to be used in solution will be readily understood.

What we claim as new and desire to secure by Letters Patent is:

A soluble, hygroscopic, solid compound of a metal in the form of small, rounded, porous granules, formed by the rapid solidi-

fication of the compound from its liquid form.

In testimony whereof, we have hereunto subscribed our names this 28th day of February, A. D., 1910.

EDWARD N. TRUMP.
JOHN D. PENNOCK.

Witnesses:

HARRY E. CLARKE,
HAROLD O. VAN DENBURGH.