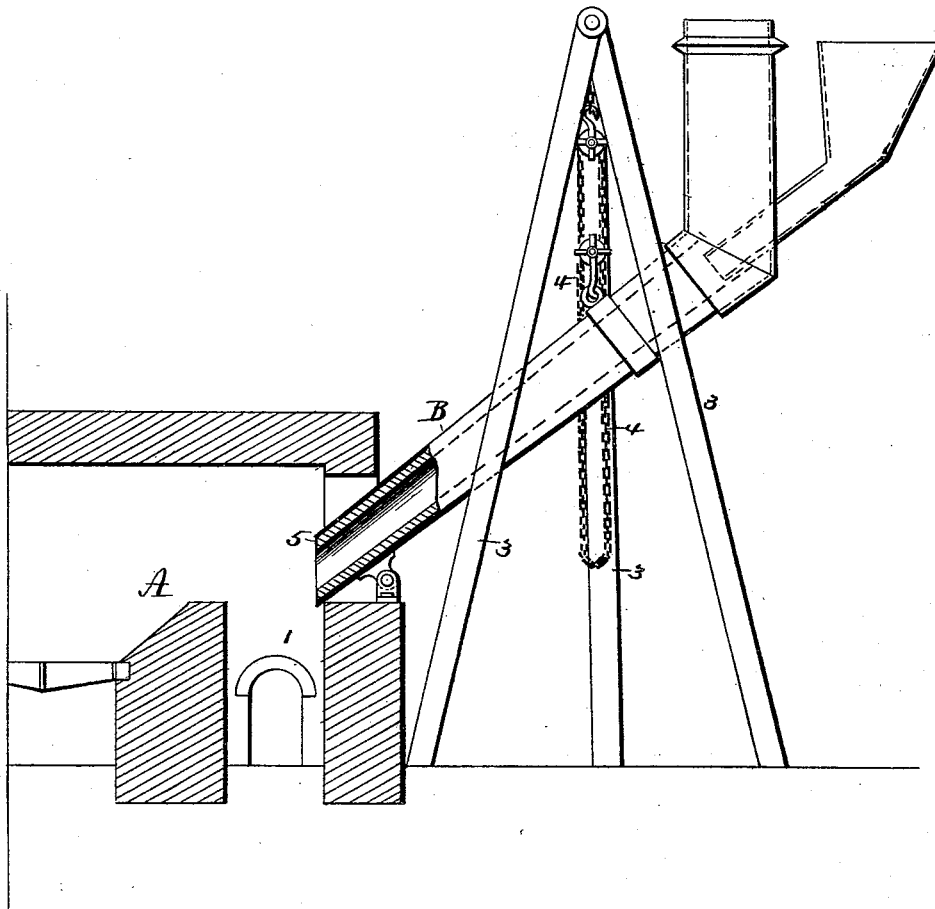


(No Model.)

W. B. CHISOLM.  
PHOSPHATE ROCK DRIER.

No. 479,872.

Patented Aug. 2, 1892.



Witnesses  
*C. H. Mott*  
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# UNITED STATES PATENT OFFICE.

WILLIAM B. CHISOLM, OF CHARLESTON, SOUTH CAROLINA, ASSIGNOR OF  
ONE-HALF TO SAMUEL HUGHES, OF SAME PLACE.

## PHOSPHATE-ROCK DRIER.

SPECIFICATION forming part of Letters Patent No. 479,872, dated August 2, 1892.

Application filed April 9, 1891. Serial No. 388,261. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM B. CHISOLM, a resident of Charleston, in the county of Charleston and State of South Carolina, have  
5 invented certain new and useful Improvements in Phosphate-Rock Driers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which  
10 it appertains to make and use the same.

My invention relates to an improvement in phosphate-rock driers, the object being to make provision for a uniform feed of rock, whether it be in large chunks or small pebbles; and it consists in an adjustable drying  
15 chute or receptacle supported on a tripod or other suitable means, in combination with a furnace adapted to discharge heated air directly into the chute or receptacle to dry its  
20 contents during its descent.

The accompanying drawing is a longitudinal sectional view of my improved drying apparatus.

A represents the furnace employed. This  
25 is of any convenient construction, it being provided in its rear end with a passage 1, into which the rock is discharged from the chute or receptacle.

B indicates this chute or receptacle, it consisting, preferably, of a pipe lined with firebrick. It may be suspended in various ways, the end to be attained being simply to hold it securely in place and allow for adjustment to different inclinations, according to the size  
30 of the rock. Considerable cant is required for large chunks of rock, because they are less inclined to slide or roll freely down the chute or receptacle; but for smaller grades—such as the Florida rock—a much less degree  
35 of inclination is required. It is with the purpose of accommodating this chute or receptacle to these different grades of rock that I have devised my present invention.

Generally I have adopted a tripod 3 and  
45 chain 4 as being simple, convenient, and ef-

fective. The inner end 5 is preferably permanently supported at the rear of the furnace and the opposite end only is vibrated or adjusted as occasion demands it. The material is thoroughly dried as it descends in contact with the direct blast of hot air from the  
50 furnace.

The feed is entirely regulated by the slant of the chute or receptacle and the material may be fed in at any convenient point from  
55 above. The products of combustion can be conducted off through a suitable stack connected with the outer end of the chute or receptacle.

It is evident that slight changes might be  
60 resorted to in the construction and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; 65  
but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a furnace or other  
70 heater, of a non-rotary combined chimney and chute hinged in proximity to the furnace or heater and adapted to receive the products of combustion therefrom and carry the material being treated downward toward the furnace, 75  
substantially as set forth.

2. The combination, with a furnace or other heater, of a non-rotary chimney and chute hinged in position to receive the products of combustion from the furnace or heater, a hop-  
80 per delivering into this chimney, and means for regulating the inclination of the chimney, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib-  
85 ing witnesses.

WILLIAM B. CHISOLM.

Witnesses:

W. F. TAYLOR,  
V. E. HODGES.