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 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 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 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 contents during its descent.

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

A represents the furnace employed. This 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, 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 of the rock. Considerable care 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 of inclination is required.

Generally I have adopted a tripod 3 and chain 4 as being simple, convenient, and effective. 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 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 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 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.

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 heat, 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, 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 hopper 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 subscribing witnesses.

WILLIAM B. CHISOLM.

Witnesses:

W. F. TAYLOR,

V. E. HODGES.