

UNITED STATES PATENT OFFICE.

WILLIAM LAMPOS GREGG, OF PHILADELPHIA, PENNSYLVANIA; HARRIET LOUISE GREGG EXECUTRIX OF SAID WILLIAM LAMPOS GREGG, DECEASED.

PROCESS OF MAKING SLATE BRICK.

SPECIFICATION forming part of Letters Patent No. 451,818, dated May 5, 1891.

Application filed June 21, 1890. Serial No. 356,280. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM LAMPOS GREGG, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in the Process of Making Brick from Slate; 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 consists of an improved process of making brick or other articles from slate and from the refuse of slate-mines. In using this material great difficulty has been experienced heretofore in reducing the slate to a sufficiently fine and powdered condition without great waste and trouble and in reducing the powder when obtained to a proper homogeneous and plastic condition, and in consequence of these drawbacks to thoroughly press, dry, and burn the same. The object of my invention is to remove these difficulties and to make a smooth, solid, homogeneous, merchantable brick from this material.

To these ends my process is as follows: The material is first passed through a breaker to reduce it in size, and is passed from this breaker by an automatic device or elevator into a disintegrating-mill, which reduces it to an impalpable powder. This powder is passed through a revolving screen, and the tailings are passed again through the mill. The material is thus pulverized in a dry state, and is then passed into a pug-mill or tempering-machine, where a certain amount of water is added and the whole manipulated and worked into a homogeneous mass. This mass, now in a stiff plastic state, is then passed into another beating-machine, which separates all the particles and thoroughly distributes the moisture through the mass. Owing to the precise amount of moisture being disseminated throughout the whole plastic mass, these brick

are susceptible of being and are set directly from the machines to the burning kiln and are burned. The beating of the material after leaving the pug-mill, where it comes out in various-sized balls with various degrees of moisture, is the prime element in rendering the mass homogeneous with the moisture evenly distributed, so that it is susceptible of making not only a highly-finished but an exceedingly strong brick when it leaves the machine, ready to be set in the kiln for burning. The beating-machine is a centrifugal mill provided with cages and arms or beaters. The material is then passed into the agglomerate or pressing machine. After the brick are pressed they are taken directly to the burning-kiln, preferably of the downdraft type.

I am aware that it is old to make brick, tile, and piping from slate by pulverizing, tempering molding, and finally burning it; but I have changed this process in the important particulars of screening the slate after it is pulverized, regrinding the tailings, and beating the mass after the same is worked into a plastic condition, so as to render the article produced more homogeneous, tougher, smoother, and of better color and appearance.

What I claim is—

The process of manufacturing brick or other articles from slate, consisting in first breaking the slate to reduce it in size; second, grinding it to a powder; third, screening the powder; fourth, regrinding the tailings; fifth, tempering the powder so reduced with water; sixth, working the same into a homogeneous stiff plastic mass; seventh, beating the mass to separate all the particles and distribute the moisture through the same; eighth, molding the mass into the desired forms, and, ninth, burning the same.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM LAMPOS GREGG.

Witnesses:

R. M. GREINER,
GEORGE W. SWIFT.