

UNITED STATES PATENT OFFICE.

ROBERT BRYCE, OF LOUISVILLE, KENTUCKY.

MANUFACTURE OF HYDRAULIC CEMENT.

SPECIFICATION forming part of Letters Patent No. 315,711, dated April 14, 1885.

Application filed March 14, 1885. (No specimens.)

To all whom it may concern:

Be it known that I, ROBERT BRYCE, a subject of the Queen of Great Britain, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in the Manufacture of Hydraulic Cement, of which the following is a description.

My invention consists in an improved process of manufacturing hydraulic cement whereby an economy in the production of the same is attained.

In carrying out my invention I use the substance known to geologists as "Grayson" or "Leitchfield" marl or shale, which has not heretofore been employed for this purpose, and of this marl I make a mixture of five parts of the same with eleven parts of pure limestone. If the limestone is not pure, a greater quantity must be used, according to the amount of lime contained therein. These materials are ground up together, and being of similar texture can be mixed before grinding into the powder technically known as "compo." Herein my process also differs from the ordinary one. With other materials the mixing takes place after the reduction to powder. The advantage I claim for grinding both materials together is the better incorporation of the ingredients than is possible in the old process of grinding the materials separately and mixing them afterwards. After the materials are thoroughly mixed and ground in accordance with my process they are slightly impregnated with moisture in the form of steam

or fine spray to an extent not exceeding fifteen per cent. This is also a distinguishing feature of my invention in contrast to the large amount of water used heretofore, which makes a plastic mass. The limited amount of moisture in my process is barely sufficient to enable it to adhere to be made into bricks under the powerful pressure of a hydraulic brick-machine, and the bricks when so made are dry enough to be placed in the kiln direct, thus doing away with the delay and expense of drying-floors, which are used in the wet process. After the bricks are burned they are then ground up into the powder which constitutes the cement.

Having thus described my invention, what I claim as new is—

1. The process of manufacturing hydraulic cement, which consists in grinding together limestone and Leitchfield marl or shale in about the proportions described, then compressing it into bricks, and burning and grinding said bricks, as set forth.

2. The process of manufacturing hydraulic cement, which consists in grinding together limestone and Leitchfield marl or shale in about the proportions described, then dampening the same, as described, and compressing it into bricks and immediately burning and grinding said bricks, substantially as and for the purpose described.

ROBERT BRYCE.

Witnesses:

WM. W. THUM,

ARTHUR M. RUTLEDGE.