

UNITED STATES PATENT OFFICE.

WILLIAM S. SAMPSON, OF NEW YORK, N. Y.

IMPROVEMENT IN METHODS OF PRESERVING LIME.

Specification forming part of Letters Patent No. **155,043**, dated September 15, 1874; application filed June 19, 1874.

To all whom it may concern:

Be it known that I, WILLIAM S. SAMPSON, of the city, county, and State of New York, have invented a new and useful Improvement in Preserving and Packing Lime and Cement by means of compression, of which the following is a specification:

To all who are familiar with the character of lime and cement it is well known that they, especially lime, absorb moisture from the air with great rapidity, and that, in consequence of this absorption, the volume is increased to an extent which soon ruptures the barrel. This absorption of moisture from the air, technically termed "air-slaking," also soon destroys the grade of the lime and greatly reduces its merchantable value and condition. To overcome and prevent this air-slaking and consequent loss, and to effectually preserve the lime and raise its character up to the standard of a staple article of commerce, is the aim and object of my invention.

In carrying out my improvement I compress (by means of any of the well-known presses of great power) the lime into the package or barrel in which it is to be stored and transported, until the contents of the package become nearly a solid mass, approaching somewhat the condition of a stone or of the limestone prior to its being burned. This effectually excludes all air (practically speaking) and consequent moisture from the interior of the mass. This process prevents air-slaking and thus preserves the lime to an indefinite period. The entire package of lime thus treated—it being originally in lumps of various sizes as well as partially powdered—becomes what is known as "lump lime," which is the highest grade of the commodity. This process of treatment also raises the inferior grades of lime up to the highest standard.

It will be understood that this treatment of lime takes place at the kiln where burned, before any deterioration of the powdered and small lumps has occurred by exposure. It is also my intention to apply my mode of treatment to lime which has been stored in yards for some time and become injured by exposure, thus preventing any further deterioration.

The results of my method of treatment are as follows: First, and the most important, the preservation and maintenance of the merchantable condition of lime to an indefinite period of time; second, a great reduction in the number of barrels required to hold the same number of pounds; third, the better preservation of the barrel itself, in consequence of the solid character of its contents, bursting of the barrel being impossible; and, fourth, saving in contents of the barrel in transportation and handling, there being no leakage.

While my improvement is particularly designed for the preservation of lime, it has been found that cement and plaster may also be submitted to a like treatment with similar relative results. In the case of cement, the lining of the barrels with paper to prevent leakage is obviated, this in itself being a great saving.

It may be remarked that compressing lime to any degree of solidity does not change its chemical character in any respect, and when used it readily yields to the action of water, as is the case with the ordinary lump lime. A hydraulic press, screw, cam, lever, roller, or other power may be used for the application of the pressure, as may be the most convenient. The barrel or package itself is placed within an adjustable clamp, holding all its parts in rigid position and without strain during the process of compressing.

For the purpose of carrying out my invention, I have designed a clamp and press combined, adapted for compressing with great rapidity, by power or by hand, which I purpose making the subject of a subsequent patent.

I claim—

As a new and improved article of commerce, a package of compressed lime, as herein described and set forth.

WM. S. SAMPSON.

Witnesses:

A. L. MUNSON,
W. S. SAMPSON, Jr.