

United States Patent Office.

PATRICK N. MACKAY, OF VIRGINIA CITY, NEVADA.

Letters Patent No. 100,167, dated February 22, 1870.

IMPROVEMENT IN ROOFING AND FLOORING.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, PATRICK N. MACKAY, of Virginia City, county of Storey, in the State of Nevada, have invented an Improved Fire, Water, and Rat-Proof Flooring and Roofing Compound; and I do hereby declare that the following is a full description of my process, together with the various materials or substances employed in forming my said compound, with the proportion or quantity of each to be used in the preparation of the same.

My invention consists in using fire-clay, first by itself and afterward in combination with asphaltum or any other mineral tar or pitch, with a certain proportion of peroxide of manganese.

The following is the process of manufacturing and applying the materials:

First, the fire-clay must be reduced to powder by grinding, then kneaded with water to a pasty or plastic consistency. To two-thirds or three-quarters of this plastic mass must be added one-third or one-quarter of ground fire-clay, burnt or dried in a kiln, in order to counteract too great a contraction of the mass. The fire-clay being now ready, it is laid on the floor or roof, so as to give thickness of one inch when dry. The floor may be of boards, or slits of wood, or iron. When the fire-clay is properly dry it presents the appearance of an unburnt fire-clay tile, one inch thick, of the dimension of the floor or roof.

Second, as soon as the fire-clay floor or roof is perfectly dry, I cover the same with a composition of fire-clay and asphaltum or mineral tar or pitch and peroxide of manganese, of the thickness of one-half inch, made in the following manner:

Third, the fire-clay must be ground to a powder, which can be done in a common pug-mill, and thoroughly burnt or kiln-dried, so as to expel the water of combination. In this dry state it is ready for use.

Fourth, the asphaltum or mineral tar ought to be analyzed previous to use, in order to ascertain the amount of sand or other impurities which it contains, for the purity of the asphaltum or pitch determines the quantity required.

Fifth, the peroxide of manganese is used in the proportion of about two and one-half per cent. of the weight of the asphaltum employed in the combination. When the manganese is applied at the proper moment it liquefies the asphaltum and facilitates the incorporation of the prepared and dried fire-clay.

Sixth, to make the combination of the asphalt, mineral tar, and fire-clay, put into a cast or wrought-iron vessel the proper proportion of asphalt broken into small pieces, say twenty-five to thirty parts of asphalt, mineral tar, or pitch, to seventy or seventy-five pounds of burnt and pulverized fire-clay which has been previously deprived of its water of combination. If the asphalt is free from impurities, such as sand, &c., this manner of combination is employed; but if it contains impurities, some mineral tar or pitch must first be melted in the vessel, then the broken pieces of asphaltum are thrown in, and the contents boiled until liquid.

Peroxide of manganese in the proportion of two to two and a half per cent. of the weight of asphaltum used is then introduced. The whole mass is well stirred, at the same time sifting in the powdered and burnt fire-clay, and stirring the mixture quickly and thoroughly until the whole is incorporated into a homogeneous mass. While hot it must be poured or ladled out upon the previously-prepared foundation of fire-clay. It is then spread to the thickness of half an inch, and hot smoothing-irons run backward and forward to give it a smooth surface and the desired thickness.

Suitable iron bars may be placed on one side of the melted mixture, in order to gauge the proper thickness.

When perfectly cool the mixture hardens, and is proof against fire, water, or acids of any kind, and protects the floor or house against rats, &c.

For roofs, it must be laid with a pitch of one inch to the yard, so that rain or water can flow off, but it is so impervious to water that the latter may be allowed to remain upon it for years if necessary.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

A flooring and roofing compound similar to that herein described, when composed of the ingredients above enumerated, mixed and compounded in about the manner and proportions described.

In witness whereof I have hereunto set my hand and seal.

PATRICK N. MACKAY. [L. s.]

Witnesses:

GEORGE SPAULDING.
WM. GERLACH.