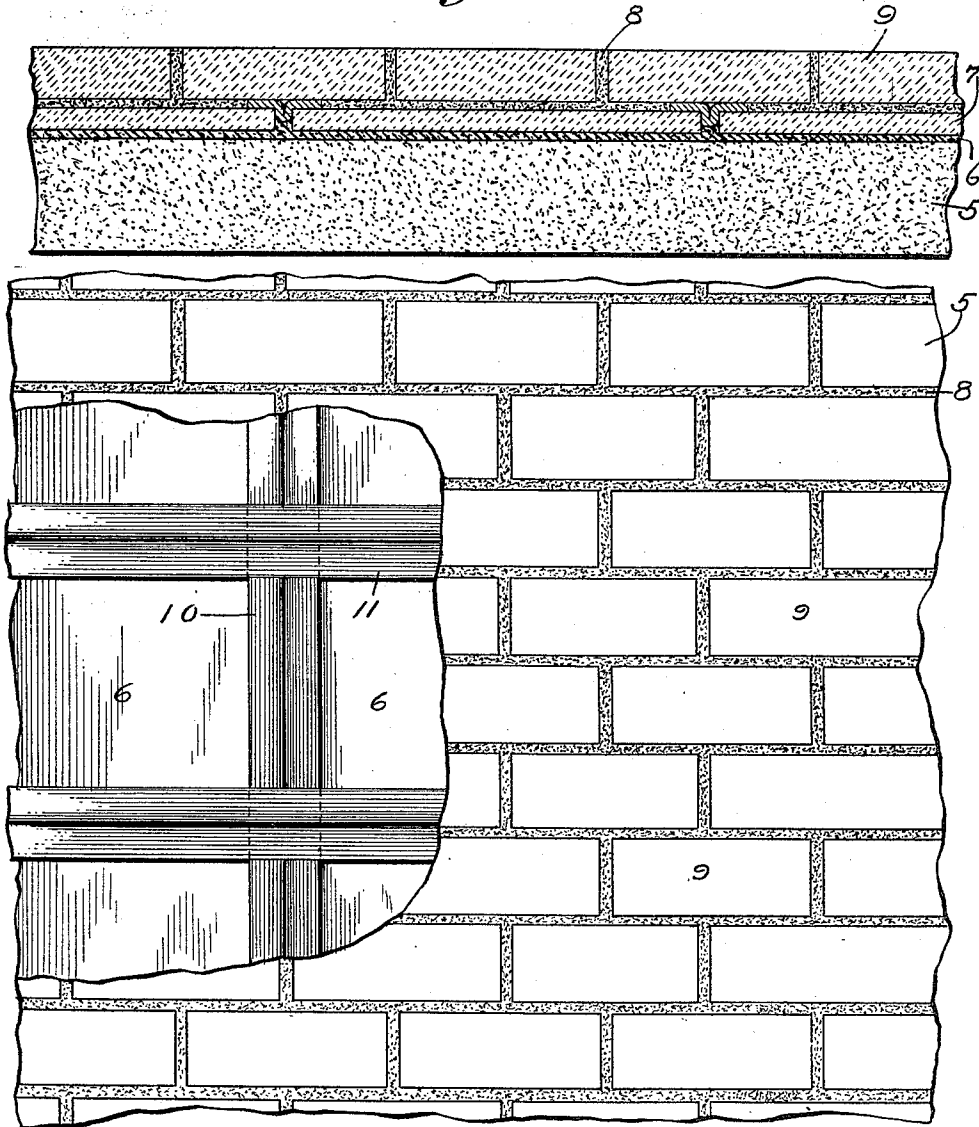


H. J. LIVINGSTON.
PROCESS OF MAKING CONCRETE WORK PERMANENTLY WATER TIGHT.
APPLICATION FILED OCT. 27, 1910.

1,008,975.

Patented Nov. 14, 1911.

Fig. 1.



Witnesses:

James M. ...
...

Fig. 2.

Inventor:

Henry James Livingston

UNITED STATES PATENT OFFICE.

HENRY JAMES LIVINGSTON, OF BALTIMORE, MARYLAND.

PROCESS OF MAKING CONCRETE-WORK PERMANENTLY WATER-TIGHT.

1,008,975.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed October 27, 1910. Serial No. 589,470.

To all whom it may concern:

Be it known that I, HENRY JAMES LIVINGSTON, a British subject, residing at Baltimore, in the State of Maryland, have invented a new and useful Improvement in Processes of Making Concrete-Work Permanently Water-Tight, of which the following is a specification.

My process consists in introducing into the interior of floors or walls of work of this class a layer of indestructible and impermeable materials which prevent the passage of water or moisture through the protected wall or floor. For this purpose I confine myself to the use of slate with lead covered joints and the special mortar necessary to attach the layer to the walls, making it an integral part of the fabric, as shown in the accompanying drawing in which—

Figure 1 is a transverse section of a wall embodying my invention, and Fig. 2 is an elevation thereof with the facing partly broken away to show the lead joints.

In the drawings, 5 designates the masonry work, 6 my bond and 7 the course of slate.

The joints of the slate are overlaid with the lead strips 10 and 11. Over the slate and strips is ordinary mortar 8 in which the facing 9 here shown as tiles is embedded.

When the first thickness of concrete has been laid for a floor I embed a flat layer of roofing slates thereon laid in annealed cement mortar, carefully covering all joints and interstices with strips of thin sheet lead which are held in place by a paste of annealed cement. Over this layer is laid the remainder of the concrete, or its equivalent in bricks, forming the completed thickness

of the floor which now contains an indestructible and impermeable barrier to the passage of any water or moisture. Further the work is now homogeneous monolithic and not in separate pieces. In walls or arches the process is similar. I use annealed cement (U. S. Patent 777,794 1904) and the variety thereof known to cement workers generally as "Living stone" for attaching the slates to the first laid part of the floor or wall because of the lack of cohesion between it and ordinary mortar. To do otherwise would result in the completed work being neither homogeneous nor monolithic, but structurally weak, being in two thicknesses liable to separate and tear away the above described protecting layer. The term concrete also applies to and includes brick or stone work the only difference being that when these materials are used on both sides of the slates, etc., annealed cement is not so indispensable.

I am aware that lead has been used for exterior flashing on slate roofs and I do not claim such a combination broadly, but I am not aware that the ingredients of my combination have ever been used together.

I claim—

An interior damp-proof course for masonry work comprising a layer of annealed cement, butt-joined roofing slate, and sheet lead cemented over the said joints with annealed cement.

HENRY JAMES LIVINGSTON.

Witnesses:

E. C. DOYLE,
MACD. GARRETTSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."