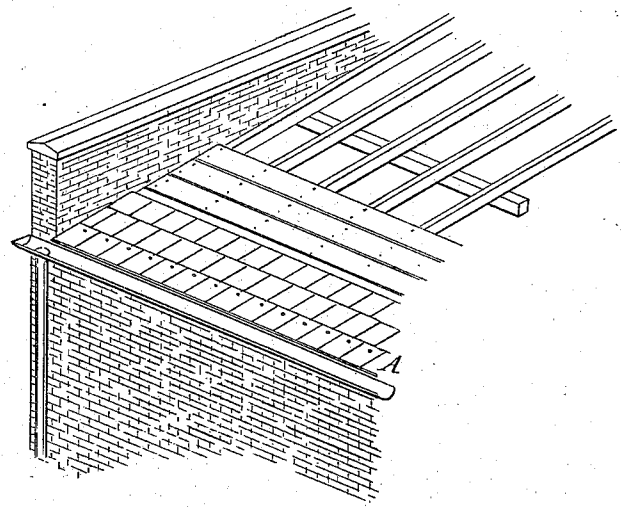
(No Model.)

# J. BUSHEY & R. WOODCOCK.

## Tile Roofing.

**No. 237,244.** **Patented Feb. 1, 1881.**




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JOSEPH BUSHEY AND RICHARD WOODCOCK, OF DETROIT, MICHIGAN.

## TILE ROOFING.

SPECIFICATION forming part of Letters Patent No. 237,244, dated February 1, 1881.

Application filed October 8, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH BUSHEY and RICHARD WOODCOCK, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Tile Roofing, of which the following is a specification.

The nature of our invention relates to new and useful improvements in the construction of tile roofs, which will be perfectly weather-proof and water-tight, without the necessity, as is ordinarily the case, of having the tiles composing the roof-covering laid in courses, the upper courses overlapping the lower.

The invention consists in the construction of a roof as more fully hereinafter described.

In the accompanying drawings, which form a part of this specification, A represents a course of tile laid at the lowest point of the roof, and secured to the roof-boards by means of nails or screws, or in any other suitable manner. These tiles are rectangular in form, made from clay, about half an inch thick, and burned like brick.

On roofs of moderate dimensions and with the ordinary pitch it will be found unnecessary to secure only the lower course of tiles. The rest of the roof is then covered with similar tiles, in regular courses, preferably, and without overlapping.

In large roofs, or in those with a very steep pitch, it may be found necessary to nail or otherwise secure one or more of the intermediate courses to the roof-boards.

In making the tiles holes should be made in them, before burning, for the purpose of receiving the nails; but the tiles for the unsecured courses should not be perforated.

After the roof is covered with tiles, as described, a coating of cement, consisting of the following ingredients, and substantially in the following proportions, is applied to the entire surface of the tiles on the roof: Mix thoroughly together one gallon of gas or pine tar, one gallon of pulverized quicklime, one gallon of sand, and one ounce of pulverized copperas. Under conditions of heat this can readily be done, and the compound will be more easily applied and spread upon the roof when heated, although this is not an essential method of applying it. By the introduction of pulverized copperas (sulphate of iron) into the mixture the sulphuric acid of the copperas unites with the lime, forming gypsum, or sulphate of lime, and oxide of iron is produced, which has the effect of drying and hardening the cement. After this cement is applied to the tile it is "boiled" into the tile by passing over it a highly-heated iron or roller. This compels the filling of all the interstices between the tile, and "stuffs" or fills the pores of the tile, thereby making one solid sheet of fire and weather proof roofing.

If a higher polish is desired than will be had by the use of the above-described cement, Roman or Portland cement may be employed instead of the quicklime.

We are aware that a roofing-cement composed of coal-tar and pulverized coke, to which salt or alum is added during the boiling process in small quantities, to act as a flux, causing the tar to boil, has heretofore been employed in conjunction with a small quantity of lime, and we therefore lay no claim to such composition of matter, which differs from ours in that we employ copperas, in lieu of alum, which does not act as a flux, but produces oxide of iron, which has the effect of drying and hardening the cement—a result not attained by the use of alum.

What we claim as our invention is—

1. A composition of matter for roofing purposes, consisting of gas-tar, quicklime, sand, and copperas, mixed, while hot, in about the proportions herein set forth.

2. A roof composed of non-overlapping tiles covered by a cement composed of gas-tar, quicklime, sand, and copperas, mixed, while hot, in about the proportions herein set forth, and "boiled" into the crevices of the roof, substantially as described.

JOSEPH BUSHEY.
RICHARD WOODCOCK.

Witnesses:
H. S. SPRAGUE,
A. WAHL.