

# UNITED STATES PATENT OFFICE.

RUFUS S. MERRILL, OF WAKEFIELD, MASSACHUSETTS.

## FABRIC ROOFING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 437,033, dated September 23, 1890.

Application filed December 24, 1889. Serial No. 334,847. (No specimens.)

*To all whom it may concern:*

Be it known that I, RUFUS S. MERRILL, of Wakefield, in the county of Middlesex and State of Massachusetts, have invented certain  
5 new and useful Improvements in Fabric Roofing Material, of which the following is a specification.

My invention relates to that class of roofing material usually known as "fabric roofing."

10 The roofing material made by me consists of a woven or textile fabric or felted cloth saturated with and covered on both sides by coal-tar or the like—such as pine-tar, in which  
15 has been incorporated infusorial or diatomaceous earth in sufficient quantity to produce a cement which will render the cloth waterproof and practically fire-proof. It is this  
20 feature which mainly characterizes my invention. The coal-tar or the like waterproof the cloth and prevents decay, while the infusorial earth keeps the material from being ignited  
25 by sparks, &c., thus rendering it practically fire-proof. This infusorial earth not only is very cheap, but is comparatively much lighter than other materials heretofore used for analogous  
30 purposes, (for example, a barrel of such earth weighing seventy pounds as against a like-sized barrel of powdered soapstone, which will weigh about two hundred and fifty  
pounds,) and is most efficient in the connection in which it is used.

Varying proportions of the tar and infusorial earth can be used, and I do not desire to be understood as limiting myself to any specific proportions. In practice I find that very  
35 good results are obtained by taking twenty-five parts of the infusorial earth to seventy-five parts of the tar. These ingredients are thoroughly mixed together, and by the application of heat the mixture is brought to the  
40 fluid consistency suitable for a bath in which the fabric can be treated. The cloth or fabric is drawn through this bath and the excess of liquid composition is squeezed out from it  
45 afterwards by passing it between pressure-rolls. I then pass the cloth thus treated through what may be called a "dust bath," composed of pulverulent infusorial earth, which  
50 then hung up, and as soon as the infusorial

dust thus applied has absorbed all of the liquid tar it can the dust bath is repeated, and so on until the desired absorption of the liquid tar has been obtained. Usually two applications of the dust bath will suffice. After  
55 the cloth has been thus finished and is ready for the market I roll it up in rolls, and while doing this I sift or spread over the surface a coating of powdered absorbing material, which preferably is the diatomaceous earth  
60 already referred to, but, if desired, may be soapstone, plumbago, clay, slate stone, silicate, magnesia, or similar substance in sufficient quantity to prevent the layers from sticking  
65 together. This coating I roll up with the cloth, where it is held in place by the compactness of the roll, thus enabling those who afterwards use the roll to unroll it easily, and at the same time to handle it and put it down  
70 on the roof without sticking up or soiling the hands. This last feature is applicable generally to fabric roofing treated with sticky compositions having a tarry base.

I am aware that porous paper has been coated on one side first with a liquid or semi-  
75 liquid layer or a composition composed of asbestos, soapstone, and coal-tar, and next with a layer of dry asbestos or soapstone, or both, the two layers, together with the backing of porous paper, being subsequently compacted  
80 by pressure.

I am also aware that a composition felting has been made by saturating a bat of animal or vegetable fibers with a composition of oil, rosin or pitch, and mineral substances or  
85 silica. I claim neither one of these things.

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

As a new article of manufacture, a roofing material composed of a fabric saturated and  
90 covered on both sides by a flexible cement composed essentially of infusorial or diatomaceous earth and coal-tar or the like, substantially as hereinbefore set forth.

In testimony whereof I have hereunto set  
95 my hand this 23d day of December, 1889.

RUFUS S. MERRILL.

Witnesses:

EWELL A. DICK,

WILLIAM H. SHIPLEY.