(No Model.)

D. HARGER.

ROOFING.

No. 348,844. Patented Sept. 7, 1886.

FIG. 1.

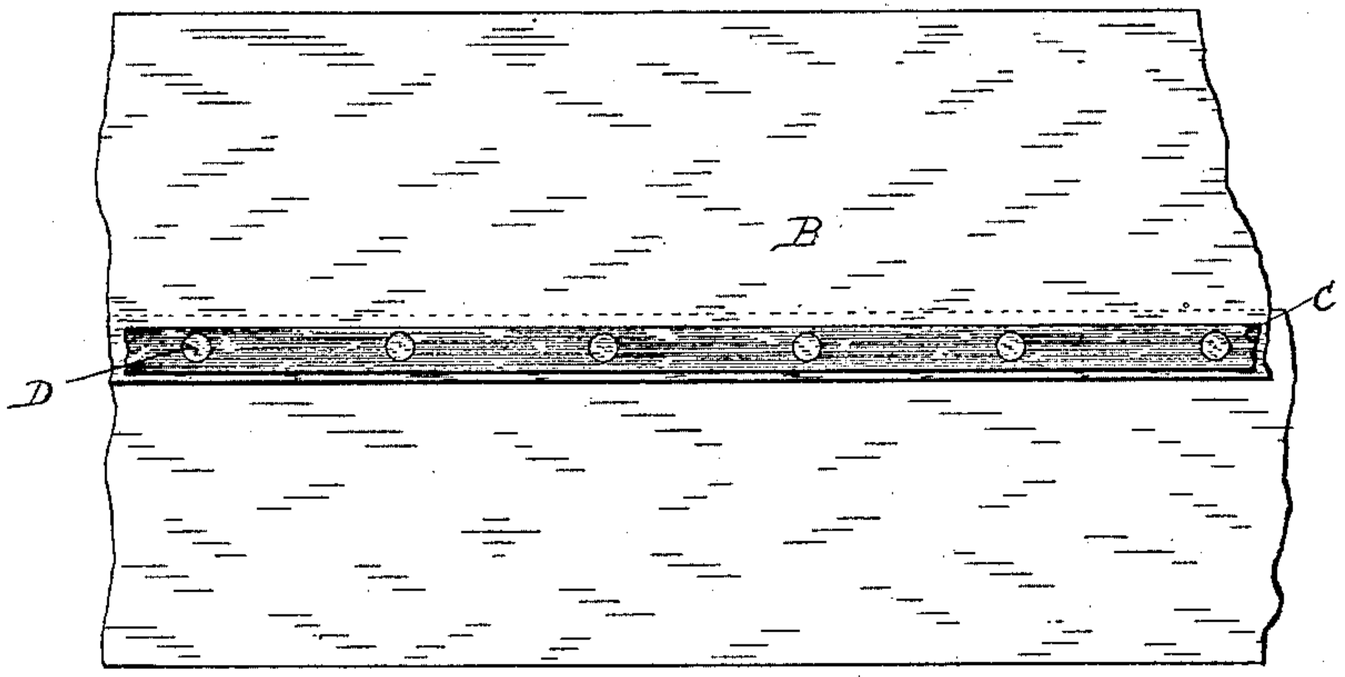


FIG. 2.

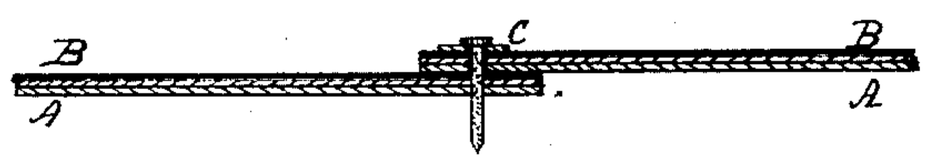
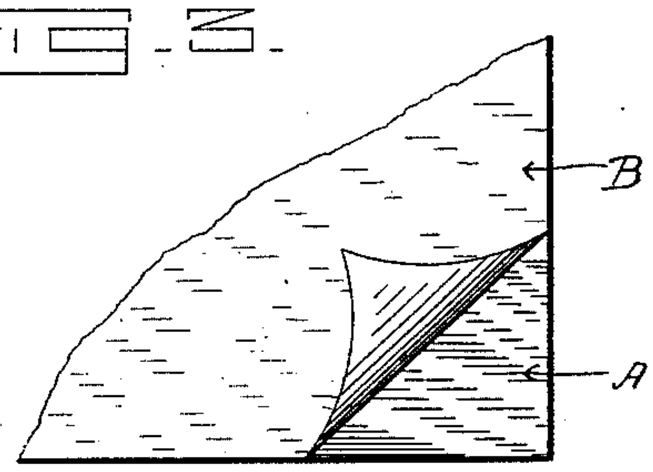


FIG. 3.



Witnesses

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DAVID HARGER, OF DES MOINES, IOWA.

ROOFING.

SPECIFICATION forming part of Letters Patent No. 348,844, dated September 7, 1886.

Application filed March 8, 1886. Serial No. 194,472. (No model.)

To all whom it may concern:

Be it known that I, DAVID HARGER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Roofing; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to roofing material, and has for its object the provision of a material for this purpose which shall possess all the qualities desirable for this purpose, will not crack nor slip, and will not rot out, requires no addition of gravel or sand on top, and is light and perfectly pliable.

In manufacturing my roofing material I unite two or more layers of felt, paper, asbestus, or any of the usual roofing materials made water-proof, and while they are still in a very pliable condition and the cementing material which unites them and waterproofs them is still soft, but after being rolled together, I unite to these, by passing with them through squeezing-rolls or in any other convenient manner, a sheet or thickness of cotton or muslin, either prepared in any suitable manner with waterproofing material or in its natural condition as purchased on the market. This cotton or muslin will be firmly united to the other materials and form an integral part of the roofing fabric. It will be cut to the same size as the pieces of material to which it is to be attached, and there will be no overlapping or projecting edges.

Cloth or textile materials have been used in roofing in various ways. One instance shows alternating layers of the paper or other materterial and the textile fabric, and with a layer of such textile material on top; but in said instance the cost of the roofing material is very much enhanced by the presence of the addition and unnecessary layers of cloth, and at the same time the intermediate layers will rot out and rot and weaken the paper, asbestus, and other material composing the alternate layers, while, when the cotton or muslin is upon the upper surface alone no such result will ensue, as the cotton is then on the exposed surface to receive the coat of protective paint, which will preserve it against decay. Cloth is an entirely different and more expensive and less durable material than cotton or muslin. In another instance of which I am aware a thickness of textile material is superposed upon a layer of some tarry or gummy substance laid upon the ordinary paper or felt roofing material, the edges of the cloth or textile extending out beyond said layer. In yet another instance the cloth is placed upon the roof after the other materials are secured in place upon the roof. As will be seen at once, however, the differences between these forms of roofing and mine are marked in point of utility.

My roofing material is of little or no more expensive character than the ordinary paper, felt, or asbestus roofing, and it has no tendency to rot out or otherwise injure the roofing. It entirely prevents cracking or breaking, and leaves no projecting edges to ravel out or be in the way.

My material will be to all appearances the same as the ordinary roofing formed of two or three plies of felt, except the textile face; and the cost of my roofing material will not be any more than the ordinary material of the same number of plies.

Cotton or muslin is a very cheap and durable material, and is not liable to rot out or break. It will not draw or warp the roofing material when placed upon it, as cloth will do. The meshes of the cotton or muslin receive the gummy material upon the felt to which it is united and become in effect a part of said felt or paper, while cloth or any woolen material will only be cemented thereto on its inner face.

Asbestus roofing has been made with an intermediate layer or thickness of cloth between two layers of asbestus, which has constituted the gravest objection to its use, as the cloth rots out and renders the roofing worthless. In consequence of this tendency to rot when moisture gets to the intermediate layer of cloth, the asbestus and all other forms of roofing fabrics which employ a layer of cloth between two layers of other material have become unsalable and gone out of use.

With the single top layer of cotton or muslin unified with the roofing material, as above described, all the advantages of the intermediate layer are secured and none of its disadvantages are felt.

When the cloth is not made a part of the

roofing fabric before application upon the roof, none of the advantages which ensue from my manner of using it will be present. It will not when thus disconnected from the other material prevent its cracking or slipping, and where a thick layer of some tarry or bituminous substance is interposed between the felt and the cloth the good effects due to the cotton being cemented directly to the roofing-felt are not attained.

In applying the roofing material I simply overlap the edges of the two adjacent widths and nail them to the sheeting; but I prefer to use in connection with this lap a strip or ribbon of tin or other metal, through which the nails are to pass. I have found that this strip of metal gives great stability and security to the joint, and is widely preferable to the usual clamping disk or button that is commonly employed. This strip will be of any suitable width, and will receive the nails through it at suitable intervals in its length. I preferably make this strip about one-quarter of an inch wide and run it on top of the upper overlapping edge about three-eighths (more or less) of an inch from the edge of the top layer of the roofing material.

In laying the material I paint with some good roofing-paint between the laps, and after the strip is nailed on I give the entire upper surface of the lap and tin strip a coat of paint.

I prefer to use what is known on the market as the "barbed" nail—that is one having corrugations or unevennesses in its sides to prevent its being easily drawn out.

The accompanying drawings illustrate what I consider the best means for carrying my invention into practice. Figure 1 is a plan view of my roofing material, showing a joint. Fig. 2 is a transverse section of Fig. 1. Fig. 3 is a view showing one corner of the muslin turned up.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A A represent the layers or thicknesses of paper, felt, or similar common roofing material waterproofed and united in the ordinary way. Any number of such layers may be employed; but I have found that two, with the addition of my cotton face, are all that are required in any ordinary use. After these layers have been saturated in the bituminous material and run through a pair of squeezing-rolls and before the bitumen has had time to harden upon them, I run them through a second pair of rolls and run the cotton or muslin through with them. This cotton or muslin face is marked B, and, as seen, it is very intimately and closely united to the face of the felt or paper. So close is this union that its two materials in effect become one and inseparable. The meshes and openings in the cotton are filled with the bitumen or other waterproofing or cementing material, and the two parts are very intimately and securely united. The size of the two materials used—cotton or muslin and felt or paper—will be the same, and the material when completed will, as before stated, bear all the characteristics of the ordinary roofing material, except that it will have the cotton face, and will consequently be much stronger and more reliable. If desired, the cotton or muslin can be prepared by any waterproofing material before it is run through the rolls with and united to the felt or paper; but the soft cementing or waterproofing material upon the felt or paper will generally be sufficient to make the union between the two perfect.

C is a strip of tin or any suitable metal, which, as shown, is laid upon the overlapped edges of the roofing material about three-eighths of an inch (more or less) from the edge of the upper lap, and D are the nails for nailing the entire material to the sheeting. They, as already stated, are what is known as "barbed" nails. The nails pass through the strip of tin and through the overlapped edges of the roofing material, and hold the whole firmly and securely upon the roof. The preferable width of this strip of tin has already been denoted.

When laying the roofing, I paint between the laps, and when it is all secured in place I paint the top lap and tin strip and edges. The cotton face of the material prevents it from cracking around the nail, and consequently the nails will hold the roofing down with all the security and permanence of the ordinary superposed load of gravel or sand that is often used, thereby adding great weight to the building, and with the strip of tin the joint is made entirely secure. The cotton face also, by preventing slipping, makes the nailing very secure.

Having thus described my invention, what I desire to claim and secure by Letters Patent is—

1. A roofing material composed of two or more layers of felt, paper, or similar material, and a thickness of cotton or muslin united to the outer face of one of the layers of felt in the manner set forth.

2. The combination, with the overlapping edges of two adjacent pieces or parts of roofing material having a coat of paint or analogous material applied between the overlapping parts, of a narrow strip of tin or other metal laid upon the top lap back a short distance from its edge and fastened to both laps by nails, as described, and a coat of paint or analogous material laid upon the tin and lap to prevent the edge of the lap from drawing out from under the strip, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID HARGER.

Witnesses:
I. N. KALB,
C. S. DOMER.