Jan. 27, 1925. 1,524,090

D. FINLEY

SEALING TAPE FOR ROOFS

Filed May 16, 1921

Fig. 1.

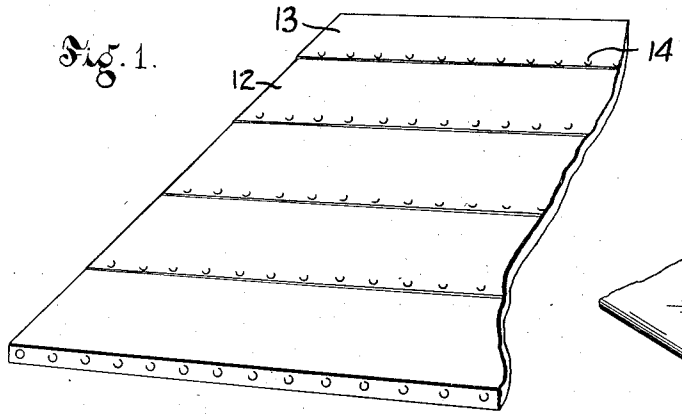


Fig. 3.

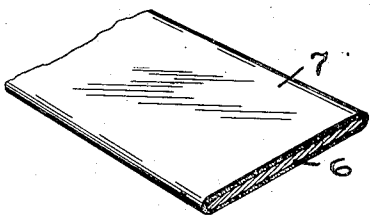
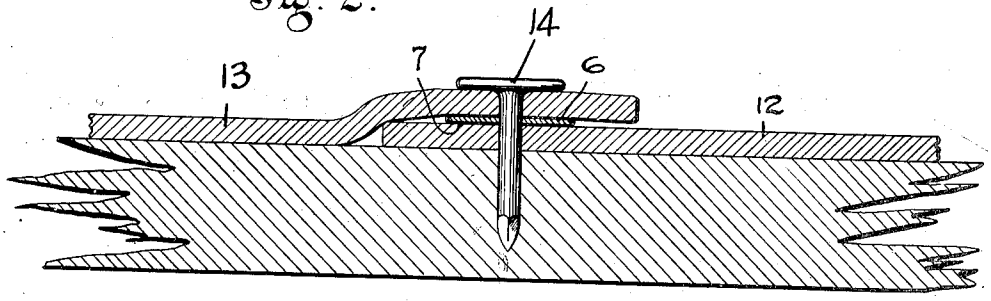


Fig. 2.



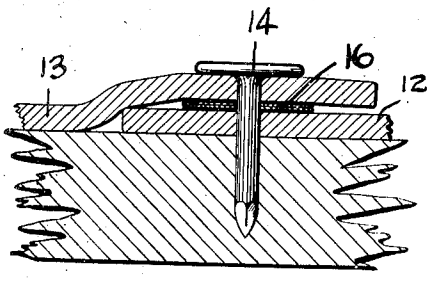


Fig. 5.

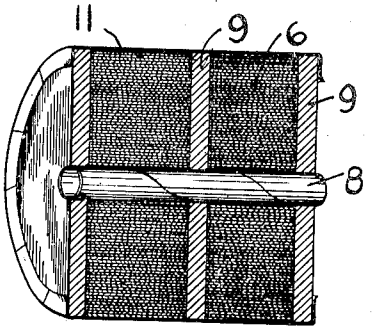


Fig. 4.

WITNESS
H. A. Sherburne.

INVENTOR
DOZIER FINLEY.
BY
White Frost & Evans
his ATTORNEYS

Patented Jan. 27, 1925. 1,524,090

UNITED STATES PATENT OFFICE.

DOZIER FINLEY, OF OAKLAND, CALIFORNIA, ASSIGNOR TO THE PARAFFINE COMPANIES, INC., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF DELAWARE.

SEALING TAPE FOR ROOFS.

Application filed May 16, 1921. Serial No. 470,053.

To all whom it may concern:

Be it known that I, DOZIER FINLEY, a citizen of the United States, and a resident of Oakland, county of Alameda, and State of California, have invented a new and useful Sealing Tape for Roofs, of which the following is a specification.

My invention relates to roofs formed by overlapping sheets and the objects of the invention include the provision of an improved means of uniting the overlapping edges of the roofing sheets, characterized by a lower cost, greater convenience in packing and applying, and a superior result both in effect and appearance.

My invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of my invention. It is to be understood that I do not limit myself to the showing made by the said description, as I may adopt variant forms of my invention within the scope of the claims.

Referring to the drawings: Fig. 1 is a perspective view of a portion of a roof made in accordance with my invention. Fig. 2 is a vertical sectional view thru a portion of the roofing and the foundation on which it is laid. Fig. 3 is a perspective view of a portion of the tape. Fig. 4 is a perspective view partly in section of the tape package. Fig. 5 is a vertical section thru a portion of a modified form of my invention.

In accordance with the usual custom up to this time, prepared roofing is sold in rolls, with a package of nails and a small can of cement paint enclosed in the hollow or space at the center of the roll. In laying the roofing, the overlapping edges of the pieces are adhesively united by applying a coat of the paint to the upper edge of the lower strip, driving nails thru the lap at intervals and daubing paint about the nail heads. When carefully done, this results in a very satisfactory roof, but there are certain objectionable factors about it which it is the object of my present invention to overcome and which include the following:

It involves factors of unnecessary expense in the first instance, and the liability of loss, thru spilling the paint after the package is open, or from rupture of the can during shipment and handling of the package with consequent damage to the roofing, is always present. The laying of the roof is necessarily dirty work and requires a brush which is then ruined for any other purpose. The weight of the roofing package is greater than it need be because of the weight of the can of paint and in shipment the hammering of the heavy can against the closure means at the end of the roll is objectionable since it may result in damage or loss.

In shipments of roofing to other countries the customs duties are sometimes higher on the paint portion of the package and this of course increases the cost of the product to the consumer.

Instead of paint I use a sealing tape which comprises a narrow strip of fibrous material heavily impregnated and coated on both sides with a slow drying adhesive compound. The sealing tape is interposed between the lapped edges of the roofing sheets or strips and a nail which should be galvanized or otherwise coated to resist deterioration is driven thru the lapping edges and intervening tape into the boards forming the foundation or support for the roofing. The nails fix the position of the roofing and press the overlapping edges into close contact with the tape so that a tight joint is formed immediately. After a time the material carried by the tape amalgamates with the material carried by the roofing so that the lapping edges are, as it were, "welded" to the tape and each other.

The complete tape, as shown in Fig. 3, comprises a carrier strip or tape 6, preferably of strong paper about 1 inch wide and weighing about 50 pounds per 2880 square feet. The carrier tape is first saturated in the well known manner with a liquid asphaltum or bituminous compound, and then coated with a relatively stiff bituminous compound, which is applied in a quantity of about .45 of a pound to a carrier tape 48 feet long, by passing the tape thru a mass of the melted compound, and then thru warm rolls or scrapers spaced so as to permit the desired thickness of coating 7 to remain on the carrier tape. A quantity of the tape sufficient for insertion in a package of roofing of the predetermined size is then rolled

on a spool. I estimate that 48 linear feet of the tape is sufficient to be supplied with 36 linear feet of roofing 36 inches wide; this allows sufficient excess for wastage and all cross seams which may be made even when the roofing is cut into a considerable number of pieces.

The coating compound is a mixture which will amalgamate with the coatings of the prepared roofing, but which is, initially not so adhesive as to make the handling of the tape difficult. I have employed with good results a mixture composed of 100 pounds of L oil or L asphaltum, 5 pounds of white laundry soap, 10 pounds of white paraffine wax having a melting point of about 127° F., 230 pounds of limestone ground to pass thru an 80-mesh screen.

I have found it convenient to make up the mixture by first heating the L oil or L asphaltum in a kettle of convenient size until it attains a temperature of about 450 degrees F; the soap, shaved into thin shavings, is then gradually added and the mixture stirred to drive down the foam which forms on the surface. After all of the soap has been added, the foam has subsided and the mixture appears homogeneous and complete, the paraffine wax may be added. The ground limestone is then added and the mixture is then ready for use. Care must be exercised in the use of the mixture that it does not become so hot that the limestone will settle to the bottom, and likewise it should be used for coating purposes at a temperature which will not permit of its being in an extremely thin or watery condition.

The L oil or L asphaltum is a residual oil produced from an asphaltic base petroleum and having in it approximately 40% of asphaltum, and is used to impart a grease-like nature to the compound and to enable it to amalgamate with the coatings of the prepared roofing. The soap hardens the mixture. The paraffine also tends to harden the mixture and prevents undue adhesion between the layers of tape while on the spool. The limestone gives body to the compound and serves as a cheap filler to lessen the proportion of the more expensive ingredients.

I have employed other material than those above named. For instance, I have employed varying proportions of stearine pitch or candle tar in place of a portion of the L oil. I have likewise used a portion of pine tar in the same way. In place of the white laundry soap, it is possible to use the so-called "metallic soaps" such as aluminum stearate, calcium oleate, or compounds of a metal other than sodium or potassium with a fatty acid of relatively high molecular weight. In place of white paraffine wax, I may employ wool grease, Japan wax, beeswax, or I have found that certain oil residuums of the general character of L oil or L asphaltum may sometimes contain a sufficient amount of paraffine-like bodies to make it unnecessary to use any paraffine as a separate ingredient in the mixture. I may employ ground silica, ground talc, gypsum, slag, and rock dust of various kinds, or any other suitable powdered material; i. e., a material which when ground is composed of particles of a hardness or firmness approximating that of talc or harder and which are of a relatively non-absorbent nature.

After coating, a suitable length of the tape is wound on a paper tube 8 in two or more rolls between disks 9 as shown in Fig. 4, and a protective wrapper 11 of grease proof paper or paper sized against the absorption of oils and greases applied. The size of the spool or package thus formed is such as to be readily placed within the roll of roofing, and is about 9 ounces lighter than the can of paint for which it is substituted.

In laying the roofing, the lower piece 12, Fig. 2 is placed on the foundation boards and a piece of tape of the same length unrolled from the spool and laid thereon about ½ an inch from the upper edge. The second piece of roofing 13 is then laid, with about a 2 inch lap over the lower piece, and roofing nails 14 are driven thru at preferably about 2 inch intervals in a line along the center of the lap, piercing the tape and pressing all into tight contact which ultimately results in amalgamation of the coatings.

In Fig. 5, I have shown a modified form of the sealing tape which comprises a strip 16 of paper coated on but one side and folded longitudinally in the center with the coated side out. The tape is laid, as shown in Fig. 5, with the fold opening outwardly. Because of the resilience in the bend, the two sides of the tape tend to press more tightly and uniformly against the enclosing roofing so that a more effective closure of the joint results.

The advantages gained by the use of my invention as set forth above are not, however, confined wholly to material factors since in a roof so laid, the exudation of unsightly patches of black cement from the exposed edge of the seam is prevented. The disfiguring streaks extending below the lap which are almost impossible to avoid when cement is used, and the patches over the nails are also avoided.

I claim:

1. A tape for connecting overlapping sheets comprising a carrier strip of fibrous material impregnated with a saturating compound and coated with a compound comprising L oil, soap, paraffine wax and limestone.

2. A tape for connecting overlapping roofing sheets comprising a carrier strip of fibrous material impregnated with a bituminous compound and coated with a compound comprising the following ingredients in substantially the proportions stated: 100 pounds of L oil, 5 pounds of white laundry soap, 10 pounds of white paraffine wax having a melting point of about 127° F., 230 pounds of limestone to pass thru an 80-mesh screen.

In testimony whereof, I have hereunto set my hand.

DOZIER FINLEY.