

Sept. 3, 1929.

R. S. REYNOLDS

1,727,132

ROOFING MATERIAL

Original Filed Oct. 26, 1925

Fig. 1.

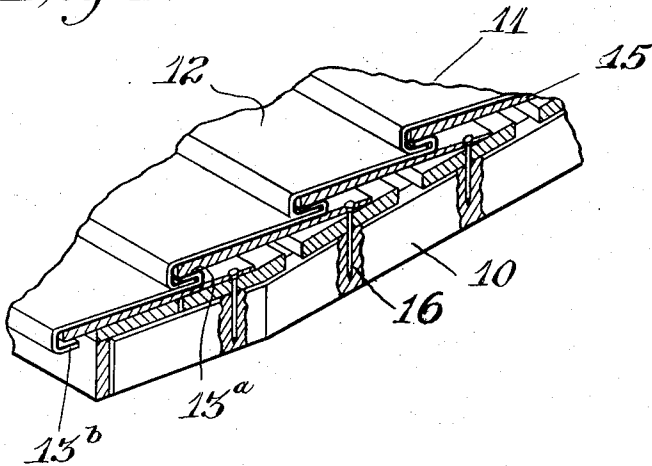


Fig. 3.

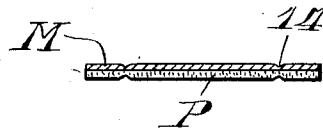


Fig. 2.

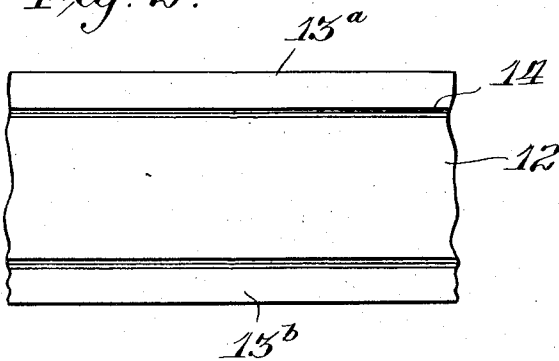
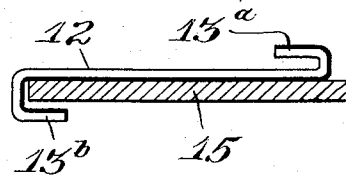


Fig. 4.



Inventor:
R. S. Reynolds,
By *Cleopatra Lloyd* Atty.

Patented Sept. 3, 1929.

1,727,132

UNITED STATES PATENT OFFICE.

RICHARD S. REYNOLDS, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO UNITED STATES FOIL COMPANY, OF LOUISVILLE, KENTUCKY.

ROOFING MATERIAL.

Original application filed October 26, 1925, Serial No. 64,887. Divided and this application filed March 20, 1926. Serial No. 96,132.

The present invention relates to roofing materials such as shingles, roofing strips and the like, and is a division of my copending application, Serial No. 64,887, filed October 26, 1925.

This invention has for its object the provision of a roofing element of an improved structure and composition, which is unaffected by climatic or weather conditions and which will not warp, shrink or expand to any appreciable extent. It should be substantially fire and vermin proof, light in weight, and possess good heat insulating properties. It should moreover be designed to be economically manufactured from inexpensive materials and installed at low cost by cutting, nailing or like operations which may be performed by unskilled labor.

The objects above set forth are obtained by the provision of a roofing element comprising a base which is preferably a heat insulating body such as wood or a moldable compound, and a metallic coating upon this body adhering thereto, the body to be applied to the base in a novel manner hereinafter described, so that no nails or other fastening means are driven through the metal strip.

The base employed may be of a composition which may be molded into form and hardened; it may be wood; it may be a laminated structure; in fact, it may be of any sheet material which should be thoroughly dry so that it will not warp, and which may be sawed as may be necessary for laying and which has body sufficient to be nailed in position.

A body particularly suitable for the present invention is one comprising relatively thin boards which do not make good lumber because of the presence of knots or knot holes or both. Such a base is not expensive and if thoroughly dry when prepared, is practically non-warping. Wood tends to make a roof more desirable by conserving in cold weather the heat within the building on which used, and in hot weather resisting the conduction of heat into a building. It will not deteriorate to any great extent should defects in the metallic coating exist; and the fact that it will not readily warp when employed in this manner, increases the endurance and life of the roof under the most severe exposure.

The coating for the base is a combination, in suitable proportions, of paper and asphalt with a thin coating of metal thereover. The paper is saturated with asphalt and is particularly suitable as a body for a metal roofing sheet to be applied to wood, because its coefficient of expansion with variations in temperature and moisture is practically zero.

The base may be of any form suitable for application of the body and metal covering to a roof; preferably, the base is shaped into the form of a rectangular shingle of decreasing thickness as its top is approached. This is not a necessary requirement to the success of the invention, however.

The body of saturated paper has a coating of metal applied to it in such a manner as to cause it to adhere directly to the surface of the body. A most efficient metal is zinc, rolled into sheets. For the purpose of applying such a body to the sheet zinc, the surface of the metal is brought into intimate contact with the saturated paper. Heat or pressure or both may be applied to effect this result. The asphalt possesses an adhesiveness sufficient to hold the body and sheet metal together.

The metal applied to the body, and the body applied to the base, allows for the irregularities of the base, and becomes, for the closely adherent thin metallic coating, a protection as well as a reinforcement for the base.

The invention will be more fully understood from a consideration of the following detailed description taken with the drawings, in which:—

Figures 1, 2 and 3 show the roofing element of my invention in strip or roll form, and

Figure 4 shows my improved roofing, in section.

Like reference characters are used to designate similar parts in the drawing and in the description which follows.

Reference should be had to the details of Figures 1, 2 and 3 of the drawings. The numeral 10 designates a section of a roof of a building over the gable and upon which my improved roofing has been placed. The roofing is designated generally by the reference numeral 11 and comprises a middle or wide section 12, an upper section 13^a, and a lower section 13^b. A wooden base 15 is provided as shown under the strip and will be referred to more in detail hereinafter. The

metal portion of the strip is designated M and the body or packing by the letter P. The edge or the lower section 13^b of the strip is turned under while the upper strip or section 13^a is turned over and back as illustrated.

Strip 12 may be made in rolls of material having longitudinal scores 14 like those shown in Figure 2, and having a cross section as illustrated in Figure 3. The scoring 14 at the lower edge of the material is to permit ready folding under of section 13^b and that, at the upper edge permits the turning of the section 13^a upwardly and over. When so made, cuts of proper length are removed from the roll and laid in the manner shown in Figure 1, the articulations in the material being made subsequent to cutting it to a proper length.

Naturally, the strip may be cut in predetermined lengths during the process of manufacture, and such predetermined lengths may be secured, when desired, to the wooden or other base before being laid. The coating may be adhesively or otherwise applied to such base.

In Figure 1, the preferred method of joining strips in accordance with the present invention is illustrated. For example, section 13^a of an upper strip 11 is secured to section 13^b of the contiguous lower strip 11, so that the sections 13 and 13^b interlock and prevent leakage in the jointure therebetween. Nails 16 may be driven through the base 15 as shown before the upper strip is articulated upon the score 14.

The precise physical operation of laying is unimportant, but no matter how laid, there is economy of operation in employing the material illustrated, and when the material is supplied in rolls, there is not only a marked saving in freight and in production costs, but also in the labor for laying, for there is nothing for the mechanic to do but cut the material to proper length and nail. Nails 16 disposed as they are illustrated avoid leakages and present upon the roof an unbroken oblique surface which is free from visible punctures.

The body P permits of making a very tight seam between strips. This material P is compressible, being preferably paper saturated with asphaltum, and therefore lends itself to sealing the several joints. The asphaltum in the paper provides cohesiveness which will cause the abutting sections of the paper to eventually unite from mere contact. The application of heat to the metal will tend to hasten a union of the strips by its effect upon the backing P. As an added precaution, however, a waterproof glue or cement may also be added in the joint but is not usually necessary.

A most serviceable roof comprises a plurality of strips of metal M only united at their joints by a low melting solder. In fact a

thin sheet of solder may be used as a backing instead of the paper, making it possible to seal the seams between interlocking sections by mere external application of heat, for instance by a blow torch.

As shown in the preferred embodiment illustrated in Figure 1, the base 15 is but partly covered by the metal sheet M upon the body P. The metal M and backing P extend but part of the way toward the top of strip W, and the metal and backing are arranged to interlock at the forward or lower edge of the base.

With this arrangement, nails may be driven through the base 15 and need not be inserted through the metal M or paper P. This provides a series of unpunctured metal strips as the exposed surface of the roof.

In laying the roof, the flaps 13^a and 13^b are made to interlock, and the nails 16 or other means used to secure the roof may be driven through the base 15 free of the metal and paper or through the interlocked flaps 13^a and 13^b, and the base 15 if preferred. It is preferably, however, to secure the roof in place without puncturing the metal strip. Leakage could not possibly occur with such a secure jointure as described, and an entirely covered strip possesses marked advantages of long life and great strength, while the base 15 of such a roofing material may be of unsightly wood or other material, and hence cheaply procured. It may be so full of knots and knot holes that it would be useful for no other purpose.

It should be quite manifest that all the forms which the invention may take are not illustrated in the single sheet of drawing, hence, there is no intention to be limited to the precise embodiments shown in this application, but on the contrary, to be bound only by the limitations, expressed in the appended claims.

It is worthy of note that the roofing material may be laid without puncture. When punctured, the perforated part is remote from exposure to rain water or thawing snow or ice. As illustrated, the expansion and contraction due to changes in temperature are negligible, because zinc is the preferred metal coating, and because the metallic sheet is relatively thin. There are no exposed edges when the roof is laid.

The material is economical to make. Only the lowest grades of wood need be employed and the metal coating exceedingly thin. There is no rust or oxidation of zinc to cause it to become thin or leaky, and it is seemingly everlasting.

I claim:—

1. An article for manufacture, a building strip suitable for roofing comprising a core of woodlike material to be nailed, and a flexible covering of metal having a paper backing attached to said core and metal, the covering

having articulated flaps projecting from the core for interlocking with adjacent strips.

2. A roofing material comprising a strip of wood to be nailed, and a flexible composite metallic and paper covering having attached to said strip articulated extensions projecting above and below said strip parallel there-

to and adapted to interlock with contiguous sections of similar material, said strip of wood extending beyond said metal covering to enable the attachment thereof to a roof without puncturing said metal. 10

RICHARD S. REYNOLDS.