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ROOFING MATERIALS AND ROOF CONSTRUCTION

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FIG. 1

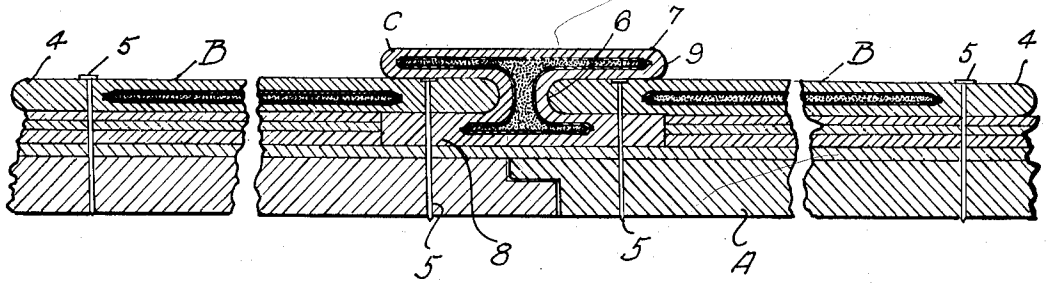


FIG. 2

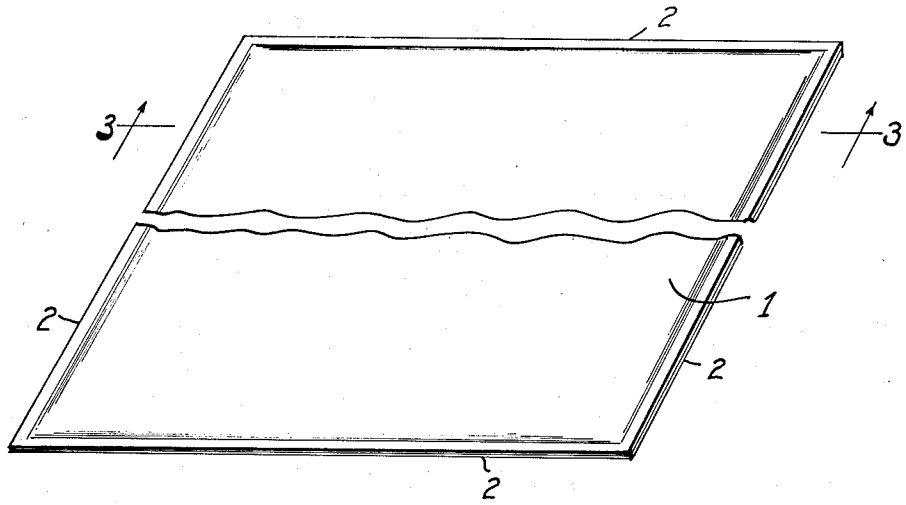
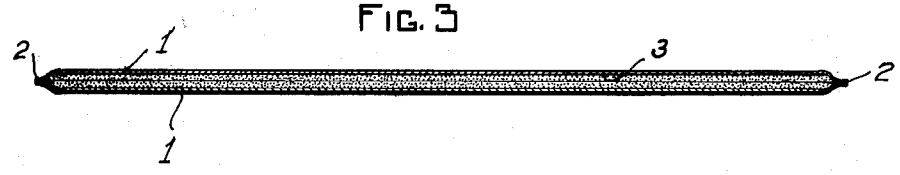


FIG. 3



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ROOFING MATERIALS AND ROOF CONSTRUCTION

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1 Claim. (Cl. 108—12)

This invention relates to improvements in building construction and more particularly to roofing materials wherein some of the protective substance used is so incorporated therein, as to be protected against wear and exposure to the elements that normally weaken and deteriorate such materials.

One of the principal objects of our invention is to so construct such a roofing material, that a layer of asphaltic substance is completely enveloped within a sheath of pliant and relatively thin moisture-proof and air-impervious thin metal, to thereby retain said asphaltic substance in its substantially original condition insofar as its effective roofing characteristics are concerned.

An added object of this invention is to so construct a roofing member of the kind described, wherein the sheathed layer of asphaltic material is formed as a core and is protected against exposure to weather, wear and accidental damage, by enclosing said core within a protective coating or layer of a much stronger construction that is better adapted to such exposure, and to have the bounding edges of said outer coating project laterally beyond the corresponding marginal edges of said core and entirely conceal the latter thereby.

A further object of our invention is to so construct a roofing member of the kind described and wherein there is a sheathed core of moist asphaltic minerial, and a protective coating or cover to envelope the latter and to project laterally therebeyond so that nails or other fastening elements may be driven through the coating into the roof, to affix the roofing member without damage to its core.

Another object of this invention is to so construct a roof from said members in such a manner that joinder members will be associated therewith, so that the fastening elements may be forced through an unexposed portion of said joinder members and the roof members to thereby conceal said fastening elements from exposure to the weather.

A still further object of our invention is to so construct such a joinder member, that it too, will have a sheathed core entirely within its confines, made in substantially the same manner as the cores previously mentioned and for a similar purpose generally.

Yet another object of our invention is to provide a roof construction from the roofing members and joinder members described, so that a pair of the former may be laid on the roof with their adjacent side edges apart slightly to provide a slot therebetween, and with the joinder member of such cross-sectional shape as to have upper and lower flanges extending to either side to straddle the adjacent marginal edges of the roofing members, and with a web portion that fits within and substantially fills the said slot.

Other objects of our invention are to construct roofing members and a roof of the kind described, that will be extremely neat and attractive in appearance, relatively economical to make and install, long-lasting, of high heat-

insulating power, and which will be otherwise satisfactory and efficient for use wherever deemed applicable.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art to which this invention appertains, from the disclosures herein given.

To this end, our invention consists in the novel arrangement, construction and combination of parts herein shown and described, and as will be more clearly pointed out in the following specification.

In the drawings, wherein like reference characters represent like or corresponding parts throughout the views,

Figure 1 is a vertical cross-section view of the invention, applied to a roof;

Figure 2 is a perspective view of the metal-sheathed core used as a part of the roofing members; and

Figure 3 is a cross-sectional detail of said core, taken substantially along the line 3—3 of Fig. 2.

Referring more particularly to the drawings, wherein we have illustrated a preferred embodiment of the invention, there is shown a roofing for covering substantially any sort of a roof, although the latter as shown has the customary wood top boards A.

In the usual manner of applying roofing, it has been customary to apply asphaltic-composition fibrous substances in rolls, sheets or shingles to such roofs, because such material is especially well adapted as roofing, for many reasons needless to explain herein.

However, such roofing is open to the objection that when it is in service and exposed to the weather, there is too rapid a deterioration of such roofing, so that replacements are all to frequent.

For that reason, we have designed an entirely different construction of roofing, in which all of the beneficial effects of the asphalt therein are retained intact throughout an unusually long life, and in addition, the insulating quality of the roofing is improved.

To that end, we have provided that a core containing an asphaltic substance in a preferably moist condition be embedded within the confines of the roofing, so as to be concealed from exposure to the weather, and wherein there will be little or no deteriorating of the same for an unusually long period of years.

Such a core is shown most clearly in Figs. 2 and 3, and consists of a pair of air and moisture-impervious sheets 1—1 arranged in spaced apart opposed relationship, but with the marginal edges of the same brought together and sealed along their entire marginal bounding edges 2, to form the relatively shallow pocket 3 between the major portions of the sheets, to form an envelope or sheath shown.

We have found that a pliant and relatively thin, inexpensive and long-lasting metal, such as of aluminum or copper foil may be used for the purpose, although it is apparent that other material might be substituted therefor, as found suitable. This metal sheathing can be quite thin, even of approximately .002" thickness, although heavier guages might be used where such extra expense is justified by some unusual conditions that should be taken into consideration in the construction.

Any suitable manner of sealing the bounding marginal edges of said sheets 1—1 together may be used, as by folding, crimping, fusing, cementing, or the like, the only requirement being that there results a good and continuous joint to hermetically seal the contents against danger of leakage or accidental breakage therepast.

The pocket thus formed is filled with any suitable roofing compound, as for example an asphaltic substance, in a preferably moist condition, and if desired it may even be a relatively pure asphalt that is flowable, inasmuch as the same has been found by test to be ideally suited for the purpose. As will be seen, this substance will not

be exposed to the weather and will therefore retain its well-known protective characteristics for many years, unless of course, the sheathing is accidentally ruptured. Of course, if it is desired to increase the non-drying characteristics of the said substance, one or more of any well-known plasticizing or softener agents may be added, as for instance a specially processed linseed oil, soy bean oil, etc., or with a compatible polyethylene glycol or the like.

Obviously, the core element thus described is relatively pliant, weak and easily damaged if unprotected, so that a protective coating or covering must be applied to encase the same, as will now be set forth.

An asphalt-saturated felt or fibrous material 4 that is sufficiently thick and sturdy to withstand the usual weather conditions, entirely encases the metal-sheathed core element, there by giving an over-all requisite rigidity to the roofing member thus constructed, said coating or cover 4 being cemented or affixed in any preferred manner to the entire surface of said core.

It is to be particularly noted that the marginal edges of the covering 4 projects laterally beyond all of the marginal edges of the core, so as to thereby permit ready handling of the roofing as a unit without damage to the relatively fragile core therewithin, and at the same time thus providing a marginal area through which fastening nails 5 may be driven into the body of the roof A, all without puncturing the sealed core.

This composite roofing member, consisting of the inner core of the metal envelope hermetically sealed with the asphaltic substance therein, and outer cover, may be made in sheets, rolls or shingles, and in some instances may be made to be substantially the full size of the roof which is intended to be covered, and in which latter case, there will be no joints on the exposed surface of the roofing.

The roofing member B thus formed may, if desired have its exterior surfaces coated with crushed rock or the like adherent thereto, or the same may be treated with a coating of rock dust for the usual well-known reason.

Where the roofing members B are made in sizes smaller than that of the roofs to which they are to be applied, the edges of adjoining roofing members may overlap, or as shown a separate juncture member C may be used so as to minimize any danger of moisture leakage past said joints.

In Fig. 1, there is shown a roof structure wherein the adjacent roofing members B—B are laid with their opposed marginal edges opposed and spaced apart a slight distance to provide an elongated slot 6 therebetween.

The joinder member C is especially constructed to cooperate with the adjacent pair of members B—B to close said slot therebetween, and is provided with a thin-metal sheathed core in substantially the same way and for the same purpose as the cores of the members B—B. However, this member C and the core therein is of a special shape, as will now be described.

This joinder member C is preferably I-shaped in transverse cross-section, with the approximately parallel top and bottom flanges 7 and 8 spaced apart a distance equal to the thickness of the adjacent marginal portions of said members B—B, as shown.

In the joinder member too, there is a cover layer 9, of preferably an asphalt-impregnated fibrous material similar to the coatings 4, so as to be much stronger and self-supporting than the core within said joinder member, said cover projecting laterally beyond the corresponding marginal edges of said core so that the latter is completely embedded therewithin and concealed thereby.

In order to provide areas for directing the fastening

nails through the member C, the latter may be so designed that it is wider across its top than across its bottom, and therefore the nails may be forced through the adjacent opposed areas of the members B—B and through the bottom flange 8 of said joinder member C, and the top flange 7 then superimposed on the top surface of said adjacent portions of the members B—B by bending said top flange down and preferably cementing thereto to cover and conceal said nails. The nails therefore firmly secure the roofing members in place, but do not pierce the relatively fragile core portions of said members.

It has been found from test, that the roof thus constructed has excellent heat-insulating properties, and will retain the same for a period much longer than is customary with the usual type of asphalt-saturated roofings, as in our construction the asphalt is completely sealed in place, away from exposure to the weather, and does not become readily deteriorated by the latter.

When the exposed portions of the roofing does become worn, a fresh coating may be applied, simply by an application of fibrous asphalted roofing cemented to the portions of the roofing that is left, preferably with a cold cement in order not to impair the seal of the cores in the old material.

Having thus described our invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of our invention; hence we do not wish to be understood as limiting ourselves to the exact form, arrangement, construction and combination of parts herein shown and described, except as limited by the state of the art to which this invention appertains, and the claim hereunto appended.

What we claim as new and desire to secure by Letters Patent is:

For use on a roof structure, a pair of roofing members each having a layer of substantially constantly moist asphaltic substance hermetically sealed a predetermined distance within the marginal bounding edges of the same, and said members laid with their opposed marginal portions spaced apart to provide a longitudinally extending slot therebetween, and an I-shaped filler member having a layer of substantially constantly moist asphaltic substance hermetically sealed a predetermined distance within the marginal edges of the same, said filler member positioned between said pair of members with its web portion filling said slot and with its flanges straddling the top and bottom faces of each of the opposed portions of said pair of members, whereby fastening means may be driven through superimposed portions of said filler and roofing members into the roof and sufficiently beyond said hermetically sealed substances without piercing the latter.

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