

Feb. 13, 1945.

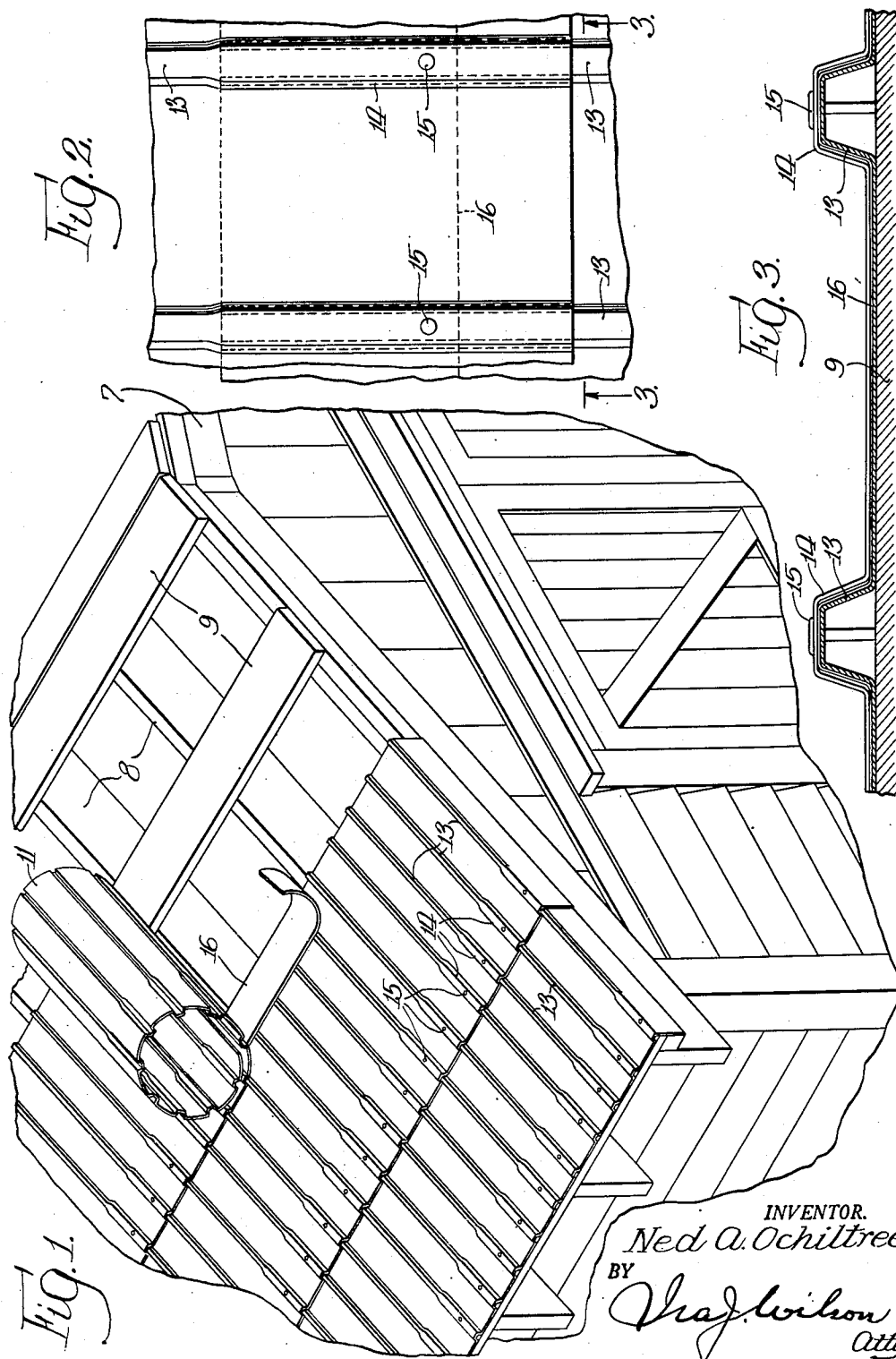
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SHEET METAL ROOFING MATERIAL

Filed Nov. 4, 1943

2 Sheets-Sheet 1



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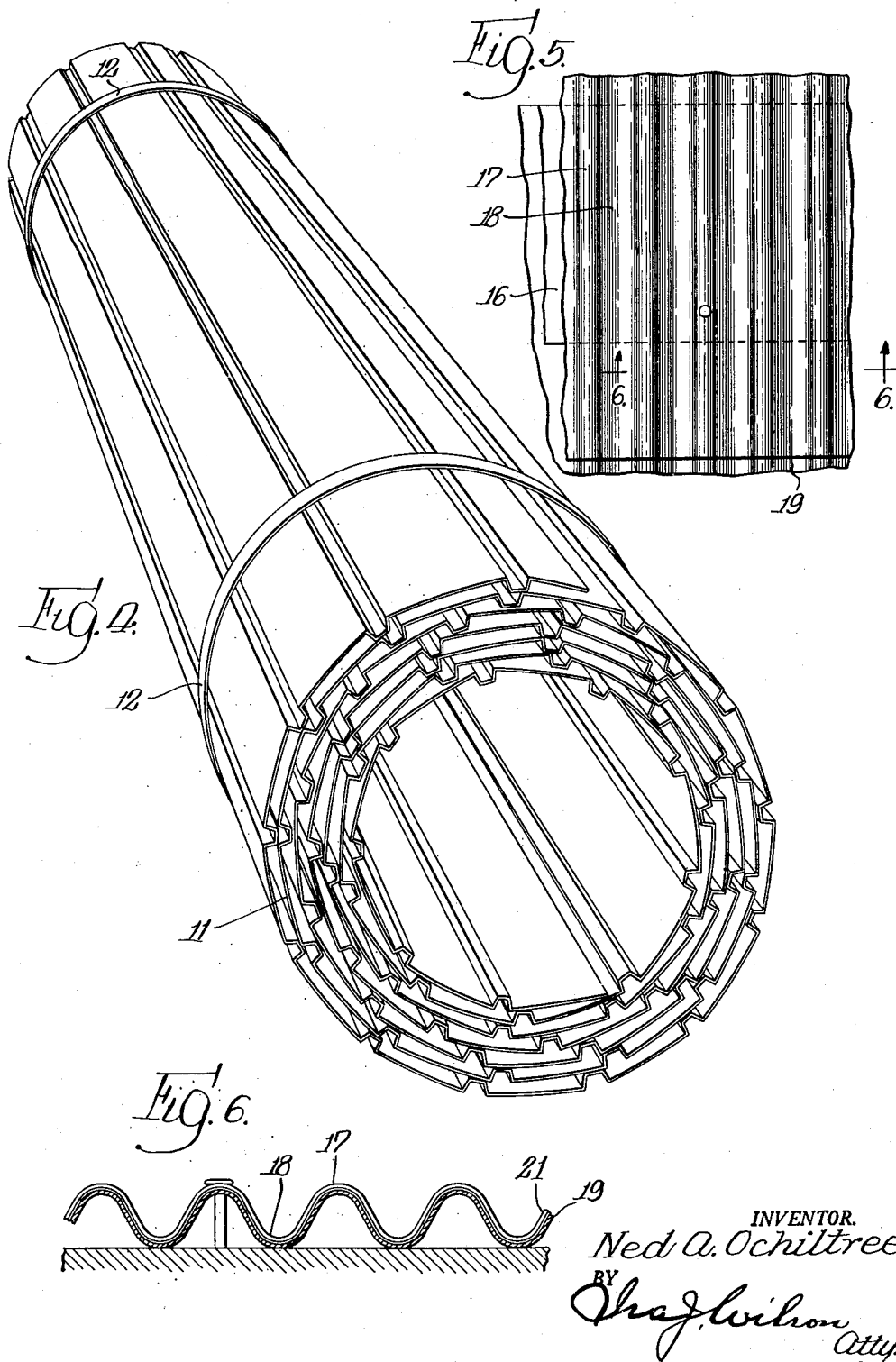
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UNITED STATES PATENT OFFICE

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SHEET METAL ROOFING MATERIAL

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Application November 4, 1943, Serial No. 508,899

4 Claims. (Cl. 108—13)

This invention relates to roofing material and is concerned primarily with the provision of a sheet metal roofing which will overcome a number of objectionable features heretofore inherent in metal roofing materials.

Because of its low cost of production and its durability in service, sheet metal is preferred for roofing purposes in many instances over wood shingles or composition shingles or sheets. Corrugated sheet metal roofing has heretofore been marketed only in flat sheet form. Such sheets were of various widths and were made in 6, 7, 8, 9, 10, 11 and 12 foot lengths. This large variety of lengths was required to be stocked by the dealers, because in the employment of the sheets they are laid lengthwise of the rafters and the length of sheets or combinations of lengths purchased by any individual user will depend upon the length of the roof from ridge to eaves, so that the combination of sheets of the proper length overlapped at their ends will just cover the space without cutting.

If uncorrugated sheets are employed, the side edges of adjacent sheets are bent outwardly from the plane of the sheets and fastened together on the roof by folding or otherwise so as to produce a seam projecting outwardly from the plane of the roof and extending longitudinally of the sheets or, in other words, lengthwise of the rafters. In the case of corrugated sheets, the corrugations at the sides of the sheets are overlapped so as to provide a water-tight joint. In any event, however, whether plain or corrugated roofing is desired, the dealer is compelled to carry the wide variety of lengths and, consequently, is required to stock an aggregate amount of these sheets disproportionately large in proportion to his sales.

This disadvantageous feature of metal sheet roofing materials does not apply to composition sheet materials, which are sold in rolls each consisting of a long relatively narrow strip of material adapted to be laid crosswise of the rafters as it is unrolled from the roll. When the end of the roof is reached, the strip may be cut off and the next layer may be laid or started with the remainder of the roll.

The primary purpose of my present invention is to produce a roll of sheet metal roofing material which can be stored and handled as economically as composition roofing, thereby relieving the dealers of the necessity of carrying a large stock of different length sheets heretofore deemed necessary.

Composition roll roofing is recognized as being

less durable than sheet metal roofing and, furthermore, because of its low tensile and puncture resisting strength requires an uninterrupted plane surface support upon which it is laid.

Sheet metal roofing, on the contrary, when corrugated in wave form or by having strengthening ribs struck up from its surface, possesses sufficient strength so that it need not be continuously supported, but the roof boards may be spaced apart, thereby reducing the cost of construction.

The corrugated sheet metal roofing contemplated by my invention is sufficiently strong to be supported by spaced apart roof boards and in that respect is superior to the roll composition roofing.

Another advantageous feature of my roofing material resides in the fact that it may be laid in strips extending from end to end of the roof structure in the same manner as composition roofing. Furthermore, a strip produced in accordance with my invention is provided with corrugations extending transversely from edge to edge of the strip, which corrugations, when the strip is laid on the roof, extend in the direction of the rafters so as to afford an unobstructed drainage from the roof in the valleys between the elevated strengthening ribs of the material.

A further object of the invention is to provide corrugated sheet metal roofing in rolls which can be economically stored, can be readily unrolled on the roof when being applied, and shall have matching corrugations fitting the corresponding corrugations of the overlapped and overlapping strips associated therewith, and will provide upwardly projecting strengthening ribs through the crests of which nails may be driven into the underlying supporting structure without causing leakage around the fastening nails.

My invention further contemplates sealing the joint between overlapping strips of material by positioning a sealing strip therein as the overlapping strip is laid, thereby adding to the imperviousness of the roof so as to prevent wind and rain from blowing in between the overlapped strips.

Other purposes and advantages of my invention should be readily appreciated as the same becomes better understood by reference to the following description when considered in connection with the accompanying drawings.

Referring to the drawings,

Fig. 1 is a fragmentary perspective view of a roof structure in the process of being laid in accordance with my invention;

Fig. 2 is a fragmentary plan view thereof;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a perspective view of a roll of my sheet metal roofing;

Fig. 5 is a fragmentary plan view similar to Fig. 3 of a roof constructed of sheet metal strips transversely corrugated in wave-like form; and

Fig. 6 is a sectional view on the line 6—6 of Fig. 5.

Referring to the drawings more in detail, reference character 1 indicates generally a portion of a building structure, such as a garage, having the usual rafters 8 which, in the present instance, instead of being closely covered by roof boards to form a substantially uninterrupted support for the roofing material (as would be necessary if roll composition roofing material were to be used), have an open structural cover consisting merely of a number of roof boards 9 extending crosswise of the rafters and spaced apart longitudinally of the rafters. The spacing of the roof boards, of course, may be varied, but it is contemplated that a board under the overlapping portions of each strip of roof material will suffice.

The roofing material is handled by the dealer and brought to the job in the form of a roll 11, as shown in Fig. 4, consisting of a long relatively narrow strip of transversely corrugated sheet metal coiled upon itself into the roll, as shown, and secured by ties 12. While the length of the roll which corresponds with the width of the strip and the size of the roll which depends upon the length of the strip may be varied, it is believed that the most satisfactory dimensions may be such that each roll may be adapted to cover a square, or, in other words, one hundred square feet of roof. For instance, if the strip be 34 inches wide and designed to allow 4 inches for overlap, the length of the strip would be 40 feet. Other widths might be preferred, depending upon the gauge of metal employed and other factors, but preferably the length of the strip would vary correspondingly, so that each roll would furnish sufficient material to cover a square.

For economical production it is contemplated that the strips will be cut to desired length and width from a large coil of sheet metal which has preferably been galvanized before being rolled and delivered in coiled form. As the plain sheet is unrolled from the coil it can be passed through a corrugating machine which will form corrugations of the desired depth and contour therein, and if the sheet is of greater width than the strips, as is customary, it will be slitted into strips of the desired width. When the desired length for a strip of corrugated roofing material has been run off, thus providing a strip of the desired length, it is rerolled directly from the corrugating machine into a roll such as indicated in Fig. 4.

The corrugations shown in Figs. 1 to 4, inclusive, consist merely of upwardly struck ribs 13 extending transversely of the sheet from edge to edge, the ribs along one margin being slightly wider, as indicated at 14, to overlie and rest snugly upon the underlying ends of the ribs on the overlapped strip. The strips are laid in the manner followed in laying rolled composition roofing, the first strip being laid lengthwise of the roof along the eaves, the next strip overlapping the upper edge of the first strip, and both strips being secured to the underlying roof boards by nails 15 passing through the crests of the over-

lapped ribs and downwardly into the roof structure.

As a preventive against rain and wind blowing in between the overlapped strips, my invention contemplates the provision of a sealing strip 16, for instance, which may be laid along the upper margin of a previously laid strip as the next overlapping strip is unrolled, thereby disposing the sealing strip between the overlapping strips of roofing material so as to afford a weatherproof seal at the juncture of the strips.

The type of corrugations applied to the sheet metal strips is a matter of choice, and may be of any preferred design. As illustrative, however, of another type differing from that shown in Figs. 1 to 4, inclusive, I have in Figs. 5 and 6 illustrated sheets provided with ordinary wave-like corrugations which form the sheet into alternately disposed crests 17 and valleys 18. The sheets are laid and overlapped in the manner previously explained, except that in this instance the corrugations are of the same width at both margins of the strip, as will be evident from Fig. 6, wherein the corrugations in the overlapped sheet 19 are of the same dimensions as the corrugations in the overlapping sheet 21.

The dimensions and structural details of the strips of material, the manner of producing the corrugations, and the manner of rolling as well as other details may be varied within considerable limits within the scope of my invention as defined in the following claims.

I claim:

1. A roof structure, comprising rafters, roof boards disposed thereon in spaced apart relation, and strips of corrugated sheet metal roofing material overlying said boards and arranged in overlapping relation upwardly from the edges, said strips being laid crosswise of the rafters and corrugated transversely from edge to edge to provide alternate ridges and valleys extending lengthwise of the rafters, each of said strips before laying being of sufficient length to be coiled upon itself and delivered to the place of use in the form of a roll equal in length to the width of the strip and adapted to be unrolled horizontally so as to dispose the strip lengthwise of the roof in position for fastening to the supporting structure of the roof.

2. A bundle of sheet metal roofing material of suitable width for laying in successively overlapping strips extending longitudinally of the roof, said material being provided with strengthening corrugations extending transversely from edge to edge thereof and shaped so that the lower margin of each strip when laid will nest with and fittingly overlie the upper margin of a previously laid strip, the material comprising said bundle being of much greater length than width and coiled upon itself to form a handleable roll adapted to be unrolled and laid lengthwise of the roof with the transversely disposed corrugations extending from ridge to eaves of the roof.

3. An article of manufacture, consisting of a strip of sheet metal roofing material provided with transverse corrugations extending from edge to edge thereof and coiled into a cylindrical roll of a length corresponding with the width of said strip, the length of the strip being materially greater than the width thereof so that uncoiling of the roll provides an elongated strip adapted to be laid lengthwise of a roof with the corrugations of one strip nesting with the corrugations of an

overlapping strip and extending in the direction of the slope of the roof.

4. A roof structure, comprising, rafters, roof boards disposed thereon in spaced relation, strips of corrugated sheet metal roofing material overlapping said boards and arranged in overlapping relation upwardly from the edges, said strips being laid crosswise of the rafters and corrugated transversely from edge to edge to provide alternate ridges and valleys extending lengthwise of 10

the rafters, and sealing material disposed between the overlapping portions of successive strips, each of said strips before laying being of sufficient length to be coiled upon itself and delivered to the place of use in the form of a roll equal in length to the width of the strip and adapted to be unrolled horizontally so as to dispose the strip lengthwise of the roof in position for fastening to the supporting structure of the roof.

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