Jan. 21, 1936. J. L. HOLT 2,028,607

ROOFING

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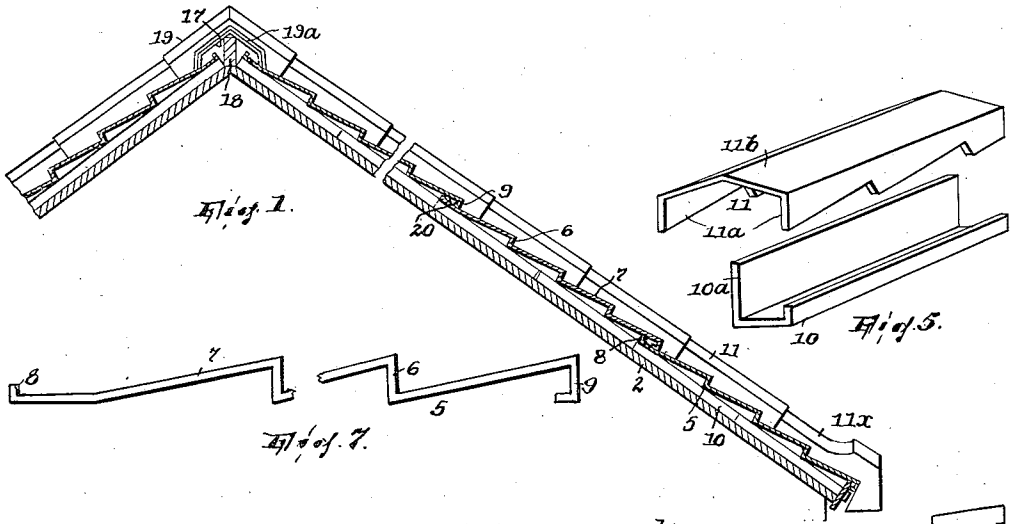


Fig. 1.

Fig. 7.

Fig. 5.

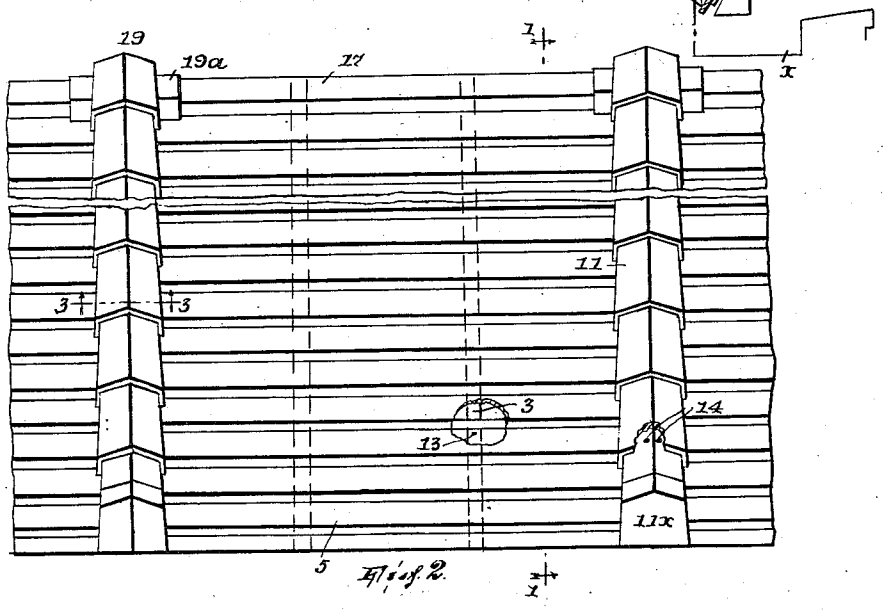


Fig. 2.

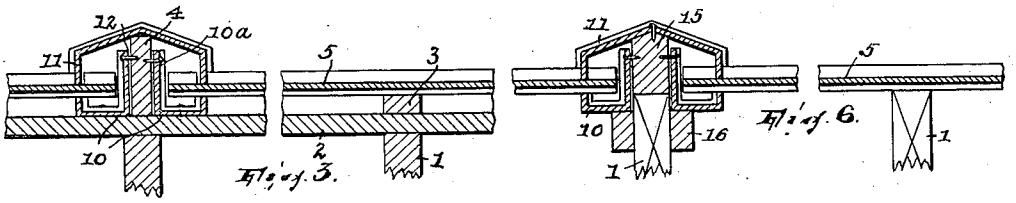


Fig. 3.

Fig. 6.

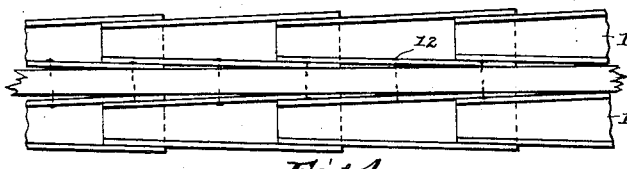


Fig. 4.

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ROOFING

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Application February 7, 1934, Serial No. 710,123

8 Claims. (Cl. 108—10)

The object of this invention is to provide a roof which as to its actual cover shall be unique and attractive in appearance and make possible the use of certain large-area units of sheet material rather in a distinctive manner and so as to give individual expression in the design of the roof than merely to imitate roofs of other materials where the cover units are generally of more limited area, and whose component parts may be laid with the minimum of labor and time and shall impose the minimum of weight.

In the drawing,

Fig. 1 is a vertical section view on line 1—1, Fig. 2;

Fig. 2 is an elevation of a fragment of the improved roof;

Fig. 3 is a section on line 3—3, Fig. 2;

Fig. 4 is a fragmentary plan, with the elements 11 removed;

Fig. 5 is an isometric view of the elements 10 and 11;

Fig. 6 is a section of a modification of the roof on said line 3—3; and

Fig. 7 is a side elevation of one of the elements 5 on a larger scale.

At 1 are the roof rafters and (in the form shown by Figs. 1 to 5) 2 is the roof sheathing secured on the rafters. Paralleling the rafters and in the present case coinciding therewith and suitably secured on the sheathing are the strips 3 and 4 of which the strips 3 may be ordinary furring strips and the strips 4, otherwise termed beams, may be somewhat narrower and each of considerably greater vertical dimension than the strips 3 as shown in Fig. 3.

My invention contemplates the use, in the portion of the roof cover which is to occupy the major part of the roof area, of elements coming already formed in a standard size and rectangular shape and as flat usually stiff sheets and composed of any material suitable for use as roof covering, as asbestos or other composition material. These elements, which I term the main or covering elements, are indicated at 5 and they will usually have such appreciable horizontal or long dimension as nearly to span the distance between a roof rafter and the next but one or more rafters and a somewhat shorter transverse dimension; for instance, when the rafters are two feet apart on centers, the dimensions of each such element may be approximately 3'10" x 2'. They are to be laid in side by side series so that in each series each element shall overlap somewhat the one next below.

In the preferred form each element is shaped to imitate lengthwise panels of equal width and in parallel planes inclined to the normal or original plane of the sheet forming such element, as by bending the material lengthwise at intervals to form the rises 6 and leave the mentioned panels 7. As to that panel of each element which after such bending has its free margin in said normal plane the edge thereof is bent up, as at 8, whereas as to that panel which is left with its free margin elevated out of said plane the edge thereof is bent downwardly and returned, as at 9, the bends at 8 and 9 being substantially right-angular.

The adjoining side edges of any two adjoining series of the elements 5 must be supported and held down and means provided for shedding any water which might find its way between them. Hence I provide for each such edge an underneath telescoped series of supporting and water-shedding gutter elements 10 and a superimposed telescoped series of water-shedding and retaining elements 11. These may be formed of the same material as the elements 5 and molded, pressed or otherwise formed to shape.

Each element 10 is trough-shaped and has its side walls converging from one end to the other of the element, and one such wall 10*a* preferably higher than the other, these elements being constructed in this respect as rights and lefts. The narrower end of each such element is to be received in the wider end of its neighbor so that when the series is arranged at an incline with the wider ends of the elements up an effective water shedding gutter will be produced.

Each element 11 is likewise trough-shaped, being adapted to be arranged, however, in inverted position and its side walls also converge from one end to the other; each of its side walls, as 11*a*, is stepped to match and snugly fit the stepped form of the elements 5, and its top wall 11*b* is preferably pitched in both directions from the center plane. The narrower end of each such element is to be received in the wider end of its neighbor so that when the series is arranged at an incline with the narrower ends of the elements up an effective water-shedding shield is formed.

In laying the roof cover the work is done up the pitch of the roof. First the gutter elements 10 (one right and the other left) are attached to the opposite sides of the strips or beams 4, as by nailing them thereto at 12, Fig. 3, preferably until two complete gutters are left flanking each such strip. Then the elements 5 are laid

on and nailed at their upper edges, as at 13, to the furring strips 3, one after another up the pitch, their side edges resting on the lower side walls of the elements 10 and the returned lower edge of each in any series overlapping the upper edge of the one below. Finally, the elements 11 are laid on and nailed at their upper edges, as at 14, to the strip 4, one after another up the pitch, the stepping of their side walls being made exactly to fit or mesh with that of the elements 5 and the lower edge of each overlapping the one below.

In Fig. 6 the elements 5, 10 and 11 are the same as in Figs. 1 to 5. But since in this case the roof frame is without sheathing and furring strips I provide on the alternate rafters superposed strips or beams 15 and strips 16 flanking them and below the top surface of the rafters, the elements 10 resting on the strips 16 and the elements 11 straddling and resting on the strips 15; both sets of elements 10 and 11 are nailed to these strips 15.

At the peak of the roof an element 17, substantially of the same form as each element 11, may straddle the joint between each two oppositely pitched series of elements 5 and be nailed to the ridgepiece 18, the same being in length equal to the width of the elements 5 and itself straddled by lateral inverted trough-shaped extensions 19a of cap elements 19 each comprising two inverted trough-shaped elements formed as a unit and reversely pitched. And the lowest element in each series of elements 11 may have some form such as that shown at 11x which will make it ornamental and afford protection against the weather.

Since the depending flanges or side walls of the shield formed by the elements 11 bear upon the elements 5 they act as hold-downs therefor and when their edges are stepped to conform and mesh with the stepping of the covering formed by the elements 5 the shield not only coacts with the nailing at 13 to support the elements 5 but to exclude snow, sleet and, to a considerable extent, rain-water. The parts 10, 11 and 4 (or 10, 11 and 15) form housings into which the side edges of the coverings project (to wit, through the slots formed between the edges of the elements 10 and 11) and any water which may enter these housings will drip from said edges of the coverings into the gutters formed by elements 10 and drain off to the main gutter as shown at x. It will be noted that each housing forms a void around the received edge-portion of each covering; in other words, that there is no broad surface-to-surface contact between the received part of the covering and the interior of the housing. This discourages the travel of admitted moisture by capillary attraction and encourages the drying of such moisture.

The bends in the elements 5 between their panels and at their upper and lower edges reinforce said elements against the weight of the roofer and besides insure against their warping; the bend at the lower edge is a rebend so as to afford a surface-to-surface rather than an edge-to-surface contact with the next underlapping element, thus reinforcing said edge against angular displacement under the weight of the roofer. Where each two adjoining elements 5 lap a void 20 is desirably left between the bend 8 of one and that 9 of the other again to discourage the travel upward of moisture by capillary attraction.

For the material of the elements 5, 10 and 11 there may in some cases be used sheet metal having a composition on one or both sides.

Having thus fully described my invention what I claim is:

1. Roofing including a pair of parallel gutters, separate coverings of stiff sheet material arranged one on each side of the pair of gutters and respectively resting at their adjoining edge portions on the edges of the relatively outer sides of the gutters with their own edges for substantially the full length thereof respectively over the channels of the gutters, said gutters and coverings being inclined, and supporting structure including an elongated member extending lengthwise of and spacing the gutters and to which the gutters are rigidly secured independently of the coverings.

2. Roofing including a pair of parallel gutters, separate coverings of stiff sheet material arranged one on each side of the pair of gutters and respectively resting at their adjoining edge portions on the edges of the relatively outer sides of the gutters with their own edges for substantially the full length thereof respectively over the channels of the gutters, said gutters and coverings being inclined, an inclined inverted trough-shaped element overhanging said edge portions of the coverings, and supporting structure including an elongated member extending lengthwise of and spacing the gutters and carrying said element and to which the gutters are rigidly secured independently of the coverings.

3. Roofing including an inclined gutter comprising a series of trough-shaped elements each having its upper end wider than its lower end and receiving the lower end of the element next above, inclined covering of stiff sheet material having one inclined margin overhanging the gutter, an inclined elongated shield over said margin of said covering and to which the gutter is rigidly secured independently of the covering and comprising a series of inverted trough-shaped elements each having its lower end wider than its upper end and receiving the upper end of the complementary element next below, and supporting structure for said gutter, covering and shield.

4. Roofing including a gutter having one side wall higher than the other, a covering of stiff sheet material resting on the lower side wall of the gutter with one of its edges for substantially its full length over the channel of the gutter, said gutter and covering being inclined, and fixed structure supporting the gutter and covering.

5. Roofing including a gutter, a covering of stiff sheet material having one edge over the channel of the gutter, and supporting structure for the covering and gutter including a beam in a plane outwardly flanking said edge of the covering and to which the gutter is rigidly secured independently of the covering.

6. Roofing including a gutter, a covering of stiff sheet material having one edge over the channel of the gutter, supporting structure for the covering and gutter including a beam in a plane outwardly flanking said edge of the covering and to which the gutter is rigidly secured independently of the covering, and a shield carried by the beam and overhanging said edge of the covering.

7. Roofing including a pair of parallel gutters, separate coverings of stiff sheet material arranged one on each side of the pair of gutters and each having an edge thereof over the channel of the corresponding gutter, and supporting

structure for the coverings and gutters including a beam in a plane between said edges of the coverings and to which the gutters are rigidly secured independently of the coverings.

8. Roofing including a pair of parallel gutters, separate coverings of stiff sheet material arranged one on each side of the pair of gutters and each having an edge thereof over the channel of the corresponding gutter, supporting structure for the coverings and gutters including a beam in a plane between said edges of the coverings and to which the gutters are rigidly secured independently of the coverings, and shielding means carried by the beam and overhanging said edges of the coverings.

JAMES L. HOLT.