June 18, 1940. H. L. PARSONS 2,205,307

ROOFING

Filed Feb. 20, 1939 2 Sheets-Sheet 1

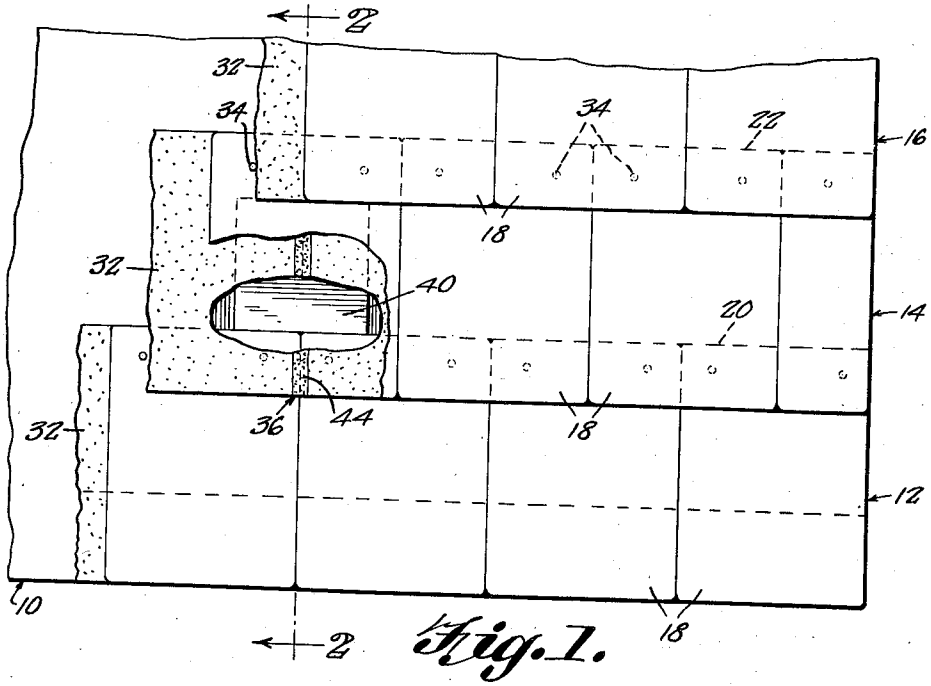


Fig. 1.

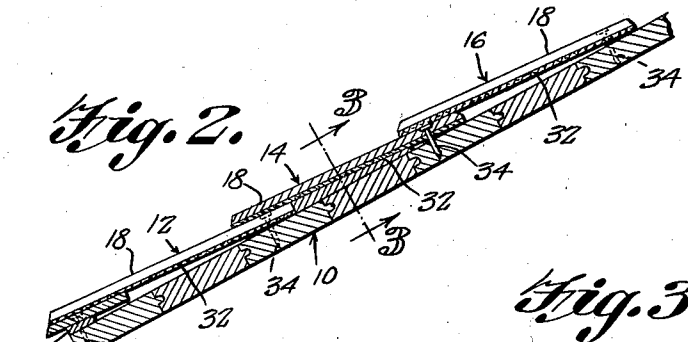


Fig. 2.

Fig. 3.

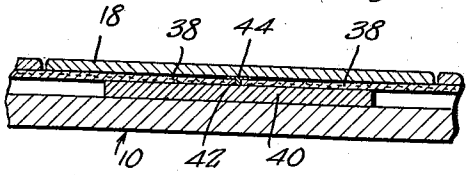
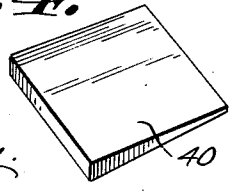


Fig. 4.



Hugh L. Parsons,
INVENTOR

By Victor J. Evans & Co.
ATTORNEYS

P. D. Hickey.
WITNESS

June 18, 1940. H. L. PARSONS 2,205,307

ROOFING

Filed Feb. 20, 1939 2 Sheets-Sheet 2

Fig. 5.

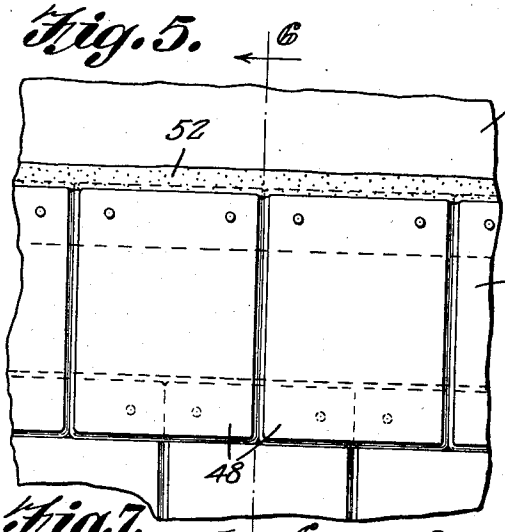


Fig. 6.

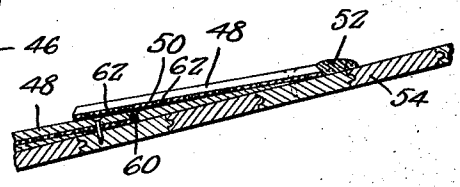


Fig. 7.

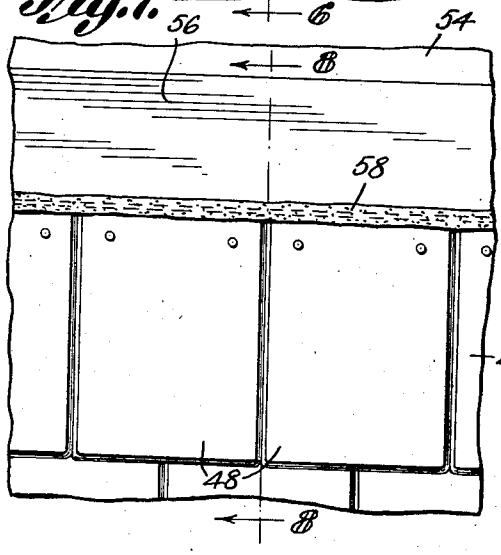


Fig. 8.

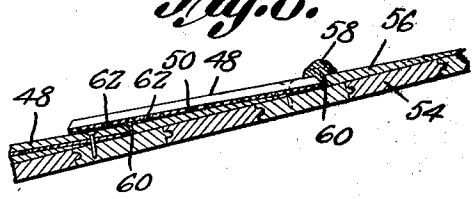


Fig. 9.

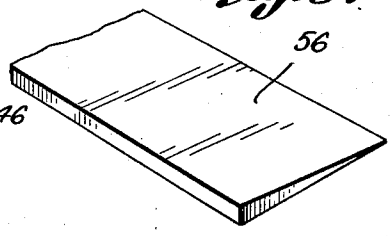
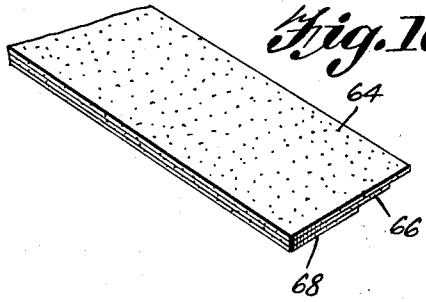


Fig. 10.



Hugh L. Parsons,
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

P. A. Hickey.
WITNESS

Patented June 18, 1940 2,205,307

UNITED STATES PATENT OFFICE

2,205,307

ROOFING

Hugh Lucas Parsons, Pen Argyl, Pa.

Application February 20, 1939, Serial No. 257,515

3 Claims. (Cl. 108—9)

My invention relates to roofs, and has among its objects and advantages the provision of an improved slate roof structure.

An object of my invention is to provide a slate roof structure wherein the slate units in each course are laid to expose relatively large areas to the weather so as to provide coverage for a relatively large roof area with a relatively small amount of slate, thereby reducing the cost of the roof as well as the load of the slate coverage. Roofing felt or equivalent material underlies each course of slate for cushioning purposes in addition to providing an effective seal against the entrance of moisture. I also provide novel means for rendering splices between adjoining strips of roofing felt moisture-proof to the end that the roof structure may have moisture-proofed properties throughout in addition to permitting the use of strip material of shorter lengths than the width of the roof.

Another object is to provide a novel method for laying slate for roof covering purposes wherein overlapping slate units and the cushioning means are effectively sealed to provide moisture-tight relation therebetween. More specifically, I lay a course of slate units and apply sealing material on the roof structure along the upper line of the slate course. After application of the sealing material, I lay a cant strip on the roof structure and press it against the upper ends of the slate units, which movement causes the sealing material to extrude upwardly from between the slate course and the base edge of the cant strip. After placement of the cant strip, I apply a course of cushioning felt and a course of roofing slate. The last laid course partly overlaps the upper margin of the previously laid course with the result that the extruded sealing material is spread between the two overlapping courses and upwardly on the cant strip so as to provide an effective moisture seal.

In the accompanying drawings:

Figure 1 is a fragmentary plan view of a roof embodying my invention;

Figure 2 is a sectional view along the line 2—2 of Figure 1;

Figure 3 is a sectional view along the line 3—3 of Figure 2;

Figure 4 is a perspective view of a cant board employed in connection with adjoining ends of the roofing felt;

Figure 5 is a fragmentary plan view of a roof illustrating the manner in which the overlapping courses are sealed;

Figure 6 is a sectional view along the line 6—6 of Figure 5;

Figure 7 is a view similar to Figure 5 illustrating a step in the construction of the roof of Figure 6;

Figure 8 is a sectional view along the line 8—8 of Figure 7;

Figure 9 is a fragmentary perspective view of a cant strip employed in the structure illustrated in Figures 5 to 8; and

Figure 10 is a fragmentary perspective view of a modified form of cant strip.

In the embodiment selected to illustrate my invention, I make use of a roof structure 10, which is illustrated in Figure 2 as comprising the usual tongue-and-groove siding. Figures 1 and 2 illustrate the roof structure therein as being provided with a plurality of courses 12, 14 and 16 of slate. The number of courses will depend upon the area to be covered. Each course includes a plurality of slate units 18, each of which is preferably ten by twelve inches laid with its long axis vertically. Course 14 overlaps course 12 as indicated at 20, while course 16 overlaps course 14 at 22, with the same arrangement continuing for as many courses as are necessary to cover the roof area. With a slate unit of ten by twelve inch proportions good results have been attained by making the overlap three inches so that each slate unit has a nine by twelve inch area exposed to the weather.

Along the eave edge 24 of the roof structure 10 I provide a cant strip 26 upon which I position eave slate 28. Both the slate and the cant strip are fixedly secured to the roof structure by nails 30. Eave slate 28 is relatively short with respect to vertical length. Under each course 12, 14 and 16 I position felt runs 32, each of which extends horizontally of the roof structure 10 and is of a width corresponding to the vertical height of the slate laid thereon. Each slate unit 18 is provided with two openings near its upper end for receiving nails 34 which are driven into the roof structure 10 for anchoring the slate units and the felt runs 32. Felt runs 32 are thoroughly saturated with asphalt and are preferably dusted with comminuted material such as powdered mica. Figure 2 illustrates the top and bottom edges of the felt strips as terminating flush with the upper and lower edges of their respective slate courses. Thus the felt course 32 associated with the slate course 14 overlaps the slate course 12 in the same degree as the slate course 14. This is true of each course. Felt strip 32 associated with the slate course 12 has its lower margin

located between the slate eave course 28 and the course 12.

Felt sheets underlying a slate course must be effectively joined in end-to-end abutting relation. If pieces of roofing felt are to be laid in a slate course it is necessary that some means be provided for affording support underneath the adjoining end margins of the felt. In cases where felt underlies each course of slate there is a certain amount of sagging of the roofing felt in view of the fact that the felt and the slate are laid in overlapping relation throughout the different courses. Figure 2 illustrates such a joint at 36 in connection with the felt strip 32 associated with the slate course 14. Referring to Figure 3, felt sections 38 have their adjoining margins positioned on a cant board 40, which cant board is tapered to conform to the angular space between the upper face of the roof structure 10 and the felt 32 underlying the slate course 14. The butt of the cant board 40 lies against the upper edge of two slate units 18 in the course 12, while the vertical length of the cant board is such as to bring its upper edge at least under the lower edge of the slate course 16.

Figure 3 illustrates the cant board 40 as being of such width as to afford support for a considerable margin on each of the felt sections 38, and the vertical space 42 between the adjoining sections 38 is effectively sealed by a suitable asphalt or other sealing material 44. Sealed joint 36 extends vertically and centrally of the cant board 40 so as to provide an effective connection between the sections 38. Thus the cant board 40 provides an effective support for the joined sections 38 so as to prevent sagging of the ends to the end that the joint might be effectively sealed to provide a weatherproof condition.

In a roof structure of relatively little pitch the matter of sagging of the felt is an important matter, particularly in connection with abutting edges of felt sections underlying a course of slate. While I have described felt sections as being provided with a sealed joint, proper backing of the felt sections in the vicinity of their adjoining ends affords a good joint in that the felt is prevented from sagging. Any considerable sagging of the felt immediately adjacent the upper edge of the underlying slate course permits moisture to flow into the joint. In supporting the margin against sagging, the unsupported areas of the roofing sections may sag, which sagging causes moisture to drain away from the abutting ends of the roofing section.

While I have described the slate units 18 as preferably being made up in ten by twelve inch sizes, it will be understood that other sizes are equally well adapted to be laid in accordance with my invention. The slate units are so arranged upon the roof structure as to require a relatively small amount of slate material to effectively cover a given roof area. At the same time, the felt provides a cushioning mount for the slate in addition to providing a weather seal between the overlapping margins of the slate courses. The felt cushioning and sealing runs between the overlapping slate courses provide an effective seal against the entrance of water or air. Because of the large amount of slate exposed to the weather, less slate is required and the construction time greatly reduced which lowers the cost of the roof structure. In addition, felt strips are effectively joined so as to provide a weather-tight connection between the felt sections. Cant boards 40 support the joined margins of the felt sections in such manner as to provide complete protection for the sealed joints. Thus the felt strips may comprise sections joined in such manner as to embody continuity for moisture and air sealing purposes. Furthermore, I provide means whereby felt sections may be utilized so as to eliminate a large amount of waste incident to methods wherein the felt strips must of necessity run the full width of the roof structure. The holes in the slate unit are located so as to bring the anchoring nails underneath the upper course of slate so that the felt between the two slate courses effectively covers the nails for sealing purposes.

In Figures 5 to 8, inclusive, I illustrate a roof structure embodying certain modifications. The slate course 46 includes slate units 48 which overlie a strip of roofing felt 50 in the same manner as described in connection with the courses of Figure 1. In the construction of a roof structure according to Figures 5 and 7, I apply a supply of semi-liquid sealing material 52 on the roof structure 54, which corresponds to the roof structure 10, along a line adjacent the upper edge of each previously laid course of slate, as illustrated in Figure 5. After application of the sealing material 52, I apply a cant strip 56, which is tapered in accordance with the cant strip 40 of Figure 4 but is of considerable length. Cant strip 56 will extend the full width of the roof. In wide roofs, the cant strip 56 may be made up of a number of sections. Referring to Figure 8, the cant strip is laid with its butt end above or closely adjacent the upper margin of the sealing material 52 after which the cant strip is pushed downwardly for extruding the sealing material between the butt end of the cant strip and the upper edge of the slate course 46, as at 58. An effective seal is established between the butt end of the cant strip and the slate course, as at 60, while the sealing material will be extruded in the form of a bead which extends some distance above the upper face of the cant strip and the slate course 46. After extruding the sealing material as illustrated in Figure 8, the next course of slate is laid. The latter laid course of slate will cause the bead 58 to be spread laterally of the joint 60 both upwardly and downwardly, as at 62. Thus I provide an effective seal between each course of slate, the seal extending between the overlapping roofing felt and the slate, in addition to extending between a margin of the cant strip and the roofing felt. This construction provides an effective seal in connection with slate covered roofs which have very little pitch.

Figure 10 illustrates a slightly different form of cant strip in which strips of roofing felt 64, 66 and 68 are arranged in overlapping relation, with the strips of progressively narrowed widths so as to provide an assembly of tapered configuration.

I claim:

1. In a roof, a supporting structure, a plurality of courses of overlapping slate laid on said supporting structure, a strip of roofing felt lying underneath each course of slate, a tapered cant strip lying underneath the roofing felt adjacent the upper end of each course of slate, and sealing material between the butts of the cant strips and the slate courses therebelow and between the overlapping margins of the roofing felt and the slate courses.

2. In a roof, a supporting structure, a plurality of courses of overlapping slate laid on said supporting structure, a strip of roofing felt lying underneath each course of slate, a tapered cant

strip lying underneath the roofing felt adjacent the upper end of each course of slate, and sealing material between the butts of the cant strips and the slate courses therebelow and between the overlapping margins of the roofing felt and the slate courses, said sealing material extending between the upper faces of the cant strips and the superimposed strips of roofing felt.

3. The herein described method of constructing a roof, which comprises laying a course of slate units on a supporting structure, applying a semi-fluid sealing material on the roof structure above the upper edge of the slate course, applying a cant strip to the roof structure above the sealing material and moving the cant strip in the direction of the slate course for extruding sealing material outwardly from the cant strip and the slate course, and applying a slate course in overlapping relation with the extruded sealing material for effecting a sealed joint between the overlapping margins of the slate courses.

HUGH LUCAS PARSONS.