Aug. 25, 1959 C. W. ADELT 2,900,929

ROOF CONSTRUCTION

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FIG. 1.

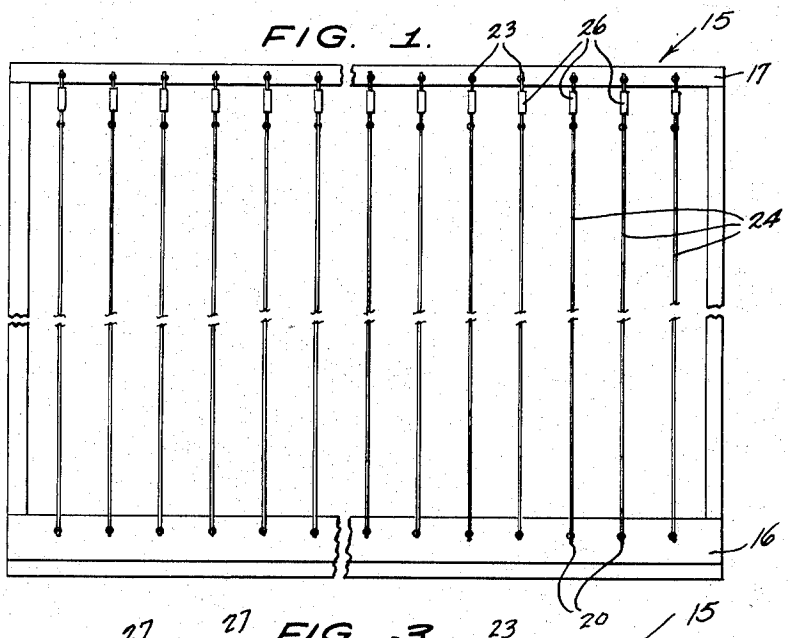


FIG. 2.

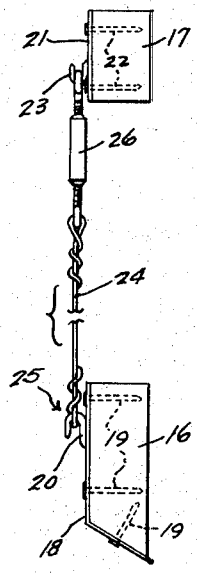
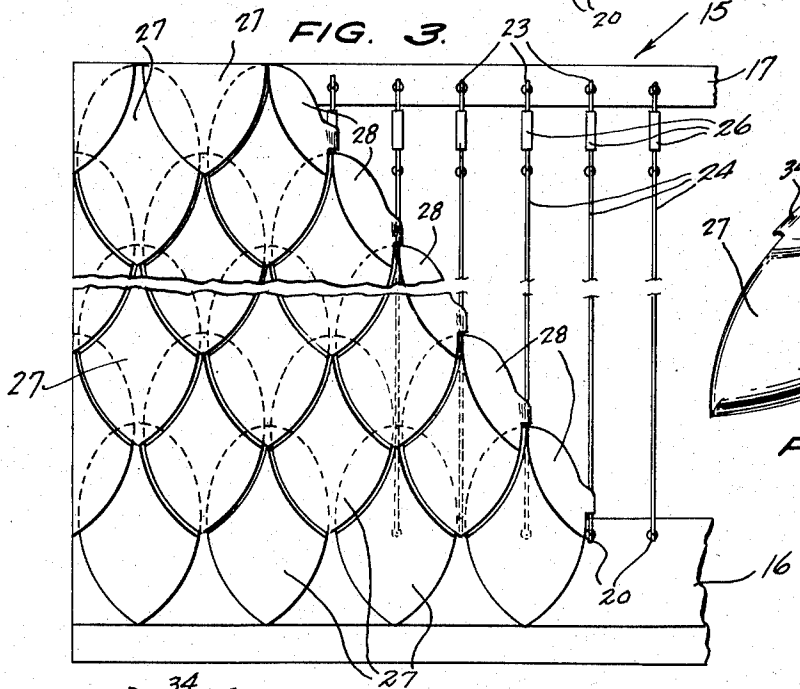


FIG. 3.



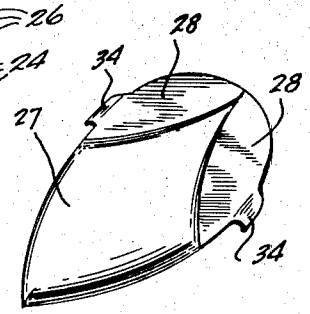


FIG. 4.

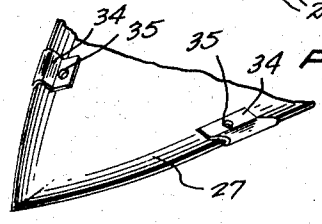


FIG. 5.

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FIG. 6.

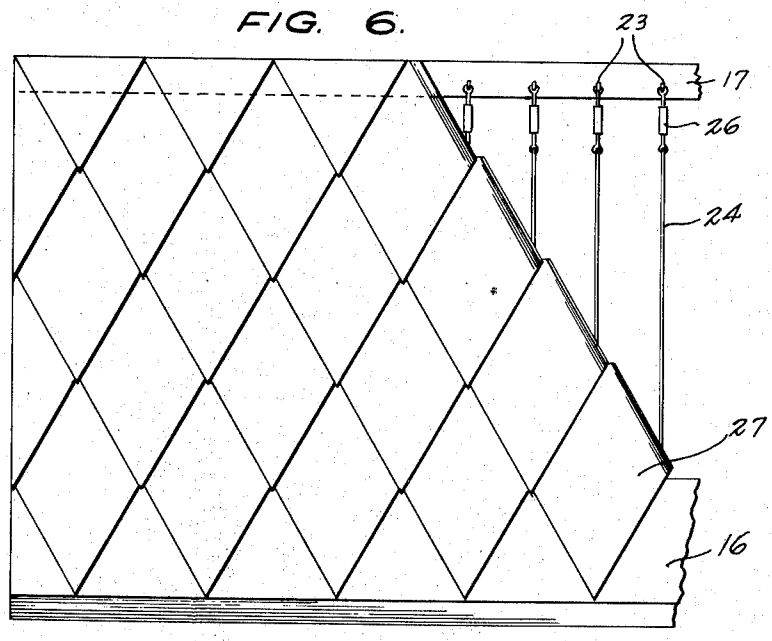


FIG. 7.

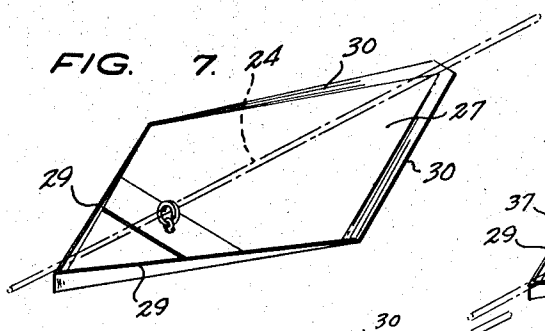


FIG. 8.

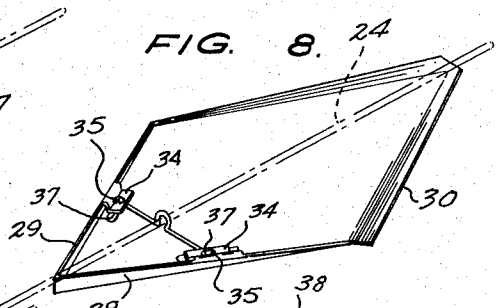


FIG. 9.

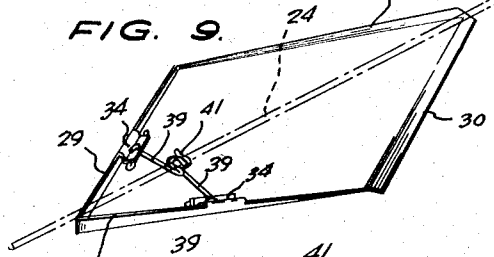


FIG. 11.

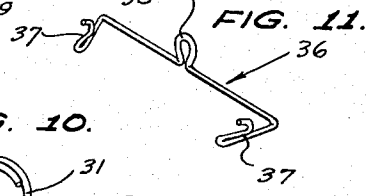


FIG. 10.

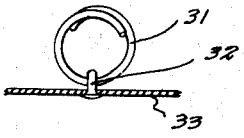
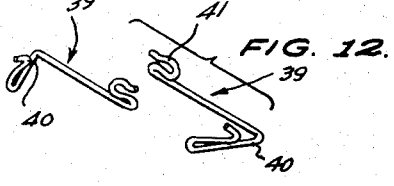


FIG. 12.



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ROOF CONSTRUCTION

Carl W. Adelt, Mays Landing, N.J.

Application August 6, 1954, Serial No. 448,240

2 Claims. (Cl. 108—17)

This invention relates to roof construction.

An object of the invention is to provide a roof construction in which the conventional rafters and sheathing are eliminated and in the construction of which no cutting and nailing of parts is required.

Another object of the invention is to provide a roof construction which may be installed upon any size or type of building by the mere assembling of prefabricated parts, without the necessity of the performance of skilled carpentry operations.

A further object of the invention is to provide a roof construction which may be set up, repaired, or altered from within the building, making unnecessary any dangerous work on the outside of a roof.

A still further object of the invention is to provide a roof construction which is easily and quickly set up, which is firmly held in place and which presents a novel and attractive appearance.

Other objects and advantages of the invention will appear from the following description considered in conjunction with the attached drawings in which:

Figure 1 is a plan view of the substructure of the roof construction of the present invention;

Figure 2 is a side elevational view of the assembly of Figure 1, on an enlarged scale;

Figure 3 is a plan view of the substructure of the present invention partially covered by shingles of oval shape;

Figure 4 is a top perspective view, on enlarged scale, of one of the oval shingles shown in Figure 3;

Figure 5 is a fragmentary bottom view of the shingle of Figure 4;

Figure 6 is a plan view of the substructure of the present invention partially covered by shingles of diamond shape;

Figure 7 is a bottom perspective view, on an enlarged scale, of one of the shingles of Figure 6, showing the ring type connecting means;

Figure 8 is a bottom perspective view of one of the shingles of Figure 6, on an enlarged scale, showing the connector wire by which the shingle is connected to the substructure;

Figure 9 is a bottom perspective view of one of the shingles of Figure 6, on an enlarged scale, showing the connector wire sections used in connecting the shingle to the substructure;

Figure 10 is a detailed view, on an enlarged view, of the ring attaching means of Figure 7;

Figure 11 is a perspective view, on an enlarged scale, of the connector wire of Figure 8; and

Figure 12 is a perspective view, on an enlarged scale, of the connector wire sections of Figure 9.

Referring to the drawings, the reference numeral 15 designates generally an upright substructure including a pair of members 16 and 17 arranged in longitudinal spaced relation. The member 16 is adapted to be secured along a wall plate of a building to be roofed and the member 17 is adapted to be secured along the complemental side of the building ridge pole. The surfaces of

the member 16 which face outwardly and downwardly when the member 16 is secured to the wall plate, are covered with a flashing 18, secured to the member 16 by appropriate fastening means 19. A plurality of anchoring elements or spaced hooks 20 project outwardly along the flashing 18. The surface of the member 17 which faces outwardly when the member 17 is secured to the ridge pole, is covered with a plate 21, which is secured to the member 17 by fastening means 22, and carries a plurality of anchoring elements or spaced hooks 23 projecting outwardly therefrom.

The substructure 15 also includes a plurality of spaced, flexible elements 24 which extend transversely of the members 16 and 17. Each element 24 has one end fixedly connected to the lower member 16 and has the other end adjustably connected to the upper member 17. Specifically, the one end of each element 24 is looped about the complemental hook 20 and fastened upon itself, as shown in 25, to connect the element 24 fixedly to the member 16 and the other end of each of the elements 24 is connected to the complemental hook 23 through an adjustable securing means or turnbuckle 26, to connect the element 24 adjustably to the member 17.

Superimposed upon the substructure 15 is a plurality of shingles 27 in the form of a decking. The shingles 27 may be of any suitable shape and are arranged so that each shingle partially overlaps adjacent shingles, the width of each shingle being approximately twice that of the distance between adjacent flexible elements 24. As shown in Figure 3, the shingles 27 are substantially oval in shape and of convex outward contour, having stop means or depressed sections 28 to accommodate the overlapping sections of the adjacent shingles 27. As shown in Figure 6, the shingles 27 are diamond shaped and have downturned edges 29 along two adjacent sides and stop means or upturned edges 30 along the two other sides. Each of the diamond shaped shingles 27 is arranged on the substructure 15 with the downturned edges 29 downward and the upturned edges upward. The upturned edges 30 of each shingle are thus overlapped by the downturned edges 29 of each of the two overlapping shingles 27 to make a watertight juncture between the shingles.

Means are provided for individually connecting the portion, unobstructed by the overlapping, of each shingle to an adjacent one of the flexible elements 24. The means may take any suitable form.

In the form shown in Figures 7 and 10, the means consists of an attaching element or split ring 31 pivotally secured in an eye 32 projecting outwardly from the under surface of a crosspiece 33 which extends transversely of the underside of the shingle 27 and is secured to the shingle by welding, brazing, or other suitable means. The ring 31 is slipped about the adjacent flexible element 24 to secure the shingle 27 to the substructure 15.

In the form shown in Figures 8 and 11, a pair of opposed attaching elements or ears 34 extend inwardly of the under face of the shingle 27, from opposite positions on the lateral edges thereof, each ear being provided with an aperture 35 formed therein. A fastening element or connector wire 36 having hooks 37 formed on each end and a loop 38 formed intermediate its ends, extends between the ears 34 and each hook 37 is engaged in the aperture 35 of the adjacent ear 34 to secure the wire 36 to the under face of the shingle 27. The loop 38 is circumposed about the adjacent flexible element 24 to secure the shingle 27 to the substructure 15.

In the form shown in Figures 9 and 12, ears 34 are employed but, instead of the connector wire 38, a pair of fastening elements or connector wire sections 39 are used. Each of the sections 39 has a hook 40 formed on one end and a clip 41 formed on the other end. The hook 40 of one section 39 is engaged in the aperture 35 of one

of the ears 34 while the hook 40 of the other section 39 is engaged in the aperture 35 of the other ear 34 and the clips 41 of both sections 39 engage the adjacent flexible element 24 to secure the shingle 27 to the substructure 15.

Any of the means for connecting the shingles 27 to the adjacent flexible elements 24 may be used with any shape of shingle 27 employed. It is to be noted that the oval shaped shingle 27, shown in Figures 4 and 5, is provided with ears 34 to adapt it for connecton to a flexible member 24 by either a connector wire 36, as shown in Figure 11, or a pair of connector wire sections 39, as shown in Figure 12. However, the oval shaped shingle 27 may, as readily, be provided with connecting means embodying a split ring 31, as shown in Figures 7 and 10.

To install the roof construction of the present invention upon a building, the substructure 15 is first set up by securing the member 16 along the wall plate of a wall of the building with the flashing 18 outermost and then securing the member 17 along the adjacent side of the ridgepole of the building with the plate 21 outermost. A flexible element 24 is then fixedly secured at one end to each of the hooks 20 on the member 16, as shown in 25, and the other end of each flexible member 24 is adjustably secured to the adjacent hook 23 on the members 17 through the turnbuckle 26, to complete the substructure 15. When the flexible elements 24 are originally connected, the turnbuckles 26 are adjusted so that there will be a small amount of play in the elements 24.

The shingles 27 may now be mounted upon the substructure 15 by engaging them upon the flexible elements 24 by the connecting means with which they are provided. First, the lowest row of shingles 27 is put in place, the shingles being attached to every other flexible element 24 with the lower portion of the shingles 27 overlapping the flashing 18. The next to the lower row of shingles 27 is then put in place, the shingles being attached to the elements 24 positioned between the elements 24 to which the shingles 27 of the lower row are attached, the appropriate sections of the lower portion of each shingle of the next to the lower row overlapping the sections of the upper portions of the shingles below and to either side of it in the lower row which are adapted to receive the overlapping sections.

The next higher row of shingles is then put in place, the shingles in this row being attached to the elements 24 to which the initial row of shingles was attached and the appropriate sections of the shingles 27 being overlapped upon the shingles 27 below, as above described. Successive rows of shingles 27 are thus added, in the alternating fashion above described, until the member 17 is reached. When all shingles 27 are in place on the substructure 15, the turnbuckles 26 are tightened to anchor the shingles 27 solidly in their overlap positions and form a rigid roof panel. A ridge cap of conventional character is secured over the upper portion of the upper rows of shingles 27 on each side of the ridge pole of the building to seal the juncture of the roof panels against leakage.

As will be apparent from the foregoing description, the roof construction of the present invention is adapted to any size or form of roof in which shingles are ordinarily used. Its use makes unnecessary the conventional rafters and sheathing and the fitting and nailing of parts, thus effecting savings in both labor and material. Since the setting up of the roof construction of the present invention involves merely the assembly of prefabricated

parts, no skilled labor is required. Moreover, the shingles 27 may be put in place on the elements 24 from a position beneath the roof, eliminating the necessity of dangerous work on the top of the roof. When all shingles are set in place and the elements 24 are tightened, the shingles 27 are held firmly in their overlapping position and form a rigid roof panel which presents a novel and attractive appearance.

The thus described operation is for a new roof construction. Where a reroofing is required the substructure 15 is reversed or positioned so that the member 16 is the upper one and the member 17 is the lower one, and the decking of shingles 27 is assembled from the member 16 to the member 17.

What is claimed is:

1. A roof construction comprising a substructure including a pair of members arranged in longitudinal spaced relation, and a plurality of spaced flexible elements extending transversely of said members and each element having one end fixedly connected to one of said members and having the other end adjustably connected to the other of said members, a plurality of shingles in the form of decking superimposed upon said structure, said shingles being arranged in staggered relationship, each of said shingles being provided on opposite side edges with wire attaching means slidably connected to corresponding flexible elements, and additional fastening elements connected to opposed wire attaching means of each shingle and slidably connected to an intermediate flexible element whereby each shingle is connected to three flexible elements, said shingles being provided with stop means abutting the next lower shingle to position the shingles in predetermined relationship.

2. A roof construction comprising a substructure including a pair of members arranged in longitudinal spaced relation, a plurality of anchoring elements arranged in spaced relation along each of said members and carried thereby, and a plurality of spaced flexible elements arranged transversely of said members, each element having one end fixedly connected to an anchoring element on one of said members and having an adjustable securing means on the other end connected to an anchoring element on the other of said members, a plurality of shingles in the form of decking superimposed upon said structure, said shingles being arranged in staggered relationship, each of said shingles being provided at opposite side edges with wire attaching means slidably connected to corresponding flexible elements, and additional fastening elements connected to opposed wire attaching means of each shingle and slidably connected to an intermediate flexible element whereby each shingle is connected to three flexible elements, said shingle elements being provided with stop means abutting the next lower shingle to position the shingles in predetermined relationship.

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