J. A. WHEELER.

SHINGLE.

APPLICATION FILED OCT. 26, 1910. RENEWED MAY 29, 1914.

1,123,449. Patented Jan. 5, 1915.

Fig. 1.

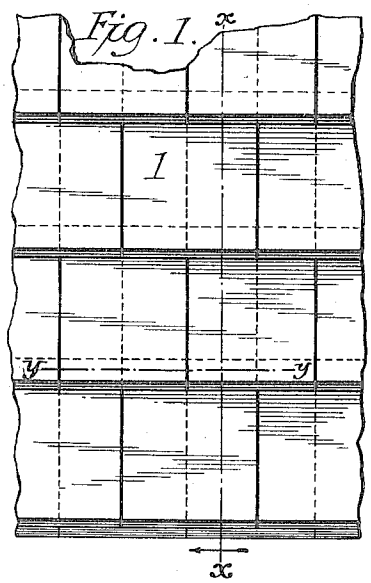


Fig. 3.

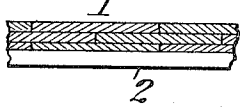


Fig. 2.

Fig. 4.

Fig. 5.

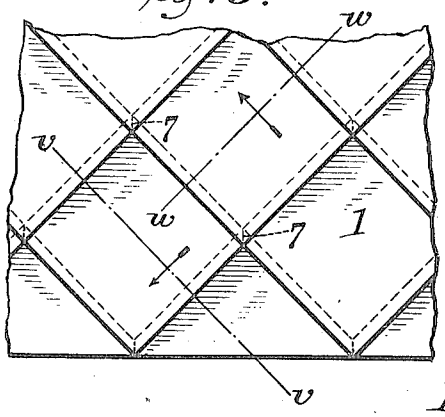


Fig. 6.

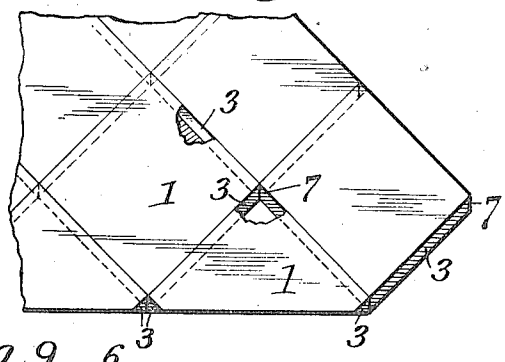


Fig. 9.

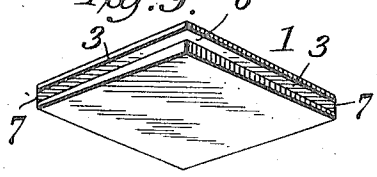


Fig. 7.

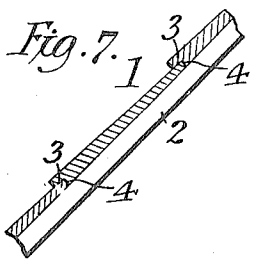


Fig. 8.

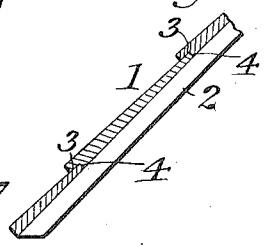
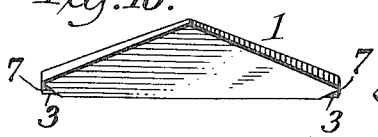


Fig. 10.



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SHINGLE.

1,123,449. Specification of Letters Patent. Patented Jan. 5, 1915.

Application filed October 26, 1910, Serial No. 589,251. Renewed May 29, 1914. Serial No. 841,961.

To all whom it may concern:

Be it known that I, JAMES A. WHEELER, a citizen of the United States, and resident of the county of Somerset and State of New Jersey, have invented certain new and useful Improvements in Shingles, of which the following is a specification.

This invention relates to improvements in shingles, and it has for its object to provide a shingle of improved construction whereby when the shingles are relatively assembled in overlapping position the existence of spaces between the shingles and the clapboard or base structure will be obviated and the assembled set of overlapping shingles will form a composite structure with flat plane top and bottom surfaces and without spaces within or between the members of the composite structure.

My invention has special relation to shingles which are formed of a fireproof and non-fragile composition, such as a fibrous reinforced plastic material, which are adapted to be readily pressed or molded into the conditions of structure as comprised in my improvements.

In the drawings—Figure 1 is a face view of a set of assembled shingles constructed according to my invention. Fig. 2 is a detail sectional view, taken on the line *x—x*, Fig. 1. Fig. 3 is a detail cross-section, taken on the line *y—y*, Fig. 1. Fig. 4 is a detail perspective view showing the under side of the improved shingle. Fig. 5 is a face view of a set of assembled shingles of modified form according to my improvements. Fig. 6 is a view of the under side of the construction shown in Fig. 5, parts being broken away to show the overlapping construction. Fig. 7 is a detail cross-section, taken on the line *w—w*, Fig. 5. Fig. 8 is a detail cross-section, taken on the line *v—v*, Fig. 5. Fig. 9 is a detail perspective view showing the under side of one of the square shingles of the construction illustrated in Figs. 5 and 6. Fig. 10 is a detail perspective view showing the under side of the triangular shingles of the construction illustrated in Figs. 5 and 6.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates the complete shingle units, which are of tapering body construction and are relatively secured in overlapping position against the face and to the clapboard or base structure, 2, in the usual manner. The shingle 1, at its part which overlaps the next adjoining shingle, is recessed, as at 3, to accommodate the underlying portion of the adjoining shingle. This recess corresponds in area and dimensions to the tapering underlying portion of the next adjoining shingle, which is received by said recess, and it forms a cross shoulder, as at 4, against which the cross terminal edge of the underlying portion of the adjoining shingle abuts. The relative construction and arrangement is thus such that, when an assembled set of the shingles is secured in overlapping position against the face of the clapboard or base structure 2, the set of shingles presents a uniform plane under surface continuously corresponding to the uniform plane face of the base structure 2 and no spaces exist between the overlapped shingles and said base structure for the accumulation of moisture or air.

In the usual type of elongated rectangular tapering shingles, as in Figs. 1 to 4, inclusive, the recess 3 preferably extends over more than one-half the under surface of the shingle, at what is in the ordinary or usual construction the thickest part, whereby when the set of shingles is assembled in overlapping position a triple thickness will exist at the joint points adjacent the lower terminal end of the outer overlapping shingle, as shown in Fig. 2, thus enhancing the conditions of strength and moisture-proof status at such joints.

It will be understood that my improvements are adaptable to shingles of various shapes and sizes which may be generally employed, and in Figs. 5 to 10, inclusive, I have illustrated the structural conditions in the adaptation of my improvements to an assemblage of overlapping shingles of square or triangular form. Shingles of square form are usually tapered from the vertex of one corner angle to the opposite corner angle (instead of being tapered transversely from edge to edge, as in the case of shingles of the usual elongated rectangular form illustrated in Fig. 1), and shingles of triangular form are usually tapered from the edge constituting the base of the triangle to the angle corner at the vertex of the angle. Such square shingles overlap at two right angular edges, and

therefore the recess 3 is formed at two of such edges, the two recesses being at right angles and merging at the corner of the shingles which is of greatest thickness (as indicated at 6). In this construction, the corners of the overlapping recessed portions of the shingle, at the ends of the respective recesses 3, opposite their merging point at the corner 6, are beveled, as at 7, to provide a miter and close abutment at the adjacent corners of adjoining shingles. In the triangular form of shingles, as employed in the construction illustrated in Figs. 5 and 6, the recess 3 is provided at opposite corners of the edge of the shingle which is thickest, and the abutment shoulder 4 is at an acute angle to the edge which forms the base line of the triangle, so that the recess and abutment edge of the triangular shingle will be in the line of continuation of the recess and abutment edge of the square shingle. Under the conditions of construction of square and triangular shingles, according to my invention and improvements as just described, shingles of these forms can be assembled in the manner shown in Figs. 5 to 8, inclusive, to produce the same relative conditions as those above described with relation to the usual form of elongated rectangular shingles, and such square and triangular form of shingles will overlap at the outer face of the set of assembled shingles and will form a uniform plane under surface corresponding to the face of the base structure 2 to which the shingles are secured.

The fireproof and non-fragile composition, of which my improved shingles are formed, may be of any suitable or adapted materials but preferably comprises asbestos as the fibrous element mixed with a base and a chemical binder for the plastic mass which is pressed or molded into the structure as comprised in my improvements. The distinctive characteristics of the fireproof and non-fragile body composition of the shingle, formed of a fibrous reinforced plastic material, are an important feature in the production of the simple and inexpensive type of shingle as comprised in my improvements. For instance, in contradistinction to clay tiles, the latter are ribbed to impart the requisite conditions of strength under their fragile nature and are essentially of excess thickness considerably beyond that of the ordinary wood shingle, whereas in an improved shingle of the construction and material as comprised in my improvements, formed of a fibrous reinforced plastic material which is fireproof and non-fragile, no ribbing or other contours are necessary for strength and no excess over the usual thickness of the ordinary wood shingle is required. The improved shingle is thus adaptable to the construction herein set forth, having flat plane top and bottom surfaces over the full area of its faces and the reduced and shouldered portion transversely of its full width between side edges to form a part-section overlap, whereby when the shingles are assembled in succession as hereinbefore described a continuous flat plane laying surface conforming to the flat plane supporting or base surface is provided and no spaces exist within or between the members of the composite structure. The flat plane under surface of the overlapping reduced part-section, which meets the flat plane top surface of the corresponding underlying portion of an adjoining shingle, enables the effective meeting of all the conditions of overlapping which are presented in the use of the ordinary wood shingles, for while in wood shingles the adjoining wood surfaces have a relative adhesive or holding action at their overlapping sections the flat plane under surface and the corresponding top surface of adjoining shingles constructed according to my invention provide a contacting area over the full surface of the meeting faces and thus form a tight surface joint without intervening spaces such as would be caused by ribs or recessed portions as are required in the case of clay tiles used as a substitute for shingles.

The advantages of my invention and improvements will be readily understood. The improved shingles can be readily manufactured, with economy in material, and when assembled in relative overlapping position produce enhanced conditions of strength and proof against decay at the lapping joints by action of moisture or air.

I do not desire to be understood as limiting myself to the detail construction and arrangement of parts as herein shown and described, as it is manifest that variations and modifications therein may be resorted to, in the adaptation of my invention to varying conditions of use, without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly fall within the scope of my invention and the terms of the following claim.

Having thus described my invention, I claim and desire to secure by Letters Patent:

As an improved article of manufacture, a shingle formed of a fireproof and non-fragile composition consisting of a fibrous reinforced plastic material, having its body thickness not exceeding the usual thickness of the ordinary wood shingle and having flat plane top and bottom surfaces over the full area of its faces, the under face being reduced and shouldered transversely of its full width between side edges to provide a part-section overlap forming a continuous flat plane surface beneath which is received

the part-section and flat plane surface of a corresponding shingle when laid in succession, and whereby in a succession of such shingles a continuous flat plane laying surface conforming to the flat plane supporting or base surface is provided and no spaces exist within or between the members of the composite structure.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JAMES A. WHEELER.

Witnesses:
BESSIE COSTIGAN,
CHARLES A. TAUSSIG.