H. ABRAHAM.

INTERLOCKING SHINGLE.

APPLICATION FILED MAY 6, 1921.

1,410,867. Patented Mar. 28, 1922.

Fig. 1,

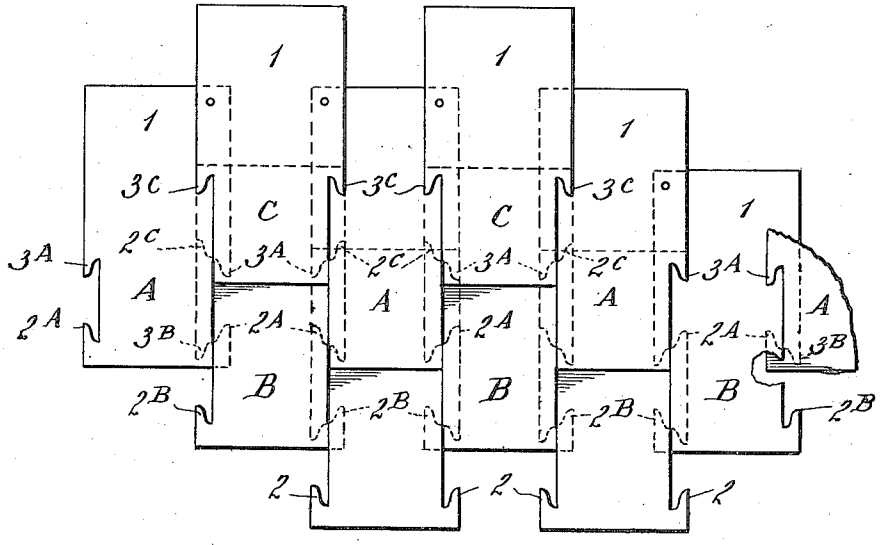


Fig. 2,

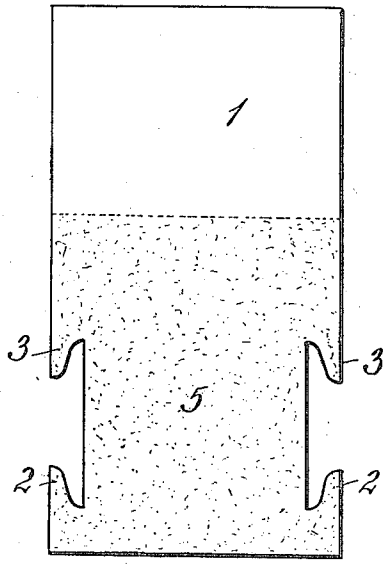
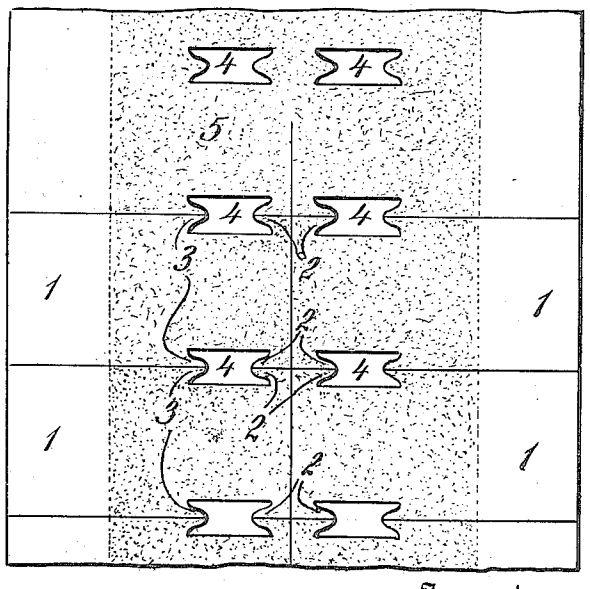


Fig. 3.



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UNITED STATES PATENT OFFICE.

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INTERLOCKING SHINGLE.

1,410,867. Specification of Letters Patent. Patented Mar. 28, 1922.

Application filed May 6, 1921. Serial No. 467,467.

To all whom it may concern:

Be it known that I, HERBERT ABRAHAM, a citizen of the United States, residing at the city, county, and State of New York, have invented certain new and useful Improvements in Interlocking Shingles, of which the following is a specification.

This invention relates to improvements in interlocking shingles, and particularly to such shingles made of so-called "prepared roofing" consisting of a felt or fabric foundation, saturated and coated with bituminous compositions, and generally faced with granules of mineral matter.

The principal objects of the invention are to provide roofing elements of such construction that they can be laid in interlocking relation, with the lower corners of each element held tightly down so that the butts cannot be blown, slipped or pulled out of position; that when so laid they will have sufficient overlap at all joints to produce a water and weather-tight roof covering; that the lower ends of the shingles may freely expand or contract without wrinkling or buckling because of any expansion or contraction of the underlying roof boards; and that the roof covering so formed will present an attractive ornamental appearance consisting of exposed portions in staggered relation to one another.

I attain these objects, as well as others, by means of the novel features of construction hereinafter described and illustrated in the accompanying drawings, which show a preferred embodiment of the invention, and in which,

Figure 1 is a plan view of a plurality of the shingles laid in interlocked relation;

Fig. 2 is a plan view, on a larger scale, of one of the shingles; and,

Fig. 3 is a fragmentary plan view of a web of prepared roofing indicating the manner of manufacturing the shingles.

Referring to the drawings, 1 indicates a shingle composed of prepared roofing material, which in the preferred embodiment of the invention is of substantially oblong shape.

The lateral edges of the lower half of the shingle are undercut or indented at opposite points to form two hooks 2 and 3 spaced apart in each edge, which hooks serve as means for interlocking the shingle, when laid, with the two laterally adjacent shingles of both the next upper and the next lower courses, and at the same time serve to properly line up the shingles by automatically spacing them laterally and exposing them the proper distance to the weather.

In laying the shingles, as indicated in Figure 1, the lower hooks 2—2 of each shingle of any course as for example the course A, are inserted underneath and in engagement with the respective upper hooks 3 of the laterally adjacent shingles of the next lower course B, so that the marginal edges of the shingles A lie on top of those of the shingles B and overlap to an extent of approximately double the depth of the indentations, as can be seen at the right hand side of Figure 1, where one of the shingles is shown partly broken to disclose the manner of engagement of the hooks and the extent of the lap. Similarly the lower hooks 2—2 of the shingles of the next upper course C lie below and in engagement with the upper hooks 3 of the shingles of course A. In this manner a roof covering is provided in which the shingles are all interlocked, with the lower corners of each shingle securely held down, and with an adequate, uniform, lap at the joints to prevent leakage.

A roof covering formed of such shingles and laid in the manner described has an attractive ornamental appearance due to the fact that the exposed portions of the shingles are of uniform rectangular shape and are arranged in staggered relation, that is the butts or lower ends of the shingles of every second course coming approximately in line the middles of the exposed portions of the shingles of the alternate courses.

I have found in practice that with interlocking shingles of this character, having overall dimensions of 9 by 17 inches and having a width of 7 inches between opposite indentations in the lateral edges, measuring 3 inches vertically along each edge between the hooks and 5 inches maximum vertical distance of each indentation, so that when laid as described and exposed to the weather 10 inches from the butts, it will require only 206 shingles, aggregating 219 sq. ft. of shingle material to weatherproofly cover 100 sq. ft. of roof area. Using a No. 50 dry felt impregnated and coated on both sides in the customary manner, and surfaced with slate granules for a distance of 11 inches from the butts (embedded at the rate of 26 lbs.

per 100 sq. ft.), the completed shingles will weigh 142½ lbs., against 80 lbs. for slate roll roofing (108 sq. ft. in area) and 222 lbs. for 8 x 12¾ inch individual shingles (300 sq. ft. in area), in all cases made of the same basic materials and furnished in sufficient quantities to weatherproofly cover 100 sq. ft. of roof surface. It is to be understood, however, that I do not limit myself to the foregoing weights or dimensions in manufacturing said interlocking shingles.

My improved shingles may be economically manufactured with a minimum waste of roofing material and with a saving of mineral facing matter by laying out the shingles, end to end, on a web of sufficient width to accommodate two rows of shingles, or multiples thereof, and cutting the web along intersecting longitudinal and transverse lines as indicated in Figure 3, the web being previously provided with rows of openings 4 of such shape and so located that when the shingles are severed, the divided halves of said openings will form indented hooks 2—3 in adjacent edges. Before the shingles are severed a facing of mineral granules 5 is applied to the web, preferably in a band of such width and so disposed that when the shingles are severed substantially only that portion of each shingle which is intended to be exposed when the shingle is laid will be covered with the facing material.

Because of the novel method of fastening the butts it is not necessary to rely upon the rigidity of the shingle material to hold the shingles in place. A lighter weight shingle material will afford the same protection as the heavier types of prepared roofing shingles at present in use.

Although Figure 1 shows the shingles fastened to the roof with two nails, one driven along each side of the upper concealed portion, nevertheless good results may be attained by fastening with but one nail driven in the center of the upper concealed portion, thereby effecting an economy in the use of nails.

While I have shown my improvement embodied only in a shingle of rectangular shape, I am aware that it may be applied to shingles in strip form and to unit shingles of various other shapes without departing from the invention.

What I claim is:

1. A shingle having a pair of hooks indented in opposite parts of each of its lateral marginal edges, the hooks of each pair pointing towards each other.

2. A shingle having a pair of hooks indented in opposite parts of each of its lateral marginal edges, the hooks of each pair being spaced apart and extending in opposite directions.

3. A shingle having a pair of hooks indented in opposite parts of the lower half of each of its lateral marginal edges, the hooks of each pair being spaced apart and extending in opposite directions.

4. A shingle having a pair of hooks indented in each of its lateral marginal edges, each of which hooks, when the shingles are laid, is adapted to engage a companion hook of a laterally adjacent shingle of the next upper or lower course in such manner as to lock the shingles in place so that they cannot be pulled apart but are free to expand or contract.

5. A roof covering composed of shingles each having a pair of hooks indented in each of its lateral marginal edges, and laid with the lower hooks of each shingle of any course inserted underneath and in engagement with the upper hooks of the adjacent shingles of the next lower course, whereby to form a covering in which each shingle is interlocked with the laterally adjacent shingles of both the next lower and the next upper courses, and with the lower corners of each shingle held down.

6. A roof covering composed of shingles each having a pair of hooks indented in each of its lateral marginal edges, and laid with each shingle interlocking with the laterally adjacent shingles of both the next upper and the next lower courses, and with the butts of the shingles of every second course coming approximately in line with the middles of the exposed portions of the shingles of the alternate courses.

HERBERT ABRAHAM.