Nov. 8, 1949 W. L. ROWE 2,487,593

SELF-ALIGNING SHINGLE

Filed April 5, 1948

Fig. 1.

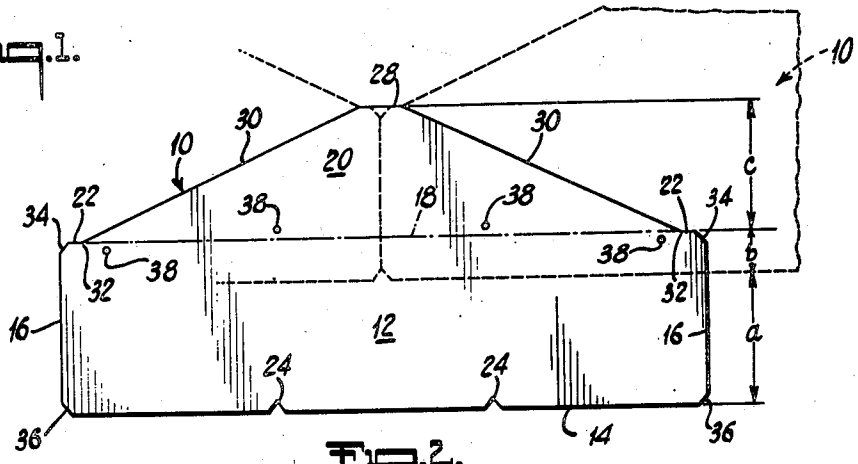


Fig. 2.

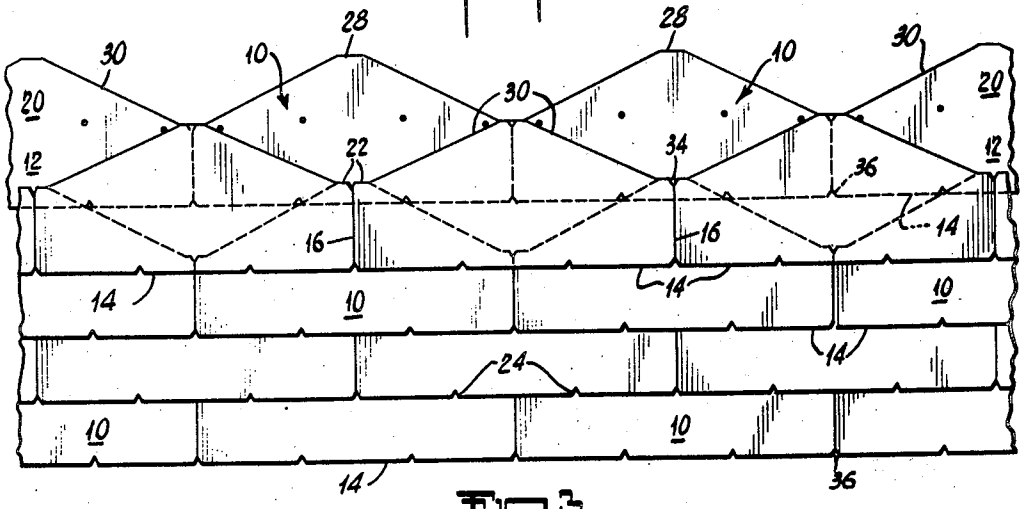


Fig. 3.

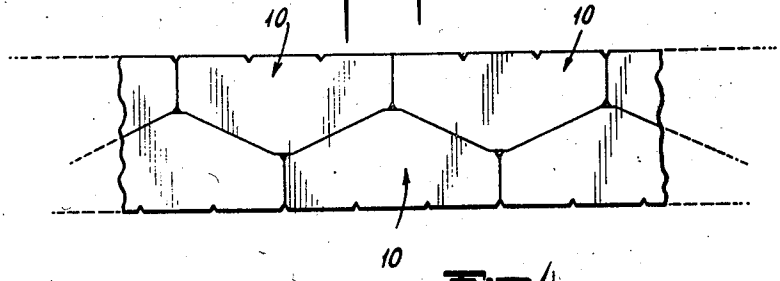
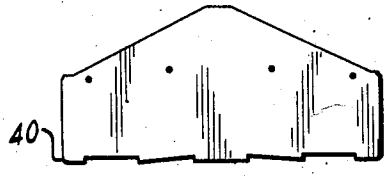


Fig. 4.



INVENTOR
WILLIAM L. ROWE.
BY Virgil C. Kline
ATTORNEY

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SELF-ALIGNING SHINGLE

William L. Rowe, New York, N. Y., assignor to Johns-Manville Corporation, New York, N. Y., a corporation of New York

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3 Claims. (Cl. 108—7)

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The instant invention relates to shingles to be laid in overlapping courses on a roof or side wall and is particularly concerned with rigid but relatively frangible shingles, for example, those made of a hardened, compressed, asbestos-cement composition and known in the art as "asbestos-cement shingles." However, it will be appreciated that the invention is not limited to the particular composition of the base material and that it may have the same or similar advantages when applied to other shingles, such as those composed of an asphalt-impregnated felt base carrying coating and surfacing treatments.

The invention has for its principal object the provision of improved shingles of a character to provide maximum coverage with a minimum of material and to have self-aligning features. A shingle of this general type which has achieved outstanding commercial success has a substantially rectangular lower or butt section defining the area of the shingle to be exposed when laid and also a portion of the area to be overlapped, and a pointed head section formed integrally with the lower section, the slanting sides of the pointed head extending to the ends of the rectangular section. In laying shingles of this type the upper corners of the shingles of a course are placed in contiguous relationship and in a position to overlie the apex of the pointed head of a shingle of the underlying course. When positioned in this manner the shingles are automatically properly aligned on the roof. The pointed head section of the shingle has its greatest extent where it underlies the joint between the adjacent shingles of the next lower course, hence providing the maximum coverage at the point where maximum coverage is required.

It has been found that due to the rough handling to which the bundles of shingles are exposed, particularly during shipping and delivery to the job, the sharp corners of the shingles are often broken off to greater or lesser extents, making it difficult to take advantage of the self-aligning feature. Also, where the apex of the pointed head is broken off, as is frequently the case, the amount of headlap is reduced with the danger that leakage may occur.

An object of the invention is the provision of a shingle of this general type but which substantially eliminates or at least greatly reduces, the possibility of the shingle being damaged even under rough handling, to an extent which will interfere with the self-aligning feature, or adversely effect the weatherproof characteristics of the roof.

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Another object of the invention is the provision of a shingle in which the upper or head section is of trapezoidal shape having an upper edge parallel to the base and edges slanting therefrom to intersect the base section at points spaced from the corners. In such shingles the sharp points of the head portions are eliminated and full coverage at the joint between overlying shingles is insured. Also, in the preferred embodiment at least the upper corners of the rectangular portion are equally chamfered, thus eliminating sharp corners which are likely to become broken off to destroy the self-aligning characteristics of the shingle. The lower corners of the rectangular section adjacent the butt edge may be similarly chamfered to insure uniformity of appearance.

My invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the more detailed description of preferred embodiments of the invention which are to follow and to the accompanying drawings in which:

Fig. 1 is a plan view of a shingle embodying the instant invention;

Fig. 2 is a diagrammatic plan view illustrating a plurality of shingles of Fig. 1 laid in overlapping relationship on a roof or wall structure;

Fig. 3 is a diagrammatic plan view depicting the manner in which the shingles may be cut from a sheet of material; and,

Fig. 4 is a view similar to Fig. 1 illustrating a modification of the shingle.

Referring now to the drawings and particularly to Fig. 1, a shingle 10 embodying the important features of the instant invention is illustrated. As previously pointed out, the shingle may be made of any suitable base stock but inasmuch as the problem solved by the instant construction is most frequently encountered in asbestos-cement shingles, such shingles are specifically referred to. The shingle 10 comprises a substantially rectangular, lower or butt section 12 defined in part by butt edge 14 and end edges 16. The upper boundary of the lower section is defined by the line of juncture of the section (see dot-dash line 18) with a preferably integral, trapezoidal head section 20 and shoulders 22. In the embodiment of Fig. 1 butt edge 14 is provided with spaced notches 24 whereby the edge simulates the appearance of the butt edges of a plurality of individual shingles laid in course-wise, adjacent relationship. The lower or butt section of the shingle includes the entire area to be exposed below the butt edges of an overlying

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course when the shingle is laid, the width of this area being represented by the dimension *a*. The remainder of the lower section, the width of which is represented by dimension *b*, together with the trapezoidal upper section 20 having a width *c*, defines the headlap area or area to be covered by shingles of a next higher course. Dimensions *a* and *c* are substantially equal. The width of the shingle represented by the dimension *b* is at least equal to the width of overlap required at all points of the roof to prevent the passage of moisture between the overlapping shingles. Trapezoidal section 20 has an upper, centrally located edge 28 in substantial parallelism to butt edge 14 and slanting side edges 30 meeting the line 18 of juncture between the upper and lower sections at points 32. The distances between points 32 and the ends of the shingles (i. e. the intersection of the projection of ends 16 and shoulders 22 where the corners are chamfered as shown in Fig. 1) are preferably equal and their combined length is substantially equal to the length of edge 28.

The upper corners of the rectangular portion are preferably cut off or equally chamfered, as indicated at 34. The lower corners may be similarly chamfered, as indicated at 36, the chamfers preferably being at the same angle and of the same depth as the corresponding sides of notches 24. Where the shingles are made of a hard, frangible material, such as asbestos cement, preformed nail holes 38 are provided in the overlapped zone in such positions that the nails will not be driven through shingles of underlying courses.

Shingles of the form described above are laid on a roof or side wall in the manner illustrated in Fig. 2. Thus the shingles are laid in overlapping courses on a suitable roof or wall substructure, the shingles of each course being in lengthwise, abutting relationship with their chamfered, upper corners in alignment to form a V. The shingles of each course are laid so that the points of juncture 32 between the slanting edges 30 and shoulders 22 overlie the points of juncture of the parallel edges 28 and slanting edges 30 of the shingles of the lower course, whereby the shingles are automatically aligned and the width of the exposed area is automatically determined. As many courses are laid in this manner as are necessary to complete the roof.

It will be observed that the full amount of headlap is obtained at the juncture between the overlapping shingles. At the same time at least the required amount of headlap is provided throughout the remaining portions. Thus the overlap between courses is such as to prevent passage of moisture to the roof boards without, however, the presence of an excess of the roofing material where it is not necessary. Inasmuch as the upper edge of the head portion is of substantial length, there is little danger of breakage of the shingle to an extent which would prevent the full headlap from being obtained. The chamfered corners of the butt sections of the shingles similarly greatly reduce the likelihood of injury to the shingles to an extent which would seriously interfere with their self-alignment features or spoil their appearance. The butt edge of a course of shingles of the form shown in Figs. 1 and 2 provides a uniform appearance quite similar to the butt edge of a course of slate shingles, or the like.

Referring to Fig. 4 a modified butt edge is

shown which, however, incorporates chamfered corners 40, similarly as in the other form. In this instance the butt edge intermediate the corners is provided with a succession of projections and recesses to more closely simulate the irregular appearance of the butt edge of a course of wooden shingles, for example. The shingle in other respects is the same as in Fig. 1.

The manner in which the shingles may be cut from a strip of the base material with a minimum of waste is diagrammatically illustrated in Fig. 3. Thus two lanes of the shingles may be cut from a sheet of appropriate width, the shingles of adjacent lanes interfitting. The only waste material is a comparatively small amount resulting from the chamfered corners of the rectangular portion and the notches in the butt edge. The shingles of the form of Fig. 4 may be similarly cut from the strip, the only additional waste being that required to provide the irregular butt edge. It will be appreciated that, although the base stock has been shown as being of a width to accommodate only two lanes of shingles, it can be of a width to accommodate four lanes, or other multiples of two.

Having thus described my invention in rather full detail, it will be understood that these details need not be strictly adhered to but that various changes and modifications may suggest themselves to one skilled in the art, all falling within the scope of the invention as defined by the subjoined claims.

What I claim is:

1. A shingle comprising a substantially rectangular section having a longitudinal upper edge, said section defining an exposure area and a portion of an area to be overlapped by shingles of a next higher course; and an integral, trapezoidal upper section having an upper edge parallel to said longitudinal upper edge of the rectangular section, and straight edges slanting from said upper edge of the upper section outwardly to meet said rectangular section at points spaced from the ends thereof, the sum of said spacings being substantially equal to the length of the uper edge of the upper section.

2. A shingle comprising a substantially rectangular section having a longitudinal upper edge, said section defining an exposure area and a portion of an area to be overlapped by shingles of a next higher course; and an integral trapezoidal upper section having an upper edge parallel to said longitudinal upper edge of the rectangular section, and straight edges slanting from said upper edge of the upper section outwardly to meet said rectangular section at points spaced from the ends thereof, the sum of said spacings being substantially equal to the length of the upper edge of the upper section, the upper corners of said rectangular section being chamfered.

3. A shingled construction comprising courses of shingles laid in overlapping relationship; each of said shingles comprising a substantially rectangular section having a longitudinal upper edge, and an integral trapezoidal upper section having an upper edge parallel to said longitudinal upper edge of the rectangular section, and straight edges slanting from the upper edge of the upper section outwardly to meet said rectangular section at points spaced from the ends thereof, the sum of said spacings being substantially equal to the length of the upper edge of the upper section; the upper corners of the rectangular sections of the shingles of a course

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lying in continguous relationship, and the points of juncture of the slanting edges with the rectangular sections of the shingles of a course overlying the points of juncture of the upper edges of the upper sections and the slanting edges of shingles of the next lower course.

WILLIAM L. ROWE.

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The following references are of record in the file of this patent:

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