June 25, 1940. C. F. AMES, JR 2,205,679

SHINGLE

Filed Feb. 23, 1938

Fig. 1.

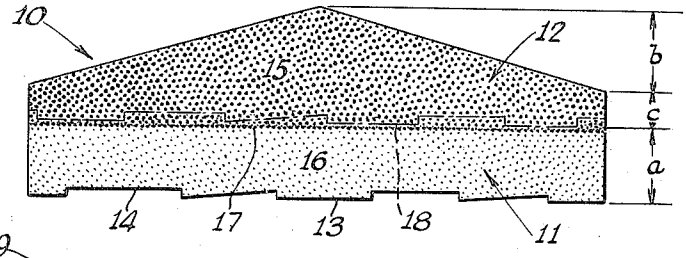


Fig. 2.

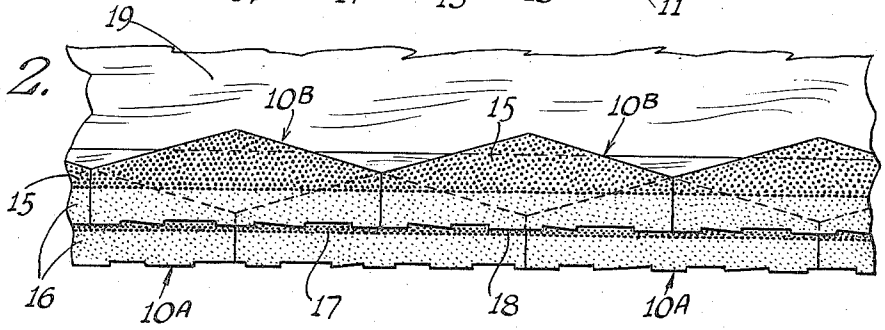


Fig. 3.

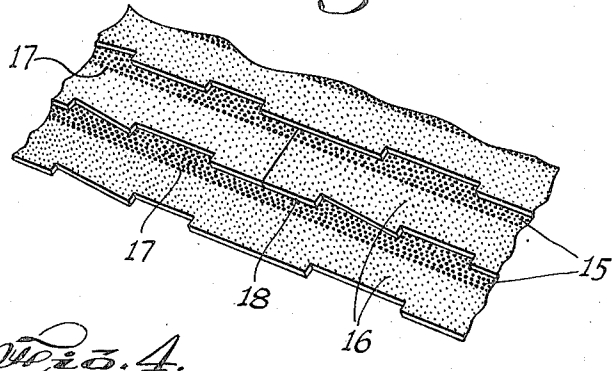
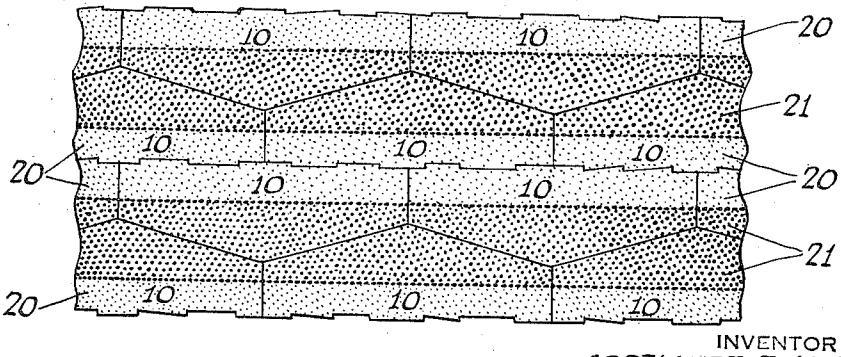


Fig. 4.



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SHINGLE

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Application February 23, 1938, Serial No. 192,093

8 Claims. (Cl. 108—7)

My present invention relates to prepared strip shingles to be laid in overlapping courses on a roof or a side wall and, more particularly, to strip shingles cut from a continuous sheet of asphalt impregnated felt roofing material.

Roofing of the type referred to above is conventionally prepared from a base material comprising felt, such as rag felt, asbestos felt, or the like, saturated with a relatively low melt-point asphalt, and carrying, on at least its upper face, a coating of a high melt-point asphalt or other suitable water-resistant material. The coating generally has partially embedded therein a covering layer of a suitable comminuted mineral material such as crushed slate, crushed slag or the like of any desired color to provide a decorative and weather-resistant surfacing for the roofing.

Heretofore, strip shingles have been prepared from such base material, each shingle conventionally comprising a substantially rectangular strip having its area to be exposed divided into a plurality of shingle-simulating tabs by means of regularly spaced slots extending inwardly from the butt edge of the strip. Although strip shingles of this type have gone into wide commercial usage, they have failed to fully meet the requirements of the building arts of an easily laid, prepared shingle strip which will, when in place on a roof or side wall, closely simulate the appearance of conventional wooden or similar shingles. Thus, due to the thinness of the material from which the strip shingles are cut and the consequent flat appearance of a roof laid therefrom, in order that the individual tabs defined by the slots will "stand out," it has been necessary to make the slots of a considerable width. Accordingly, when shingle strips of this type are laid, the desired simulation of a wood shingle structure is not obtained due, for the most part, to the relatively wide slots or cracks between coursewise adjacent, shingle-simulating tabs, and to the lack of real or apparent butt thickness of the tabs.

Shingle strips of the prior art as described above exhibit the further disadvantage that considerable waste of the base material occurs in the process of their manufacture by reason of the removal of substantial portions of the material at the slots. Also, the presence of the slots necessitates full head lap over the entire width of the shingle to avoid penetration of moisture through the slots between overlapping shingles. Moreover, the thin, relatively narrow shingle simulating tabs are readily susceptible to raising or curling by the action of weathering conditions to permit the entry of moisture to the roof-supporting structure and consequent failure of the roof.

It has also heretofore been proposed to form prepared strip shingles having an irregular lower edge, in some instances including a narrow line of contrasting color at the edge, to simulate the irregular appearance of the butts of a plurality of wooden shingles. The strips in this instance are not provided with cut-outs, but the irregular butt edge, and the marking with a dissimilar color if such is provided, is relied upon to give the shingle simulating effect. These proposed constructions, however, have not been satisfactory due to the fact that the butt edges of such shingle strips, when laid on the roof, are not emphasized in such a manner as to impart to the roof laid therefrom the appearance of a plurality of conventional wooden shingles.

It is, accordingly, an object of the present invention to provide a strip shingle which will closely simulate the appearance of a plurality of wooden or similar shingles laid in coursewise contiguous relationship. A further object of the invention is to provide a strip shingle of the above-noted type which can be manufactured without any substantial amount of waste occurring in the cutting of the same from a sheet of roofing material. A still further object of the invention is the provision of a strip shingle, as referred to above, which will provide a maximum coverage with a minimum amount of material.

The above stated objects are attained in accordance with my invention which in its broader concept resides in an individual shingle unit including an exposure area of continuous surface demarked to simulate the appearance of the butts of a plurality of contiguous shingles, and a head lap area of pointed configuration. A further feature of my invention for the attainment of the foregoing objects is the simulation of a plurality of contiguous shingles in an individual shingle by the provision of an irregular butt edge for the shingle preferably employed in conjunction with a shaded area at and adjacent that portion of the shingle underlying the butt edges of shingles of a next higher course when the same are laid to impart an apparent enhanced butt thickness to the shingles and to bring out the irregularities of the butt edge of the strip.

A shingle strip as briefly described above provides the advantages that by reason of the con-

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tinuity of its exposure area, substantially no waste is incurred in the manufacture of the same and full width head lap is required only adjacent that portion of the strip which is to underlie the joint between strips of an overlapping course. As compared to hitherto proposed shingles intended to simulate the appearance of a plurality of shingles, the present shingle exhibits a substantial saving in material without loss of weatherproofness and particularly in its more specific form closely simulates the appearance of a plurality of individual wooden shingles due to the shaded area at and adjacent the butt edges of overlying strips, whereby a shadow line is provided which accentuates the irregular butt edge to impress said irregular butt edge on the eye of the observer and at the same time gives to the butt edge the visual appearance of a thickness commensurate with the thickness of wooden shingles. Hence, particularly by combination of the irregular butt edge with the shading area and with the described construction of the head lap area, a shingle is obtained which exhibits none of the disadvantages of the shingles of the prior art and which does adequately fulfill the objects set forth above.

My invention will be more readily understood and further objects and advantages thereof will become apparent when reference is made to the more detailed description thereof which is to follow and to the accompanying drawing in which

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

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

Fig. 3 is a fragmentary perspective view on an enlarged scale illustrating the appearance of the shingles when laid on a roof, and

Fig. 4 is a plan view depicting the manner in which the shingles are cut from a sheet of roofing material.

Referring particularly to Fig. 1, a shingle strip 10 in accordance with my invention is depicted. The shingle 10 is preferably composed of a suitable base material such as an asphalt saturated felt, i. e., rag felt, asbestos felt or the like containing a low melt-point asphalt impregnant, and provided on one or both faces with a weather-resistant coating such as a high melt-point asphalt. The butt edge of the shingle strip is provided with a plurality of alternating projections and recesses 13 and 14, respectively. One of the projections 13 is made to extend on opposite sides of the center line of the shingle for a purpose hereinafter described. The projections and recesses 13 and 14 are preferably of unequal and varying width and may, if desired, be arranged in such a manner that, when the shingles are laid, the butt edge contour of each strip will not conform with the butt edge of adjacent strips.

The face of the shingle 10 comprises an exposure area 11 and an overlap or head lap area 12. The longitudinal boundaries of the exposure area are determined by the irregular butt edge of the shingle and by the irregular butt edges of the shingles which will overlap the same as indicated by the dotted line 18 in Fig. 1. The mean width of the exposure area is represented by the dimension *a*. The head lap area includes a triangular portion having a height *b* substantially equal to the dimension *a* and a portion defined by the base of the triangle and the dotted line 18, this portion having a maximum depth *c*. The dimension *c* is made 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.

The asphalt or other weather-resistant coating provided on the upper face of the shingle preferably has partially embedded therein a suitable comminuted surfacing material such as crushed slate, crushed slag, or the like. The comminuted material 16 on the greater part of the exposure area 11 and extending to a longitudinal line 17 may be of any desired color to provide a pleasing decorative and/or shingle simulating effect. The comminuted material 15 on the head lap portion of the shingle and extending down to the line 17 on the exposure area is of a color preferably darker than the material 16, or otherwise contrasting with the color of the material 16 to provide a shadow effect. If desired, however, the darker surfacing material may be confined to a narrow strip extending from the line 17 to, say, the base of the triangular portion of the head lap area.

Shingles of the form described above are laid on a roof or side wall in the manner illustrated in Fig. 2. Thus, the shingles 10 are laid in overlapping courses on a suitable roof sub-structure such as the roofing boards 19. The shingles 10A of the first course are laid on the roof in endwise abutting relationship and secured thereto by nails or the like in any conventional or suitable manner. The second course of shingles indicated at 10B is then laid thereover to overlap the shingles of the course 10A in such a manner that the upper end corners of the shingles 10B coincide with the points of the overlap area of the shingles 10A. It follows that the shingles of the second course will be properly aligned for the length of the roof and will overlap the first course of shingles to such extent that their butt edges will lie within the areas of dark or shaded surfacing on the shingles of the first course and adjacent the lower boundary thereof. Further courses of shingles are then laid in a similar manner until the roof is completed.

It will be observed that due to the presence of the projection extending on opposite sides of the center line of each shingle, the required amount of head lap *c* (see Fig. 1) will be provided by the overlapping shingles at the juncture between overlapped shingles. At the same time, at least the required amount of head lap is provided throughout the remaining portions of the overlapped shingles due to the gradually increasing depth of the head lap areas to a maximum where they underlie the joints between the overlapping shingles. Thus, the overlap between courses is such as to prohibit passage of moisture to the roof boards 19 without, however, the presence of a substantial excess of the roofing material where it is not necessary. Hence, substantially maximum coverage is obtained from the amount of material employed. It will also be noted that the absence of narrow exposure tabs obviates the danger of raising or curling of the shingles by the action of winds or the like.

Shingles made in accordance with my present invention and laid as described above will have the appearance to the eye of an observer on the ground substantially as illustrated in Fig. 3. Thus, the dark or shaded coloring provided on the shingles of a course adjacent the butt edges of the shingles of an overlapping course accentuates the irregular appearance of the butt edges of the overlapping shingles due to the com-

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plemental irregularities in the width of the shaded area and, also, provides a shadow effect which gives the appearance of an increased thickness to the overlapping shingles. The appearance thus attained closely simulates the visual effects provided by courses of wooden shingles.

The shingle strips of the present invention may preferably be cut from a length of the base roofing material continuously with the production of the same. The base material is preferably produced in the conventional manner, that is, a felt strip of indefinite length is led through suitable asphalt saturating and coating devices and to surfacing means at which a comminuted mineral material is showered in the adhesive coating while the latter is in a plastic condition and is partially embedded therein by suitable pressing rolls or the like. To form the shingles of the present invention, the mineral surfacing material is disposed as illustrated in Fig. 4 to provide alternating stripes **20** and **21** of relatively light and dark or shaded surfacing, respectively. The sheet after reciving the surfacing and having the same partially embedded in the coating, is then led to cutting rolls provided with cutting blades adapted to sever the sheet into strip shingles of the configuration illustrated in Fig. 1.

The manner in which the shingle strips are derived from the roofing material with substantially no waste is diagrammatically indicated in Fig. 4. Thus, lanes of the shingles may be cut from the sheet, the shingle strips of adjacent lanes interfitting. The only waste of material resulting from the cutting operation is the comparatively small amount occurring at the edges of the sheet by reason of the irregularities there provided. By the use of a cutting roll having a circumference greater or less than the length of a shingle strip and by proper arrangement of the cutting blades employed to provide the irregular edges, the irregularities of the butt edges of the shingles may be so arranged that each shingle of a lane differs from that of adjacent shingles of the lane. Hence, when the shingles are later laid on a roof or wall, no regularity in appearance will result.

Although the roofing sheet has been illustrated in Fig. 4 as being of a width to accommodate four lanes of shingles, it will be obvious that it can be of either greater or less width to accommodate any desired number of shingle lanes, it being preferable, however, that it be of a width to accommodate an even number of lanes so that the lanes will interfit as illustrated.

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

What I claim is:

1. A shingle comprising a substantially rectangular exposure area including a butt edge of irregular contour to simulate the appearance of the butts of a plurality of shingles laid in coursewise adjacent relationship, a head lap area of pointed configuration to have a maximum depth substantially midway between its ends, surfacing material on said areas, the surfacing material on a portion of the shingle extending from the head lap area to a line below the jointure of said head lap and exposure areas contrasting in color to the surfacing on the major portion of the exposure area, whereby, when the shingles are laid in overlapping courses, the thickness and irregularities of the butts of the shingles of a course are accentuated by the surfacing of contrasting color on the shingles of the underlying course.

2. A shingle comprising a substantially rectangular exposure area and a head lap area of a configuration to have a maximum depth midway between its ends and a substantially lesser depth at its ends, the exposure area including a butt edge of irregular contour having projections and recesses to simulate the appearance of the butts of a plurality of shingles laid in coursewise contiguous relationship, one of said projections lying opposite the place of maximum depth of the head lap area.

3. A shingle comprising a substantially rectangular exposure area and a head lap area of a configuration to have a maximum depth midway between its ends and a substantially lesser depth at its ends, the exposure area including a butt edge of irregular contour having projections and recesses to simulate the appearance of the butts of a plurality of shingles laid in coursewise contiguous relationship, one of said projections lying opposite the place of maximum depth of the head lap area, surfacing material on said areas, the surfacing material on a portion of the shingle extending from the head lap area to a line below but adjacent the jointure of the head lap and exposure areas being of a color to provide a shadow effect on said portion of the shingle, whereby, when the shingles are laid in overlapping courses, the thickness and irregularities of the butts of the shingles of a course are accentuated by the shaded portions of the shingles of the underlying course.

4. A shingle comprising a substantially rectangular exposure area including a butt edge of irregular contour to simulate the appearance of the butts of a plurality of shingles laid in coursewise contiguous relationship, and a head lap area of pointed configuration to have a maximum depth substantially midway between its ends, surfacing material on said areas, the surfacing material on a portion of the shingle extending from the head lap area to a line below but adjacent the jointure of the head lap and exposure areas being of a color to provide a shadow effect on said portion of the shingle whereby, when the shingles are laid in overlapping courses, the thickness and irregularities of the butt line of the shingles of a course are accentuated by the shaded portions of the shingles of the underlying course.

5. A shingle comprising an asphalt saturated felt base carrying on its upper face a coating of a bituminous material in which is partially embedded a surfacing of a comminuted mineral, said shingle having a substantially rectangular exposure area including a butt edge of irregular contour to simulate the appearance of the butts of a plurality of shingles laid in coursewise contiguous relationship, and a head lap area of pointed configuration to have a maximum depth substantially midway between its ends, the mineral surfacing on a portion of the shingle extending from the head lap area to a line below but adjacent the jointure of said head lap and exposure areas being of a color to give a shadow effect to said portion of the shingle, whereby, when the shingles are laid in overlapping courses, the thickness and the irregularities of the butts of the shingles of a course are accentuated by the shaded portions of the shingles of the underlying course.

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6. A roof covering comprising courses of shingles laid in overlapping relationship, each of said shingles including an overlapped area having a minimum depth at its ends and a maximum depth substantially midway between its ends and a substantially rectangular exposed area defined in part by an irregular butt edge having projections and recesses to simulate the appearance of the butts of a plurality of shingles laid in coursewise adjacent relationship, one of said projections lying opposite the place of maximum depth of the head lap area, and surfacing on said exposed areas, said surfacing including a portion on shingles of an underlying course adjacent the butt edges of shingles of an overlapping course of a color to provide a shadow effect, whereby the thickness and the irregularities of the butt edges of the shingles of the overlapping course are accentuated.

7. A roof covering comprising courses of shingles laid in overlapping relationship, each of said shingles comprising an asphalt saturated felt base carrying on its upper face a coating of bituminous material in which is embedded a surfacing of a comminuted mineral material, and each of said shingles including an overlapped area having a minimum extension at its ends and a maximum extension substantially midway between its ends, the upper end contiguous corners of the overlapped areas of coursewise adjacent shingles superposed over the points of maximum extension of the overlapped areas of the shingles of an underlying course, each of said shingles including a substantially rectangular exposure area defined in part by an irregular butt edge adapted to simulate the appearance of the butts of a plurality of shingles laid in coursewise, adjacent relationship, said mineral surfacing including a portion on shingles of an underlying course adjacent the butt edges of shingles of an overlapping course of a color to provide a shadow effect, whereby the thickness and the irregularities of the butt edges of the shingles of the overlapping course are accentuated.

8. A shingle adapted to be applied in side by side relationship with similar shingles in a laterally extending course and to overlap similar shingles laid in staggered relationship in the adjacent lower course, said shingle comprising an asphalt saturated felt base carrying on its upper face a coating of a bituminous material in which is partially embedded a surfacing of a comminuted mineral, said shingle having a substantially rectangular exposure area and a head lap area having a minimum extension at its ends and a maximum extension substantially midway between its ends, said head lap and exposure areas being so proportioned and arranged that each upper end corner of the head lap area will overlie the point of maximum extension of the head lap area of a shingle of said underlying course when the shingles are laid, said corners and said point of maximum extension providing means for self-aligning and self-spacing of the shingle, and said substantially rectangular exposure area being formed to simulate the appearance of the butts of a plurality of shingles laid in coursewise adjacent relationship, the mineral surfacing on a portion of the shingle extending from the head lap area to a line below but adjacent the jointure of said head lap and exposure areas being of a color to give a shadow effect to said portion of the shingle.

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