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H. F. ALTHEIDE  
SURFACE COVERING

2,100,830

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Fig. 1.

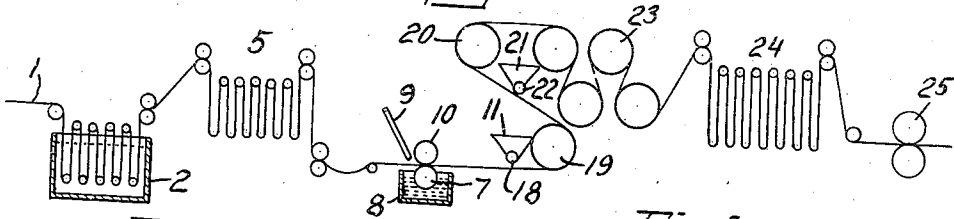


Fig. 2.

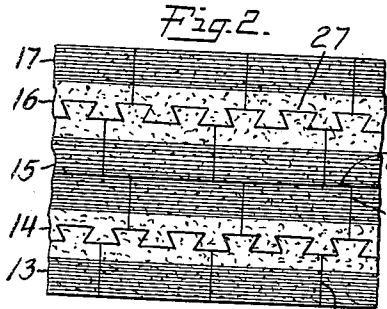


Fig. 4.

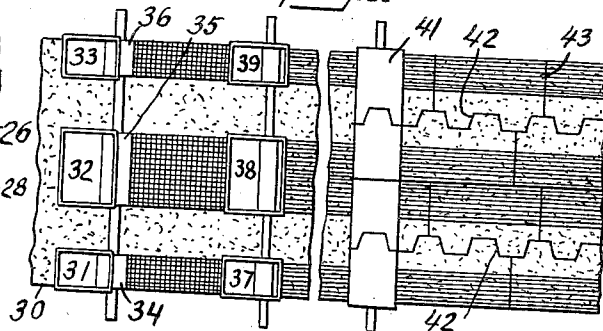


Fig. 3.

Fig. 5.

Fig. 6.

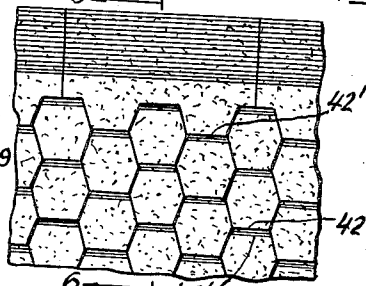
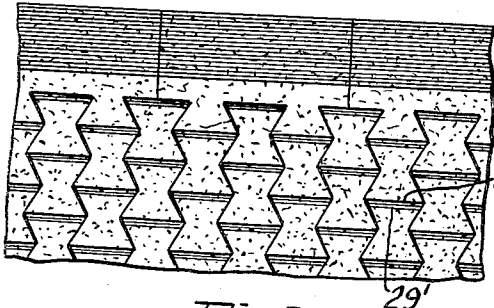


Fig. 7.

Fig. 8.

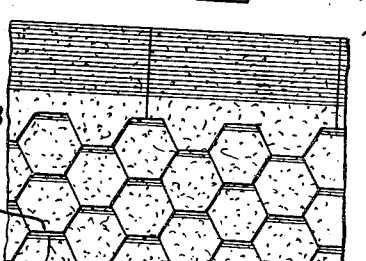
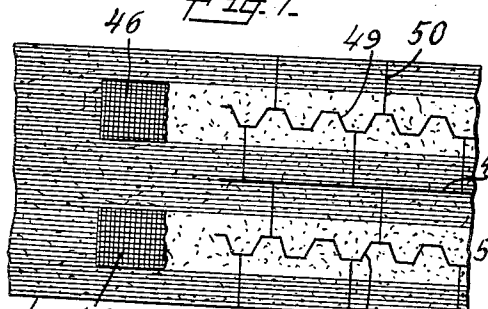
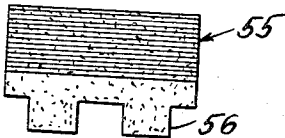


Fig. 9.



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# UNITED STATES PATENT OFFICE

2,100,830

## SURFACE COVERING

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Application July 21, 1936, Serial No. 91,712

5 Claims. (Cl. 103—7)

This invention relates to shingles and more particularly to shingles having widely spaced tabs along one longitudinal edge thereof and to the manufacture of such shingles.

One object of this invention is to provide shingles of enhanced architectural value which shingles can be manufactured readily and economically in existing roofing machines. Other objects and advantages will appear from the following detailed description.

The shingle of this invention has wide spaced tabs along one longitudinal edge of the body thereof and the upper part of the body portion is of a darker color than the tabs and the lower part of the body portion so that when like shingles are laid on a roof or other surface in overlapping courses with the forward edges of the tabs of each course registering with the inner edges of the spaces between the tabs of the preceding course, a narrow band of the dark colored portion of each course is exposed adjacent each of the inner edges of the spaces between the tabs of the succeeding course and the butt edge of each of the tabs of a third course. These narrow, dark colored shadow bands cooperate with the aligned lower edges of the body portions of the succeeding course and the butt edges of the tabs of the third course to create an illusion of greater thickness of the tabs of the third course than they actually possess.

These shingles may be made readily and economically in existing roofing machines by applying longitudinal stripes of light and dark colored surfacing material to a coated roofing sheet, and then cutting the sheet longitudinally along the stripes and transversely into strip shingle elements having tabs and complemental spaces along one edge. The cuts are disposed so that the tabs and a band along the lower edge of the body portion of somewhat less width than the depth of the tabs is surfaced with the light colored surfacing material and the remainder of the body portion is surfaced with the dark colored surfacing material. When the shingles are laid in overlapping courses with the butt edges of the tabs of each course registering with the inner edges of the spaces between the tabs of the preceding course, there are exposed adjacent the upper edges of the spaces between the tabs narrow shadow bands of dark colored surfacing material of the course below. These exposed narrow shadow bands of dark surfacing material, as above pointed out, cooperate with the upper edges of the spaces between the tabs of the succeeding course and with the butt edges

of the light surfaced tabs of a third course to lend to the tabs of the third course an appearance of greater thickness than they actually possess.

In the accompanying drawing forming a part of this specification and showing for purposes of exemplification, preferred embodiments of the invention—

Fig. 1 is a side elevation, somewhat diagrammatic in character, depicting a procedure for making one form of shingle in accordance with this invention;

Fig. 2 is a fragmentary plan view showing a layout for cutting a preferred form of shingle in accordance with this invention;

Fig. 3 shows the shingles of Fig. 2 arranged in overlapping courses.

Fig. 4 is a plan view diagrammatically depicting a procedure of making a modified form of shingle in accordance with this invention;

Fig. 5 is a fragmentary view showing the shingles of Fig. 4 arranged in overlapping courses;

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5;

Fig. 7 is a diagrammatic plan view illustrating a procedure for making thick-butt shingles in accordance with this invention;

Fig. 8 is a fragmentary plan view showing the shingles of Fig. 7 arranged in overlapping courses, and

Fig. 9 is a plan view of a further modified form of shingle.

Referring to the drawing, with particular reference to Fig. 1, a sheet of fibrous material 1 which may be, and preferably is, of the usual roofing felt made from rag fiber and paper stock, with or without suitable fillers, as well known in this art, is fed from the usual paper-making machine or felt roll into saturating tank 2 of any well known type. This tank may contain suitable cementitious waterproofing material such as asphalt or other bituminous material utilized for the impregnation and saturation of roofing felts.

From the tank 2 the saturated sheet passes to a looping device 5 which gives the saturant an opportunity to cool and thoroughly impregnate the fibrous base. From the looping device 5 the sheet passes to coating apparatus involving roll 7 rotatably mounted in tank 8, containing molten bituminous coating material, such as asphalt, for covering the underside of the sheet, and pipe 9 equipped with a discharge spout of a width approximately equal to that of the sheet for applying bituminous coating material to the upper side of the sheet. The coating material is spread

uniformly over the top and bottom of the sheet as it passes between coating rolls 7 and 10, excess coating flowing over the edges of the sheet into tank 8.

5 Immediately upon leaving the coating appliance and while the coating material is still tacky, the coated sheet passes under hopper 11 extending across the entire width of the sheet and divided by partitions (not shown) into compartments corresponding respectively in width to the width of the five bands 13, 14, 15, 16, and 17 applied to the sheet as shown in Fig. 2. The compartments corresponding to bands 13, 15 and 17 contain dark colored surfacing material and the compartments corresponding to bands 14 and 16 contain light colored surfacing material. Distributor roll 18 mounted in hopper 11 continuously showers the granular material from the compartments of the hopper 11 to form the light and dark colored bands on the sheet 1. It will be observed that band 15 is twice as wide as bands 13 and 17.

The surfaced sheet then passes about a reversing roll 19 which functions to partially embed the granular material in the plastic coating. As the sheet passes from roll 19 to a second reversing roll 20, excess granules fed to the sheet gravitate back to the hopper and the sheet passes under hopper 21 containing mica dust, talc or other composition capable of rendering the back of the sheet non-cementitious. The material from hopper 21 is discharged therefrom by distributor roll 22. In the continued movement of the talc covered sheet after leaving reversing rolls 20, excess talc falls therefrom into the hopper 21. From the reversing roll 20 the sheet passes over calender rolls 23 to a looping device 24, where it is given an opportunity to cool, and thence to cutting rolls 25 provided with knives which simultaneously produce straight longitudinal cut 26 along the median line of band 15 and broken cuts 27 defining tabs and complemental spaces, longitudinally along the light colored bands 14 and 16. The cutting cylinders also produce staggered transverse cuts 28 which divide the strips produced by longitudinal cuts 26 and 27 into strip shingles provided with tabs having downwardly diverging side edges and complemental spaces along one longitudinal edge thereof.

50 It will be observed the bands of light colored surfacing material occur on the tab portions of each shingle element and on a part of the body portion of a width somewhat less than the depth of the tabs, the remainder of the body portion being surfaced with dark colored granules.

55 Fig. 3 shows the shingles of Fig. 2 arranged in overlapping courses with the forward edges 29 of the tabs of each course registering with the inner edges of the spaces between the tabs of the underlying course. Each course entirely covers all of the dark granular material of the underlying course except narrow shadow bands 29' of the order of  $\frac{3}{4}$ - $1\frac{1}{2}$  inches, e. g.  $1\frac{1}{4}$  inches, wide adjacent the inner edges of the spaces between the tabs of the overlying element. It will be observed that three courses cooperate to produce an appearance of thickness of the tabs of each course, i. e. the exposed dark shadow bands of one course cooperate with the inner edges of the spaces between the tabs of the succeeding course and the butt edges of the tabs of a third course to produce an illusion of thickness of the latter tabs.

70 In Fig. 4 which illustrates a modified embodiment of the invention, reference numeral 30 designates a sheet of saturated felt base roofing

material coated with plastic waterproofing material and surfaced with light colored granules. The sheet 30 is passed beneath suitable coating apparatus, for example, coating units 31, 32, 33 provided with a coating roll having enlarged portions 34, 35, and 36 which apply overlay bands of plastic coating material of a width corresponding to the width of bands 13, 15, and 17 hereinabove described in connection with Fig. 2. From the coating unit, and while the coating material is still hot and plastic, the sheet passes beneath hoppers 37, 38, and 39 registering with the overlay coating bands and containing dark colored granular material which is showered upon such bands. From the surfacing hopper, the sheet is passed about suitable embedding rolls, calendering rolls and looping mechanism, for example, such as hereinabove described in connection with Fig. 1, and thence to cutting cylinders 41 which produce a straight cut along the median line of the overlay surfacing band applied by hopper 38, broken cuts 42 extending generally longitudinally of the single surfaced light colored bands and staggered transverse cuts 43. If desired, the knives for making the longitudinal cuts 42 may be disposed as shown in Fig. 4 so that they produce shingles provided with semi-hexagonal tabs having downwardly converging side edges, separated by semi-hexagonal complemental spaces. It will be observed the lower edge of the dark colored, double coated and surfaced portion of the shingles is spaced from the lower edge of the body portion a distance about  $1\frac{1}{4}$  inches less than the depth of the tabs and that the lower portion of the shingle body portions and tabs have single layers of coating and light colored surfacing material thereon.

The shingles of Fig. 4 may be laid in overlapping courses as shown in Figs. 5 and 6 with the forward edges 42' of the tabs of each course registering with the inner edges of the spaces 44' between the tabs of the underlying course. Each course covers the entire thick dark double coated and surfaced portion of the underlying course except narrow shadow band areas 43' adjacent the upper edges of the spaces between the tabs. These narrow, thick, dark exposed areas cooperate with the spaces between the tabs of the succeeding course and with the lower edges of the tabs of a third course to enhance the thick butt appearance of the lower edges of the tabs of the latter course.

In Fig. 7, which illustrates a further modified form of my invention particularly adapted for the production of thick butt shingles, reference numeral 44 designates a sheet of saturated and coated felt base roofing material which has been surfaced with dark colored granules. To this sheet are applied overlay bands of plastic waterproof coating material 45, 46 of a width corresponding to the bands 14 and 16 shown in Fig. 2, by suitable coating apparatus, not shown. Light colored granular surfacing material is then partially embedded in the overlay coating bands 45, 46 and the sheet cut along the median line of the portion between these bands, as indicated at 48, along broken cuts 49 extending generally longitudinally of the bands and along transverse cuts 50 into strip shingle elements having semi-hexagonal tabs separated by complemental spaces. The double coated and surfaced tabs and lower part of the body portion of each shingle of a width somewhat less than the depth of the tabs are of light color and are thicker than the upper

dark colored, single coated and surfaced part of the body portion.

The thick-butt shingles shown in Fig. 7 may be laid in overlapping courses as shown in Fig. 8 with the lower edges 51 of the tabs of each course registering with the inner edges of the spaces between the tabs of the preceding course so that each course covers all of the thin, dark colored portions of the preceding course except a narrow, dark shadow band 52 adjacent the upper edges of the spaces between the tabs. These upper edges of the spaces between the tabs and the exposed dark shadow bands of two successive courses cooperate with the shingles of a third, overlying course to create an illusion of increased thickness of the butts of such shingles.

In Fig. 9 there is illustrated shingle 55 having rectangular tabs 56 separated by complemental spaces along one longitudinal edge, the upper portion of this shingle being surfaced with dark colored surfacing material and the lower portion of the body and the tabs surfaced with light colored surfacing material. Shingle 55 may be laid with other like shingles in a manner analogous to that hereinabove described in connection with Figs. 3, 5, and 8 to produce a roof having the appearance of being composed of individual rectangular shaped shingles. When thus laid, the exposed dark portion of one course cooperates with the edges between the tabs of the overlying course and the butt edges of the tabs of a third course to enhance the thick butt appearance of the shingles.

The term "shingle" is used herein in a broad sense and is intended to include both roofing and siding elements.

Since certain modifications in the articles which embody the invention may be made without departing from its scope, e. g. the dark colored shadow areas may be painted on shingles of uniform color, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A felt base strip shingle comprising a body portion having widely spaced tabs along one longitudinal edge thereof, said shingle being coated on its upper surface with waterproofing material and surfaced with granular material, the surfacing material applied to said tabs and to a band of said body portion adjacent the lower edge thereof of a width slightly less than the depth of said tabs being of relatively light color and the portion of said shingle above said light colored portion being surfaced with darker colored surfacing material, said shingle being adapted to be laid in overlapping courses with other like shingles with the forward edges of the tabs of each course aligned with the upper edges of the spaces between the tabs of the preceding course, whereby the dark colored portion of each course is entirely covered by the succeeding course except narrow bands adjacent the upper edges of the spaces of said succeeding course, said exposed dark colored bands cooperating with the upper edges of the spaces between the tabs of the succeeding course and with the butt edges of the tabs of a third course to lend to the butt edges of the tabs of said third course an appearance of thickness.

2. A shingle element comprising a body portion having a tab along one longitudinal edge thereof, said tab and a band along the lower edge

of said body portion of a width slightly less than the depth of said tab being of one color, said shingle having a portion extending upwardly from the upper edge of said band, said last named portion being of a color different from that of said tab and band, said shingle adapted to be laid in overlapping courses with other like elements to provide spaced tabs in each course with the forward edges of the tabs of each course aligned with the upper edges of the spaces between the tabs of a preceding course whereby in each course there is exposed to view adjacent the upper edges of the spaces between the tabs narrow bands of a color different from that of the remainder of the exposed portions of the shingles, which bands cooperate with the upper edges of the spaces between the tabs of the succeeding course and with the lower edges of the tabs of a third course to create an appearance of greater thickness of the tabs of said third course than said tabs actually possess.

3. A felt base strip shingle of uniform thickness comprising a body portion having semi-hexagonal tabs separated by complemental spaces along one longitudinal edge thereof, said shingle having a layer of bituminous waterproof coating material covering its entire upper surface, granular surfacing material of one shade partially embedded in the coating layer on said tabs and on a band of said body portion adjacent the lower edge thereof of a width slightly less than the depth of said tabs and granular material of a darker shade partially embedded in the coating layer on the remainder of the body portion of said shingle, said shingle being adapted to be laid in overlapping courses with other like shingles with the forward edges of the tabs of each course aligned with the upper edges of the spaces between the tabs of the preceding course whereby all of the dark colored surfacing material of each course, except narrow bands adjacent the upper edges of the spaces of the succeeding course, is covered by said succeeding course, said narrow bands of dark colored surfacing material cooperating with the upper edges of the spaces between the tabs of the succeeding course and with the butt edges of the tabs of a third course aligned with the upper edges of the spaces of said succeeding course to create an illusion of greater thickness of the tabs of said third course than said tabs actually possess.

4. A roof constituted of overlapping courses of felt base granular surfaced shingles, each of said courses comprising body portions having widely spaced tabs along their longitudinal edges, the butt edges of said tabs being aligned with the upper edges of the spaces between the tabs of an underlying course, the granular surfacing material on the tabs and on a band on the body portions of each of said courses adjacent the lower edge thereof of a width slightly less than the depth of said tabs being of relatively light color and the surfacing material on a portion of said courses above the upper edges of said light colored portions being of darker color whereby narrow shadow bands of dark colored material of each course are exposed adjacent the upper edges of the spaces of the overlying course and the butt edges of the tabs of the third course and cooperate with said upper edges of said spaces and the butt edges of said tabs to lend to said butt edges an appearance of thickness.

5. A felt base strip shingle comprising a body portion having widely spaced tabs along one longitudinal edge thereof, said shingle being coated on its

upper surface with waterproofing material and surfaced with granular material, the surfacing material applied to said tabs and to a portion of said body adjacent the lower edge thereof of a width slightly less than the depth of said tabs being of one color and the portion of said shingle above said first named portion being surfaced with surfacing material of a different color, said shingle being adapted to be laid in overlapping courses with other like shingles with the forward edges of the tabs of each course aligned with the upper edges of the spaces between the tabs of the

preceding course, whereby the last named portion of each shingle is entirely covered by the succeeding course except narrow bands adjacent the upper edges of the spaces of said succeeding course, said bands being of a color different from that of the remainder of the exposed part of the shingle and cooperating with the upper edges of the spaces between the tabs of the succeeding course and with the butt edges of the tabs of a third course to lend to the butt edges of the tabs of said third course an appearance of thickness.

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