

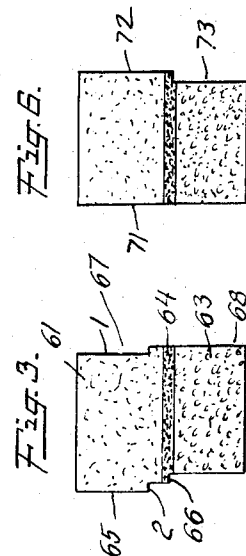
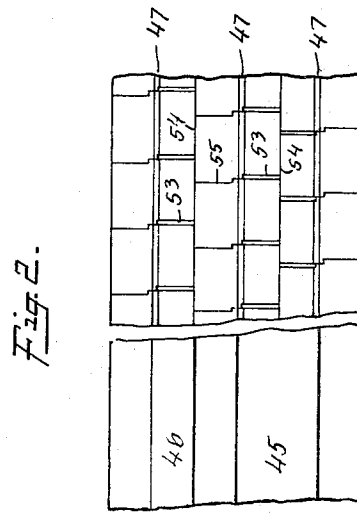
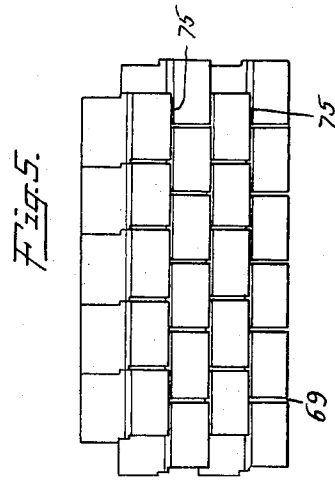
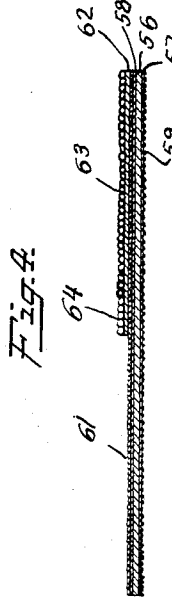
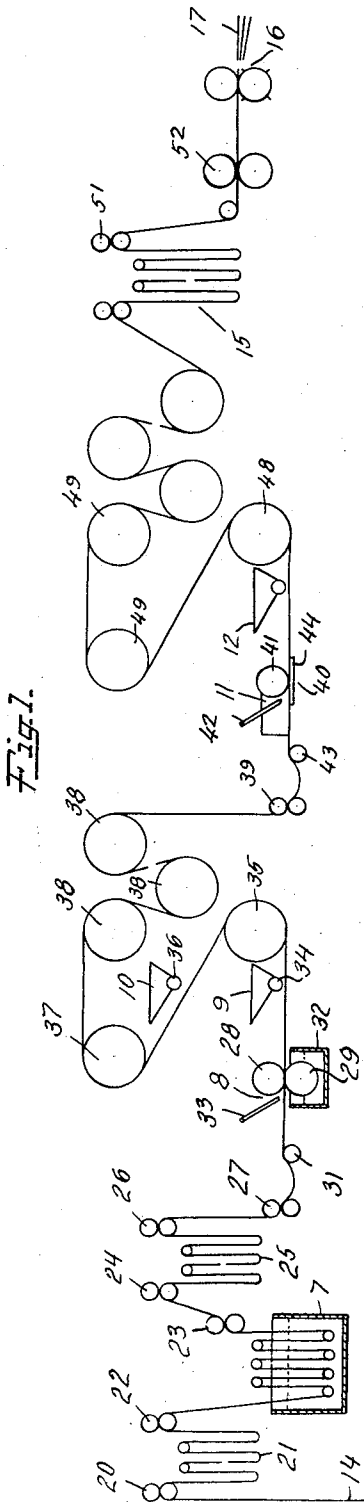
Oct. 27, 1936.

C. R. ECKERT

2,058,578

THICK BUTT SHINGLE

Filed Dec. 12, 1931



INVENTOR
 Clarence R. Eckert
 BY *John S. Sibley*
 ATTORNEY

UNITED STATES PATENT OFFICE

2,058,578

THICK BUTT SHINGLE

Clarence R. Eckert, Englewood, N. J., assignor to
The Barrett Company, New York, N. Y., a corporation of New Jersey

Application December 12, 1931, Serial No. 580,658

4 Claims. (Cl. 108—7)

This invention relates to the manufacture of shingles and especially to the manufacture of a thick butt shingle of the felt base type which is at once self-spacing and interlocking.

One object of the invention is the manufacture of a felt base shingle element which can be easily laid, which is durable, and the exposed portion of which will not tend to flap in the wind.

Another object of the invention is the production of a shingle which, when laid, will present a pleasing and ornamental appearance and consequently is of enhanced architectural value.

A further object is the production of a shingle which may be very easily manufactured using conventional equipment subject only to slight modifications as will be apparent from the following description.

Further objects will appear from a consideration of the following description of my invention.

In the drawing—

Fig. 1 is a schematic diagram of one process of producing my improved thick butt shingle;

Fig. 2 is a fragmentary plan of the coated and surfaced felt base indicating the layout for cutting the base into individual elements;

Fig. 3 is a plan view of one form of my improved shingle;

Fig. 4 is an enlarged longitudinal cross-section through the shingle of the invention;

Fig. 5 is a section of a roof illustrating the manner in which the shingles of Fig. 3 are intended to be laid; and

Fig. 6 is a plan view of an alternative form of shingle in which the thick butt feature of my invention is embodied in a self-spacing shingle.

Referring to the drawing, with particular reference to Fig. 1, a sheet of fibrous material 14, 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 by feed rolls 20 from the usual paper making machine or felt roll into looping device 21. From the looping device 21, rolls 22 feed the sheet into any customary type of saturating apparatus, indicated generally by the reference numeral 7. Saturating tank 7 may contain suitable cementitious waterproofing composition, such as asphalt or other bituminous material, utilized for the impregnation and saturation of roofing felts.

Rolls 23 and 24 feed the saturated sheet to a second looping device 25. The passage of the saturated base through the looping device 25 gives the saturant the necessary opportunity to dry and thoroughly impregnate the fibrous base.

Rolls 26 and 27 feed the saturated sheet from the looping device 25 to the coating appliances indicated by the reference numeral 8. Rolls 27 are preferably driven at a slightly greater peripheral speed than that of coating rolls 28 and 29, the slack accumulating between driven rolls 27 and guide roll 31, over which the sheet passes before entering the bite of the coating rolls 28 and 29. Coating roll 29 is rotatably mounted in a tank 32. This tank may contain bituminous material such as asphalt or other cementitious waterproofing substances suitable for coating roofing felt.

The base of the sheet 14 is completely coated by roll 29. Waterproofing material is applied to the top of the sheet by means of pipe 33 equipped with a discharge spout preferably of a width equal to the width of the sheet. The coating material fed from pipe 33 is spread uniformly over the top of the sheet as it passes between the coating rolls 28 and 29.

Immediately upon leaving the coating appliance and while the coating material is still tacky, the coated sheet passes under hopper 9 containing granular material, such as crushed rock or slate. These granules are showered by means of the usual distributing roll 34 onto the coated base therebeneath and adhere thereto. The thus surfaced sheet then passes about reversing roll 35 which functions to partially embed granular material in the plastic coating.

In the continued passage of the surfaced sheet, excess granules fall off from the sheet into the hopper 9 from whence they are applied onto the sheet. The back of the sheet then comes under hopper 10 containing mica dust, talc, or other composition capable of rendering the back of the sheet non-cementitious. The material from hopper 10 is distributed over the back of the sheet by means of a distributing roll 36. The talc covered sheet then passes over reversing roll 37 which imparts a smooth surface to the back of the sheet. Excess talc falls off from the base as the latter passes from roll 37 to the drying and pressing rolls 38. Hopper 10 is preferably so positioned that the excess talc falls back thereinto, as shown in Fig. 1.

Feed rolls 39 feed the sheet from the pressing rolls 38 to a second coating appliance indicated generally by the reference numeral 40. Coating apparatus 40 is designed to apply spaced longitudinal parallel bands of coating material to the surfaced sheet passing thereunder. For this purpose upright plates 41 are provided extending in front of the coating roll 41. One plate 41 is provided for each boundary line of each coating

stripe, the plates 11 functioning to confine the coating material to the selected longitudinal portions of the base. In the embodiment of the invention shown in the drawing, four plates 11 are utilized; two plates defining the parallel boundary edges of stripe 45, and the other two plates defining the longitudinal edges of stripe 46. Stripe 45, it will be noted, is approximately double the width of stripe 46. Coating material is applied to the base by means of a pair of pipes 42, each delivering coating material, between the plate 11 to form the stripes 45, 46 respectively. The surfaced sheet, in passing through the coating appliance 40, passes over a guide roll 43 and is maintained in contact with the coating roll 41 by a guide plate 44. Preferably driven rolls 39 rotate at a greater peripheral speed than roll 41, the slack accumulating between rolls 39 and guide roll 43.

From the coating apparatus 40 the sheet passes under the surfacing hopper 12 containing granular material. Hopper 12 is disposed above the surfaced sheet in position to discharge granular material onto the coated stripes 45, 46. Hopper 12 is divided into compartments by partitions. In the embodiment of the invention herein described, five compartments, alternate compartments containing differently colored granular material, are utilized. Distributing rolls 13 discharge the granular material from alternate compartments to cover the major portion of stripes 45 and 46, while the remaining compartments simultaneously shower granular material of a different color to cover the narrow striped portion indicated by reference numeral 47. If desired granular material of the same color may be fed from hopper 12, which may or may not have partitions therein, and thereafter the granules in the narrow striped portion 47 painted to obtain the desired shadow line effect. The shadow line 47 may be produced by means of wear resisting material other than mineral granules.

The thus double coated surfaced strip is then passed about reversing roll 48 which functions to partially embed the granular material supplied by hopper 12 into the longitudinal coating layers 45, 46. From the pressing roll 48 the sheet passes to drier roll 49, excess granules falling off from the sheet back into hopper 12 in the passage of the sheet thereover. From the drier and pressing rolls 49 the sheet passes into looping device 15 where the product is given an opportunity to cool. The sheet then leaves the looping device or rack 15, and is fed by feed rolls 51 to the cutting cylinders 52. Cylinders 52 cut longitudinal rows of slots 53 (Fig. 2) and simultaneously cut the sheets longitudinally along lines 54 and transversely along the stepped lines 55 into the individual shingle elements shown in Fig. 3. From the cutting cylinders 52 the sheet passes to a tab ejector 16 which functions to remove the material cut out to form the slots or recesses 53. The tab ejector 16 feeds the shingle to a suitable stacking device indicated generally by the reference numeral 17, Fig. 1.

From Fig. 2, it will be noted that longitudinal lines of cut 54 intersect the rows of slots 53 and define one edge of the elements. Hence the longitudinal cut 54 trims this edge of the elements.

The element shown in Figs. 3 and 4 results from the operations above described. This shingle element is of general rectangular shape and comprises a felt base 56, having coating layers 57, 58 on opposite sides thereof. Coating layer 57 on the rear side is rendered non-cementitious

by the application of mica dust 59 thereto. Granular material 61, such as crushed rock or slate, is partially embedded in coating layer 58.

Somewhat less than the lower half of the element is completely coated by a second coating layer 62 extending from side to side of the element down to the forward edge and overlaying the granular material 61. Granular material 63 is partially embedded in the major portion of coating 62 leaving uncovered a narrow portion along the upper edge of coating 58. In this narrow edge portion granular material 64 of a different color, preferably darker than that of the granular material 63 is partially embedded.

One side, indicated by the reference numeral 2, has a rectangular projection 65 extending from the top edge along the side a distance equal to at least $\frac{1}{2}$ the length of the element. The remaining portion of side 2 is of stepped formation, thus defining a second projection 66 of less length and width than projection 65. Opposite side 1 of the element has a recess or indentation 67 congruent with projection 65. The remaining portion of side 1 is defined by straight line indicated by reference numeral 68.

Due to the long projection 65 and congruent recess 67, the elements can be readily applied with the non-homologous edges of the elements in the same course in accurate alignment. The alignment of the elements in the same course is aided by the projection 66 which abuts against straight side 68 to define recess or slot 69 (Fig. 5) between contiguous elements of the same course.

From Figs. 3 and 4 it will be noted that the second coating 62 extends up along the exposed face of the shingle to a point above the lower edge of projection 66. Preferably the forward edge of the element is made somewhat wider than the upper edge. As one example of the dimensions suitable for the formation of a shingle of this invention the following is given:

	Inches
Width of the forward edge.....	12
Width of the top edge.....	12 $\frac{5}{8}$
Length of the side edge.....	16
Length of projection 65.....	7 $\frac{1}{2}$
Length of projection 66.....	3 $\frac{3}{8}$
Width of projections 65 and 66.....	$\frac{5}{8}$

In Fig. 6 a modified form of shingle is shown. This shingle has the exposed surface composed of alternate coatings and surfacing layers in the same manner as the shingle in Fig. 3, hereinabove described. It differs from the shingle in Fig. 3 chiefly in that one side edge is defined by a straight line, indicated by reference numeral 71, whereas the opposite side has a relatively long projection 72 and what might be considered recess 73 in the lower portion of the side edge thereof. In laying the shingle of Fig. 6, projection 72 of one shingle abuts against the straight side 71 of the contiguous shingle in the same course, thus forming a space or a recess between contiguous shingles.

Fig. 5 shows the elements of Fig. 3 laid in overlapping courses. As indicated in this figure, the elements of one course are laid so that the forward edge thereof is spaced above the bottom edge of the shadow line formed by the granules 64. Thus the narrow longitudinal stripe 75 formed by granules 64 and of a color contrasting with the color of the exposed portion of the element, heightens the appearance of thickness of the edge of the shingle and imparts a pleasing appearance

to the roofing or other surface to which the elements may be applied.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, 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.

10 I claim:

1. A shingle comprising a fibrous base impregnated with waterproofing material, a coating of waterproofing material completely covering one face of said base, granular material partially embedded in said coating, a second coating of waterproofing material overlying said granular material and completely covering less than the lower half of the shingle, additional granular material partially embedded in the major portion of the second coating and covering said second coating from side to side thereof and extending down to the forward edge of the element leaving uncovered a narrow strip of the upper edge portion of said second coating, and wear-resisting material of a different color from said additional granular material covering the narrow upper edge portion of said second coating.

2. A shingle of general rectangular shape comprising a fibrous base impregnated with waterproofing material, said shingle being somewhat wider at its top than at the base thereof and having at the upper portion thereof contiguous to the upper edge at one side a projection extending along the side thereof a distance greater than one-third the length of the side of the element and having at the opposite side contiguous to the upper edge an indentation congruent to said projection, the remaining portion of the first mentioned side of the projection having a second projection of less width and length than the first mentioned projection, the remaining portion of the opposite side of the shingle being straight, a coating of waterproofing material completely covering said base, granular material partially embedded in said coating, a second coating of waterproofing material overlying said granular material and completely covering somewhat less than the lower half of the shingle, additional granular material partially embedded in the major portion of the second coating and covering said second coating from side to side thereof and extending down to the forward edge of the element, leaving uncovered a narrow strip of the upper portion of said second coating, and granular material of a different color from said additional

granular material partially embedded in the narrow upper edge portion of said second coating.

3. A shingle of general rectangular shape comprising a fibrous base impregnated with waterproofing material, said shingle being somewhat wider at its top than at the base thereof and having at the upper portion thereof, contiguous to the upper edge, at one side a projection extending along the side thereof a distance greater than one-third the length of the side of the element, the opposite side of said element having contiguous to the upper edge an indentation congruent to said projection, the remaining portion of the first mentioned side of the projection having a second projection of less width and length than the first mentioned projection, the portion of the opposite side of the shingle below said indentation being straight, a coating of waterproofing material completely covering said base, granular material partially embedded in said coating, a second coating of waterproofing material covering the granular material and extending from the base of the shingle to a point including the lower portion of the second projection, granular material partially embedded in the major portion of the second coating and covering said second coating from side to side thereof and extending down to the forward edge of the element, leaving uncovered a narrow strip of the upper portion of said second coating, and granular material of a different color from said additional granular material partially embedded in the narrow upper edge portion of said second coating.

4. A roof composed of overlapping courses of shingles, each of said shingles comprising a fibrous base saturated with waterproofing material, a coating layer of waterproofing material completely covering one face of said base, a layer of granular material partially embedded in said coating layer, a second coating layer of waterproofing material overlying said layer of granular material and covering the exposed portions of said shingles, a second layer of granular material partially embedded in all of said second coating layer except a narrow strip thereof in line with the lower edges of the shingles of the overlapping course, and granular material of a different color than that applied to the lower portion of said second coating layer partially embedded in said narrow strip, said narrow strips of each course cooperating with the butt edges of the shingles of the overlapping course to enhance the thick butt appearance of the overlying shingles.

CLARENCE R. ECKERT. 55