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2,160,787

METHOD OF FORMING THICK BUTT SHINGLES

Filed Sept. 30, 1935

2 Sheets-Sheet 1

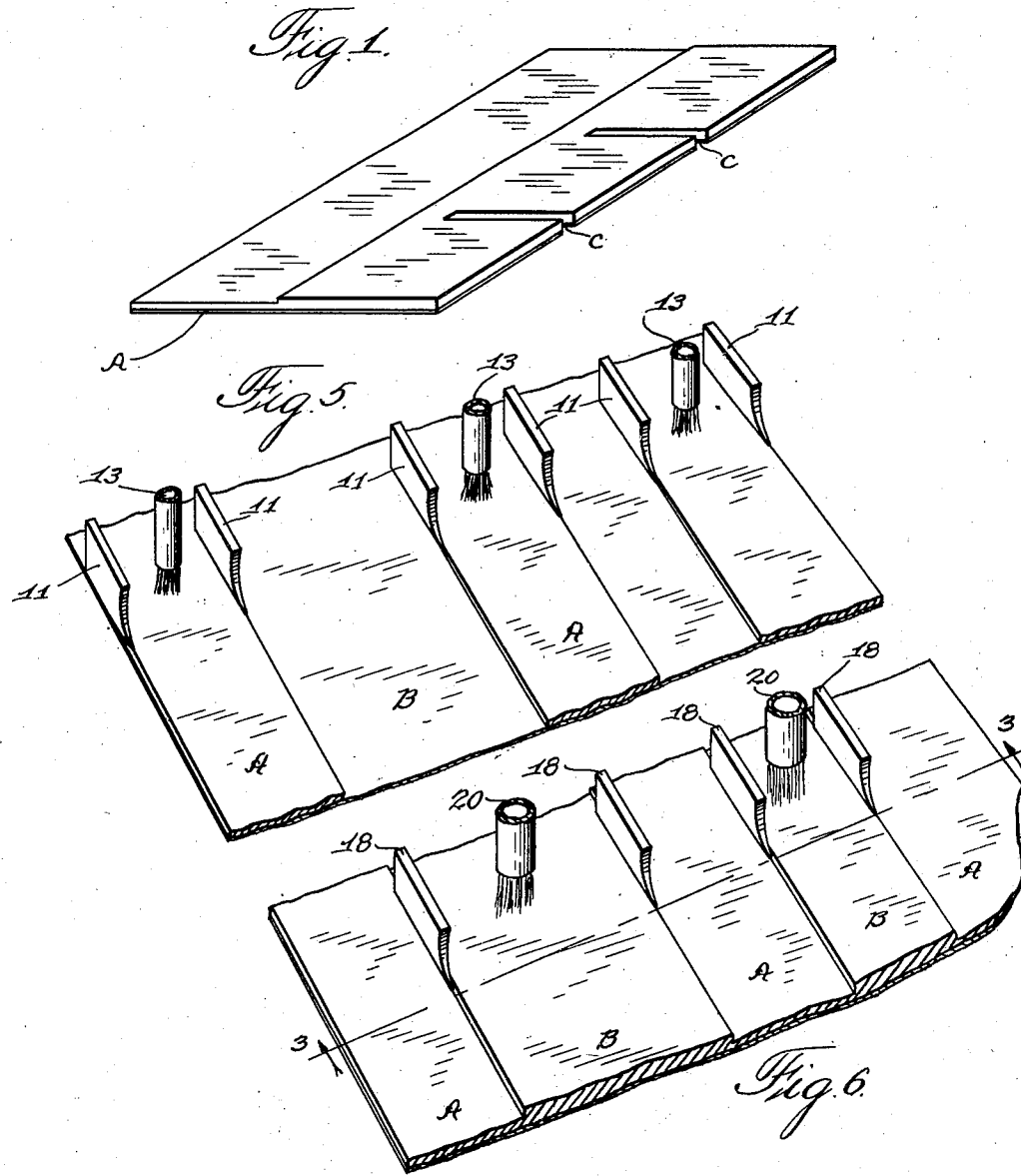


Fig. 3.

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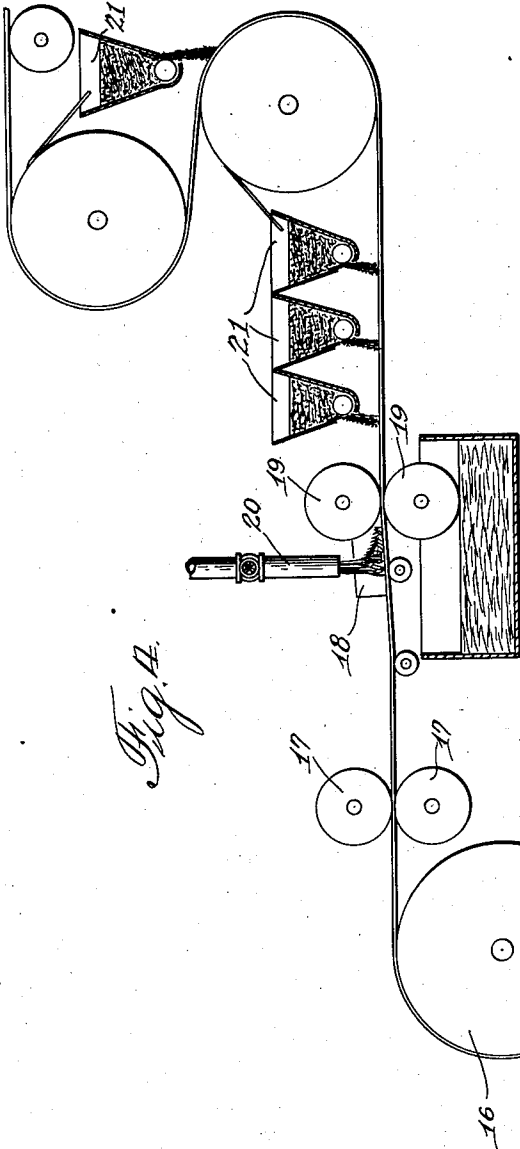


Fig. A.

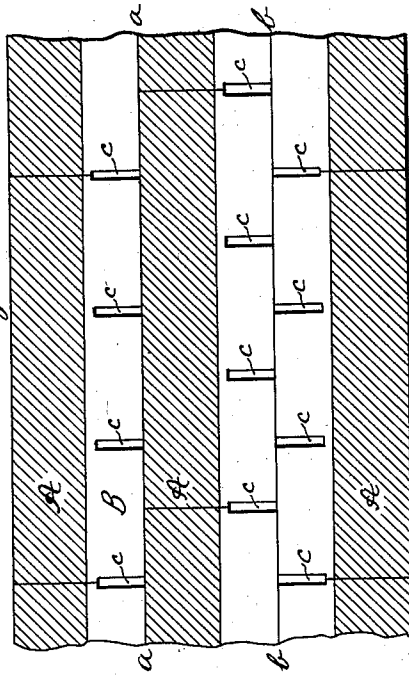
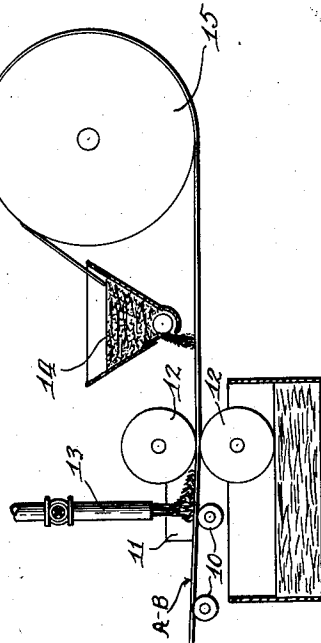


Fig. B.



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UNITED STATES PATENT OFFICE

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METHOD OF FORMING THICK BUTT SHINGLES

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Application September 30, 1935, Serial No. 42,840

9 Claims. (Cl. 91—68)

This invention relates to roofing elements and more particularly to artificial roofing elements such as shingles, or strips simulating a plurality of shingles, in which the lower or weather portion of the element is of greater thickness than the upper or overlapped portion of the element, and also relates to a method of making such "thick butt" elements in a desirable and expeditious manner. The invention will be best understood by reference to the hereinafter description of the product and the method and machine for making the same, taken in connection with the accompanying drawings, in which:

Figure 1 is a perspective view of a strip shingle element made in accordance with the invention;

Fig. 2 is a plan view of a section of the surfaced and gritted web from which the elements shown in Fig. 1 are formed, it being noted that the web is a "three in one" width—that is, the web is of a width equal to the depth of three shingle elements—it being so dimensioned to facilitate formation of the shingle elements in the most economical manner;

Fig. 3 is a vertical sectional view of the web shown in Fig. 6 taken on the line 3—3 of the latter;

Fig. 4 is an elevational diagrammatic view of the various machine elements utilized in making the strip shingle shown in Fig. 1 in accordance with the improved method, and it will be understood that, while the aforesaid machine elements are shown in fragmentary or illustrative style only, this figure is intended to be fully informative of a machine for performing the desired service, all of the elements thereof being sufficiently indicated as to function and the structural elements being shown in proper sequence, to enable those skilled in the art to erect a machine for accomplishing the same purpose; and

Figs. 5 and 6 are fragmentary perspective views showing the manner in which the dams are arranged at two points in association with the material feeding spouts to apply the asphalt coating to the web in accordance with the hereinafter detailed invention.

The just-referred-to machine for manufacturing the web, from which the strip shingle shown in Fig. 1 is made, will first be described in detail. The web A—B is understood to comprise roofing felt which has already been saturated as desired. This web is conducted over conveyor rolls 10 and under dams 11, which latter are of sufficient longitudinal extent and so fitted at their forward edges to the contour of coating rolls 12 as to

insure that coating asphalt fed from spouts 13 will be applied to the web only at the portions or along the lanes A, A, A, indicated in Fig. 5. After passing the coating rolls 12, grits of any desired character are fed onto the web from a hopper 14, whence the web passes under a pressing roll 15 and is reversed to pass over a roll 16. The material which has not adhered to the coating on the web, as well as that deposited on the zones not supplied with coating material from spout 13, falls back into hopper 14 to be used again.

The web next passes between presser rolls 17—17, where the granules which fell upon the web are pressed tightly into the coating on the already coated areas A, A, A. The web then passes under dams 18 arranged similarly to the dams 11,—so far as longitudinal extent and interfitting relation with rolls 19 is concerned,—at which point spouts 20 deliver coating asphalt to the lanes or zones B, B which have not been theretofore covered.

The asphalt supplied through spouts 13 is quite hot and of a low viscosity. It is also of thin consistency so that the coating material applied at the first station or from the spouts 13 forms a coating of minimum thickness on the zones of the web between the confining dams 11—11, i. e., on the lanes A, A, A. However, the coating asphalt supplied through spouts 20 is of heavier consistency and is supplied at a lower temperature, wherefrom the coating supplied to zones or lanes B, B is much thicker than that which has been supplied on lanes A, A, A.

After passing the last-referred-to dams and coating rolls 19, the web is led under one or more hoppers, generally referred to as 21—21, whence brightly colored granules are deposited on the web, these latter, of course, adhering only to those portions which are supplied with fresh or last-applied coating asphalt, i. e., the zones or lanes B, B.

While they form no part of the present invention, a number of hoppers arranged longitudinally of the web are shown to indicate that the weather portion of the web may be supplied with alternate variegated colorings. The illustrative showing comprises three longitudinally-arranged hoppers, wherefrom three different colors may be laid on in any desired sequence, this latter depending entirely on the manner in which the hoppers are spaced, the sequence in which the hopper gates are opened, and the time during which said gates are opened.

The web then passes over additional drums and is finally led to cutting knives or other devices. These latter are not shown, as any now-known procedure may be used in cutting these shingles. It is, however, necessary that they be cut along the lines *a-a*, *b-b*, shown in Fig. 2, it being noted that slots *c-c* have been cut at desirable intervals in the web before the aforesaid longitudinal cutting is performed. The strips obtained from the last-mentioned cutting will carry a heavy or thick coating at the lower or slotted edges of each strip. Thereafter these latter are cut transversely to make the strip shingles shown in Fig. 1.

While the thick and thin portions of the coating are above described as being applied progressively along the path of travel of the web, this invention may also be of value in a process where one applies the thick and thin coatings in simultaneous side-by-side relation and, by so doing, insures the production of a web having the two coatings of varying thickness thereupon to the same degree as hereinbefore described.

While the inventor herein contemplated has been described in one embodiment for purposes of illustration, the description is not to be taken in a limiting sense, but the invention is to be limited only by the scope of the appended claims.

I claim:

1. The method of forming a thick butt shingle which comprises applying a plastic coating of one thickness to one portion of a foundation element, applying only to a portion of said element left unsurfaced by said coating a plastic coating of different thickness, and surfacing said plastic coatings with grits.

2. The method of forming a thick butt shingle which comprises applying a plastic coating of one thickness to the weather portion of said shingle and applying a plastic coating of a lesser thickness to a portion of said shingle left uncoated by said first coating, said coating of lesser thickness being confined entirely to said portions left uncoated by said first coating.

3. The method of forming a thick butt shingle which comprises forming a coating of varying thickness on the broad surface of a web by applying plastic coating materials of diverse consistencies to different portions of said broad surface of said web.

4. The method of forming a thick butt shingle which comprises forming a coating of varying thickness on the broad surface of a web by applying plastic coating materials of diverse consistencies to different portions of said broad surface of said web, said diversely characterized

coating materials being permitted to merge at the junctions of the areas covered thereby to comprise an integral coating over the entire broad surface of the web.

5. The method of forming a thick butt shingle which comprises supplying longitudinally of a foundation web a plastic coating of one thickness along selected areas of said web and thereafter supplying another plastic coating of different thickness along only those portions of the web left unsurfaced by the first coating.

6. The method of forming a thick butt shingle which comprises supplying longitudinally of the broad surface of a foundation web a plastic coating of one thickness and consistency along selected areas thereof and supplying another plastic coating of different thickness and consistency along the areas of said broad surface left unsurfaced by said first coating.

7. The method of forming a thick butt shingle having the weather portion thereof of one thickness and the overlapped portion thereof of another thickness, which consists in applying plastic coatings of different thicknesses and viscosities along the weather and overlapped portions of said shingle, said different coatings being respectively applied to separate portions of said shingle in nonoverlapping relation.

8. A method of forming a thick butt shingle having the weather portion thereof of one thickness and the overlapped portion thereof of another thickness, which method consists in applying plastic coatings of different thicknesses along said weather and said overlapped portions of said shingle, the coating applied to said overlapped portion being confined entirely to said overlapped portion and being at an elevated temperature to provide a low viscosity during application, and the coating applied to said weather portion being at a lower temperature to provide a high viscosity during application.

9. A method of forming a thick butt shingle which comprises applying a plastic coating to selected portions only of a foundation element, applying a layer of grits to the surface of said element, reversing said element to remove said grits from the uncoated portions thereof, thereafter applying only to said uncoated portions of said element a plastic coating of a different thickness, and applying another layer of grits to the surface of said foundation element, said first layer of grits embedded in said first coating preventing the adherence of said second layer of grits to said selected portions.

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