Feb. 22, 1927. 1,618,192

G. P. HEPPES

ROOFING

Filed May 17, 1923

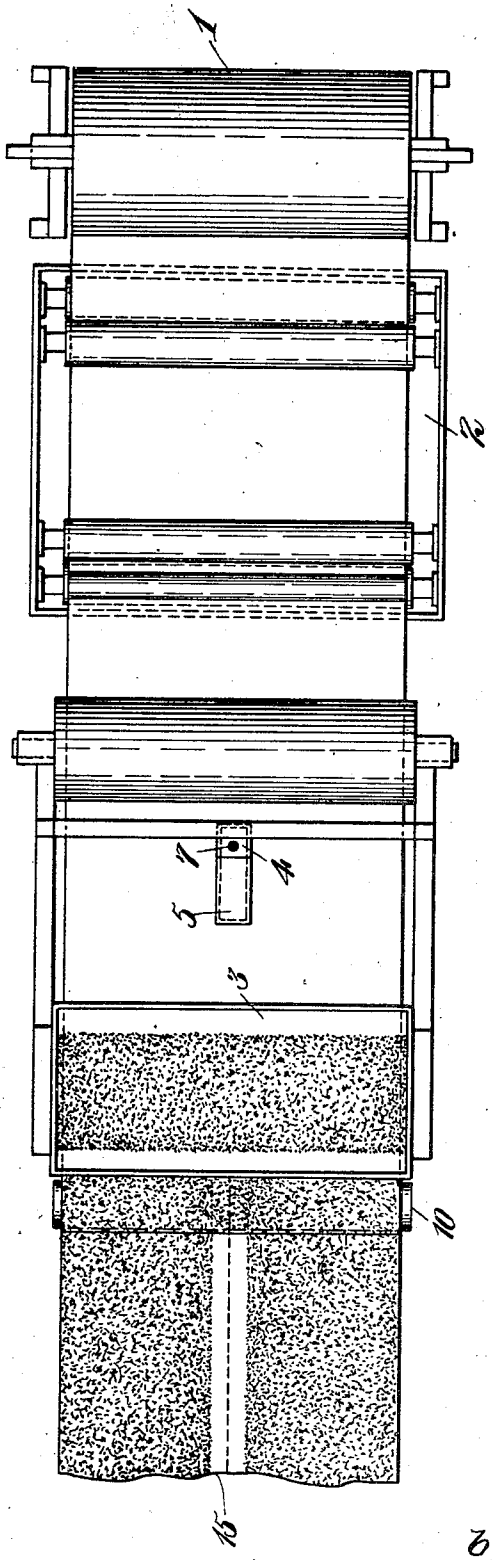


Fig. 1.

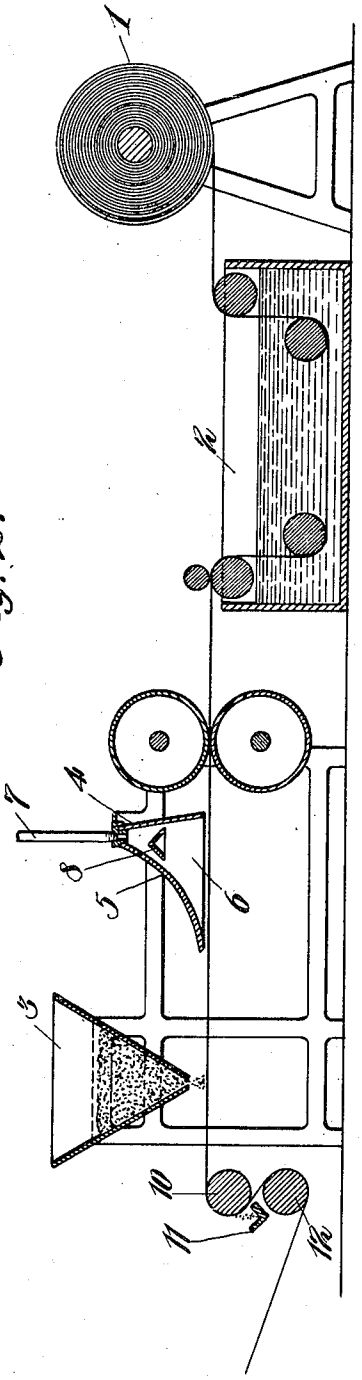


Fig. 2.

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Patented Feb. 22, 1927. 1,618,192

UNITED STATES PATENT OFFICE.

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ROOFING.

Application filed May 17, 1923. Serial No. 639,634.

This invention relates to roofing, more particularly to that type which is shipped in rolls and laid in slightly overlapping courses on the roof. With roofing of this character it is desirable to cement together the overlapping portions of adjacent sheets in order to insure a weather tight roof. The sheet, however, is commonly surfaced with granular material, such as crushed slate which is partially embedded in its face as it comes from the asphalt or other compound coating mechanism while it is still warm and tacky. This granular surface is too rough to form a good cement bond with the under surface of the overlying sheet and it is therefore desirable to omit this surfacing at the upper margin of each sheet where it underlies the sheet next above so that a better bonding surface is produced.

This invention relates to a method and machine for treating this margin by which the surfacing material will not adhere thereto during the manufacture of the sheet, this being accomplished by chilling that portion of the sheet which it is desired to leave unsurfaced so that the asphalt is set sufficiently to prevent adherence of the surfacing material at that portion only by the time it is applied thereto, the remainder of the sheet being in proper condition to take the surfacing.

For a more complete understanding of this invention reference may be had to the accompanying drawings in which—

Figure 1 is a somewhat diagrammatic plan of a portion of the roofing machine illustrating the invention.

Figure 2 is a central longitudinal section of the same machine.

Referring to these figures, at 1 is indicated a roll of rag felt which is saturated and coated with asphalt, a tank 2 being shown through which the web passes and wherein the coating operation, and, if desired, the saturating operation also may be performed. The particular method and apparatus by which the material is saturated and coated is immaterial to this invention and it has therefore been illustrated only conventionally. The coated sheet as it leaves the tank 2 is still warm and tacky and in condition to receive the surfacing material, a hopper for containing this material and from which it may be fed at proper rate to the sheet as it is fed therebeneath by driving feed rolls being indicated at 3. Before the coated sheet reaches the hopper it is acted upon by a cooling device indicated at 4 by which a portion of the coating asphalt in strip form is caused to congeal or set before the sheet reaches the surfacing mechanism 3 sufficiently to prevent the granular material sticking thereto. As shown this cooling device 4 is positioned centrally of a comparatively wide sheet, it being designed that the sheet be split through this strip as shown by the dotted line 15 in Figure 1. If it is not desired to split the sheet the mechanism may be positioned to act on one margin of the sheet only. The cooling mechanism, as shown, comprises an expansion chamber 5 having an open lower end 6 of a width corresponding to the width of the strip desired to be left unsurfaced and of any length proper to cause the material to be treated a sufficient length of time to insure sufficient congealing of the coating asphalt. Compressed air may be supplied to the interior of this casing through a pipe 7 and as shown a baffle 8 may be positioned within the chamber 5 against which the blast of air from the pipe 7 may impinge in order to prevent the air from striking the surface of the sheet with sufficient force to displace the coating asphalt thereon. The chamber 5 is shown as of considerable volume in order that the compressed air from the pipe 7 may be expanded and thereby very considerably cooled, and the opening at the lower end is of sufficient size so that the air issues therefrom at a comparatively slow rate insufficient to cause any displacement of the surface asphalt. The asphalt along a strip is thus congealed as the sheet passes beneath this chamber, so that as the surfacing material is applied thereto it does not adhere to this strip portion but adheres to the remainder of the sheet. The sheet may then be passed about a roll 10 so that the nonadherent surfacing may drop off and be

conveyed away as by means of a trough 11, and the sheet may then pass about a roller 12 which engages the surfaced side of the sheet and causes the adherent surfacing to become partially embedded in the coating. The sheet is thus surfaced except along the strip which it is desired should remain unsurfaced.

While this invention has been described more particularly with reference to roll roofing material, it should be recognized that the same method might be employed to form ornamental designs in a strip or other form on roofing of other descriptions where it is desired to apply surfacing to certain portions only. Except as otherwise specified, therefore, the claims are intended to cover this subject matter also. The use of air jets to displace the asphalt coating while it is warm and plastic, however, does not come within the scope of the present invention.

Having thus described an embodiment of this invention it should be evident to those skilled in the art that various changes and modifications might be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. The method of making rough surfaced roofing having a plane margin which comprises coating sheet material with a hot molten compound, cooling said margin quickly to cause the compound along said margin to partially harden and then applying rough surfacing material to the face of the sheet while all but the margin is sufficiently soft for said surfacing material to adhere thereto and then finishing the sheet.

2. The method of making rough surfaced roofing which comprises coating sheet material with a hot molten compound, cooling said compound along a strip lengthwise of the sheet to cause it to partially harden, applying rough surfacing material to the face of the sheet while all but said strip is sufficiently soft for said surfacing material to adhere thereto, pressing the adherent surfacing partially into said coating, and then cutting the sheet through said strip to form a pair of sheets each having a margin free from said surfacing material.

3. The method of making rough surfaced roofing which comprises coating sheet material with hot molten material, blowing cold air thereagainst along a determined path to cool and partially set the coating without deforming the same, and then applying a rough surfacing material to the surface of said sheet while said coating material is sufficiently warm and tacky for said surfacing material to adhere thereto except on said cooled path, and then completing the roofing.

4. The method of making rough surfaced roofing which comprises coating sheet material with hot molten material, blowing cold air thereagainst along a determined path to cool and partially set the coating, applying a rough surfacing material to the surface of said sheet while said coating material is sufficiently warm and tacky for said surfacing material to adhere thereto except on said cooled path, and then completing the roofing.

5. The method of making roofing which comprises coating a web of sheet material with hot molten asphalt, directing cold air against said coated material along the margin to cool and partially set the asphalt along a strip, applying surfacing material to the surface of said sheet while the asphalt is still sufficiently warm and tacky except along said strip for the surfacing to adhere, the asphalt along said strip being too cool to permit said surfacing to adhere, removing the non-adherent surfacing and then finishing the sheet.

6. The method of making roofing which comprises coating a web of sheet material with hot molten asphalt, directing cold air against said coated material along the margin to cool and partially set the asphalt along a strip without deformation of the coating, applying surfacing material to the surface of said sheet while the asphalt is still sufficiently warm and tacky except along said strip for the surfacing to adhere, the asphalt along said strip being too cool to permit said surfacing to adhere, and then finishing the sheet.

7. A machine of the class described comprising means for coating sheet material with a heated molten compound, means to feed the sheet, means to direct cold air to a portion of the surface of said sheet to cool and partially set the compound along a strip as it is fed, and means for applying a surfacing to the coated material while it is sufficiently warm and tacky to cause said surfacing to adhere except along said strip.

8. A machine of the class described comprising means for coating sheet material with a heated molten compound, means to feed the sheet progressively, means to direct a gentle draft of cold air of insufficient force to cause deformation of the coating to a portion of the surface of said sheet to cool and partially set the compound along a strip as it is fed, and means for applying a surfacing to the coated material while it is sufficiently warm and tacky to cause said surfacing to adhere except along said strip.

9. The method of making roofing which comprises coating sheet material with hot molten material, locally cooling the surface of the sheet to partially set the molten material, and then applying surfacing material thereto while the remaining portions of the surface are sufficiently warm and tacky for said surfacing to adhere.

10. A machine of the class described,

which comprises means for coating sheet material with hot molten material, means for blowing cold air on the coated surface over desired areas to cool and set the molten material, and means for applying a surfacing while the remaining areas are sufficiently warm and tacky for the surfacing to adhere thereto, the cooled areas being set sufficiently to prevent adherence of the surfacing thereto.

In testimony whereof I have affixed my signature.

GEORGE P. HEPPES.