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APPARATUS AND PROCESS FOR PRODUCING PREPARED ROOFING

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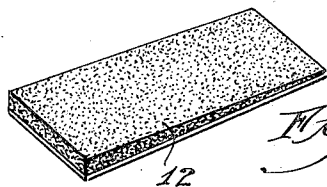
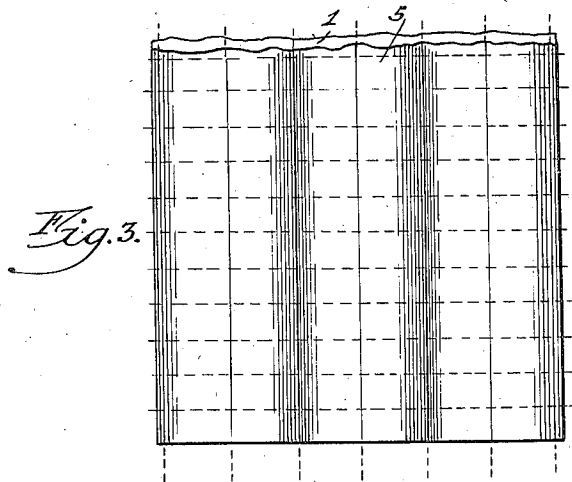
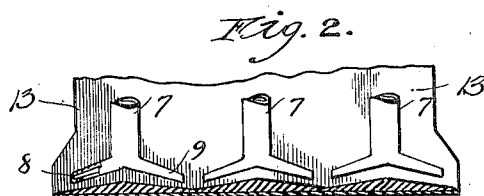
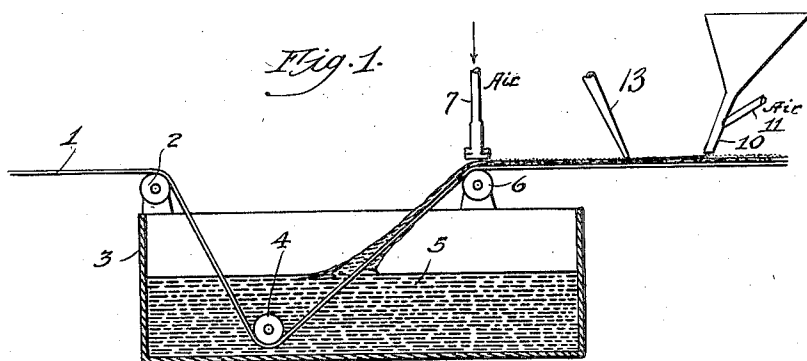


Fig. 4

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APPARATUS AND PROCESS FOR PRODUCING PREPARED ROOFING.

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This invention relates to improvements in prepared roofing and a process and apparatus for producing the same and refers more particularly to an improved apparatus and process for producing a tapered shingle formed of prepared roofing material.

Among the salient objects of the invention are to provide a process in which the roofing material of felt, fabric or other well known compositions used in the manufacture of prepared roofing, subsequent to its passage through the asphaltic or bituminous bath, is subjected, while in a soft plastic state, to the forming effect of an air blast by means of which definite designs are produced upon its surface; to provide a process which may be similarly carried out by projecting the coating substance directly from the nozzles on to the roofing felt in a manner to produce designs identical to those formed by the air blast; to provide a process in which the design forming operation may be performed in combination with doctor blades or forming rolls by means of which the designs may be made more distinct; to provide a process in which, in addition to the design forming operation, by means of air blasts the surfacing material may also be applied to the sheets through similar nozzles and with the assistance of compressed air whereby the finer particles of dust are diverted from the surface of the coated roofing sheet thereby furnishing a better bond between the granular surfacing material and the adhesive coating substance of the sheet; to provide a process in which, in addition to the forming effect, the air blast will assist materially in cooling the sheet subsequent to its passing through the heated coating substance, thereby reducing the cost of cooling machinery; and to provide an apparatus adapted to carry out the above process.

Fig. 1 is a diagrammatic side view of only that portion of the roofing machinery essential to the understanding of the present invention.

Fig. 2 is an edge view, partly in section, showing the position of the nozzles above the sheet.

Fig. 3 is a plan view of the roofing sheet after formation.

Fig. 4 is a detail of one of the finished shingles.

The roofing sheet 1 comprising a felted stock common in the roofing art in making prepared roofing is fed from any conven-

ient source (not shown) over the guide roll 2 which is supported by suitable bearings on the edge of the coating tank 3. A lower immersing roll 4 is positioned in the bottom of the tank and guides the roofing sheet through the bath of heavy bituminous or asphaltic material shown at 5. After passing through the bath and being coated with this heavy asphaltic or bituminous substance, the sheet is directed over the guide roll 6 mounted on the opposite side of the tank. Above the guide roll 6 are positioned a series of nozzles 7 having two forked projections 8 and 9 at their lower ends, said projections having emission apertures or open mouthpieces cut along their lower surfaces. Compressed air, furnished from any suitable source (not shown), is forced to flow under high pressure through the nozzles 7 and permitted to play upon the soft plastic coating of the roofing sheet as it emerges from the coating bath 5. The mouthpieces or slots through which the compressed air passes in the lower sides of the arms 8 and 9 are positioned to direct the air in concentrated jets so as to produce a rigid or wave effect in the coating substance on the surface of the sheet. As shown in Fig. 2 with the use of three nozzles positioned across the sheet three regular ridges will be formed running longitudinally of the sheet. A similar formation may be produced upon the surface of the sheet by the use of a single nozzle having a jagged mouthpiece which will direct the air in a manner similar to that produced by the three nozzles as shown. Also the invention is not restricted to the simple ridge design shown in the drawings as numerous other effects may be produced upon the coating surface by directing the air jets in varied manner.

After being thus formed by an air blast, if it is desired that the design be more definite or clear cut, a doctor blade 13 or pressure embossing roll may be applied to the sheet in order to bring out more clearly the design formed by the air from the nozzles. At 10 is shown a nozzle supplied with compressed air through a pipe 11 which blows comminuted material from any suitable source, such as slate or other mineral matter, which may be applied to the formed surface with the assistance of the air blast. After drying and cooling, the formed sheet is cut into shingles similar to that shown at 12.

I claim as my invention:

1. A process for forming prepared roofing sheets consisting in producing a contour upon the coated sheet while in a heated plastic state by projecting jets of compressed air on to its surface.
2. A process for forming prepared roofing, consisting in producing a contour upon the coated sheet while in a plastic state by projecting jets of compressed air at a predetermined angle to produce the desired effect.
3. A process of forming prepared roofing, consisting in subjecting the plastic coating substance upon the roofing sheet to an air blast to form a predetermined relief design.
4. A process of forming prepared roofing, which comprises applying a thermoplastic coating upon a sheet, and while the coating is plastic applying fluid under pressure thereagainst to form depressions therein.
5. A process of forming prepared roofing, which comprises applying a thermoplastic coating upon a sheet, carrying said sheet over a support, forming longitudinal depressions in the plastic coating by applying fluid under pressure against the coating on that portion of the sheet which is passing the support, and then applying grit to the plastic coating.
6. A process for forming prepared roofing, consisting in producing a contour upon the coated sheet while in a plastic state by projecting jets of compressed air at a predetermined angle to produce the desired effect, subsequently imposing a granular mineral coating to the formed surface.
7. In an apparatus for producing prepared roofing, the combination with a means for advancing the roofing sheet, of a means for projecting fluid jets upon the coated surface of the sheet while the coating substance is in a plastic state to produce definite designs thereon.
8. In an apparatus for producing prepared roofing, the combination with a means for advancing the roofing sheet, of a means for projecting jets of compressed air under high velocity at different angles upon the plastic coating of the sheet to produce predetermined designs thereon.
9. A process for forming prepared roofing sheets consisting in producing a contour upon the coated sheet while in a heated plastic state by projecting jets of compressed air onto its surface and affixing a granular surfacing material with an air blast on the surface of the sheet.
10. A process for forming prepared roofing, consisting in producing a contour upon the coated sheet while in a plastic state by projecting jets of compressed air at a predetermined angle to produce the desired effect, and affixing a granular surfacing material to the coated sheet with an air blast.

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