

Dec. 2, 1924.

H. A. CUMFER ET AL

1,517,826

ROOFING MATERIAL

Filed May 5, 1913

2 Sheets-Sheet 1

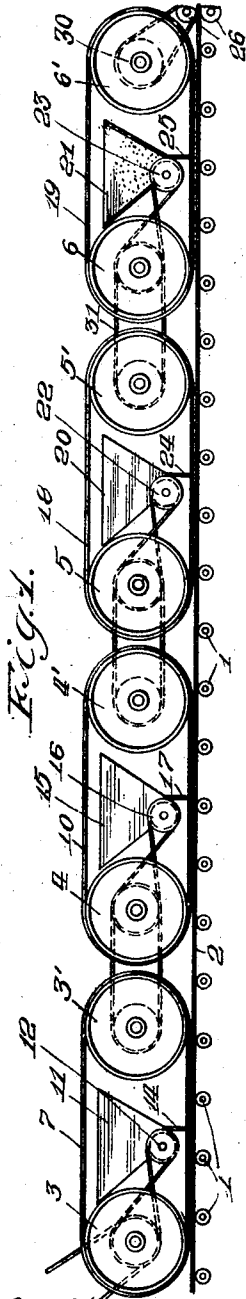


Fig. 1.

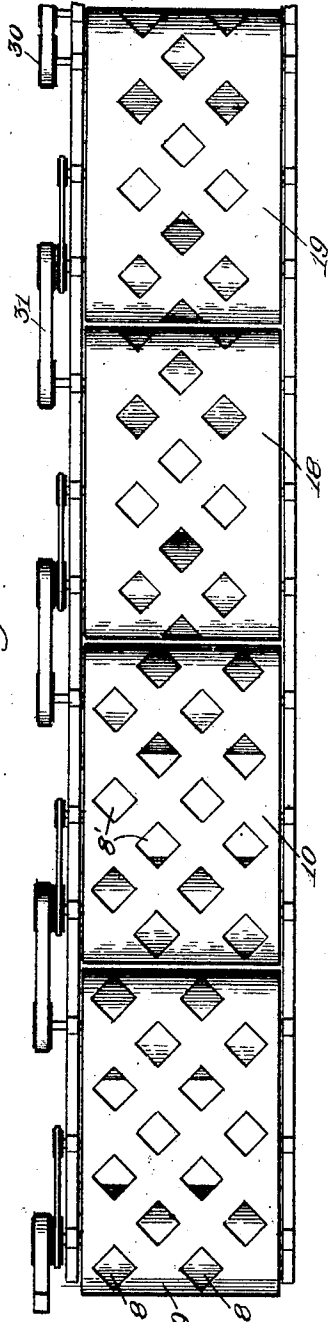


Fig. 2.

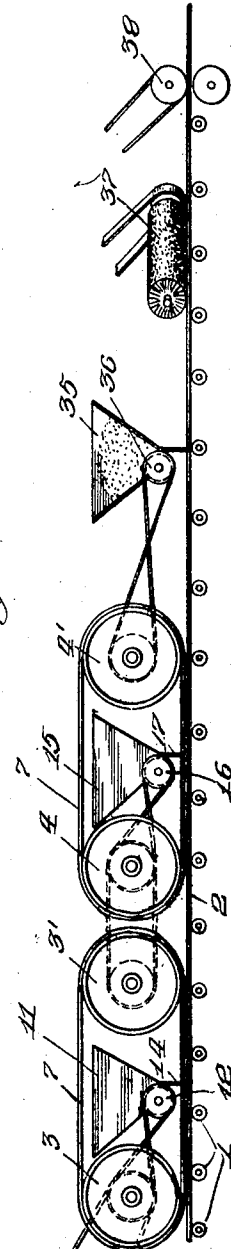


Fig. 3.

Witnesses:
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Blanche Chalmer

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Fig. 5.

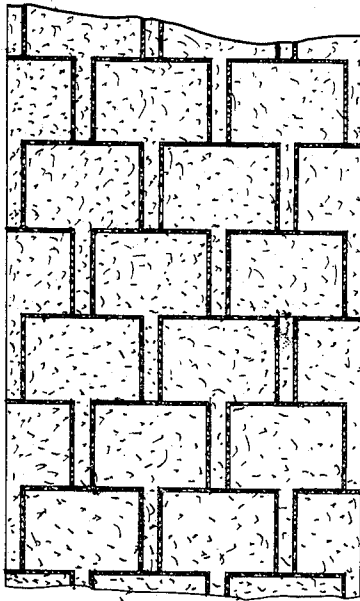


Fig. 7.

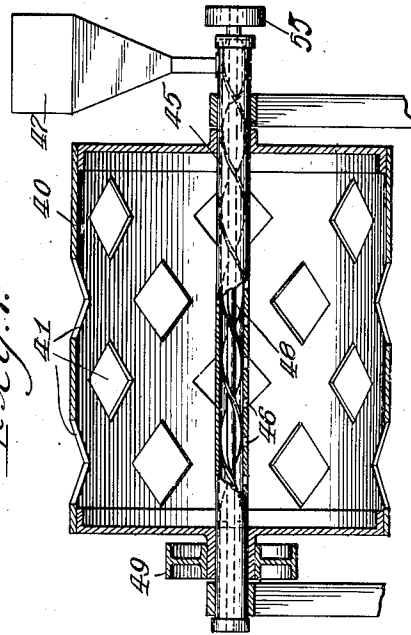


Fig. 4.

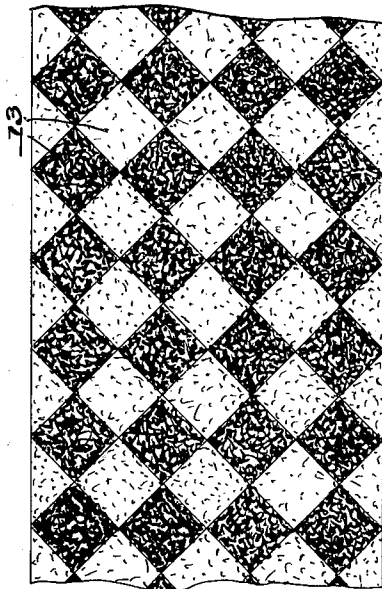
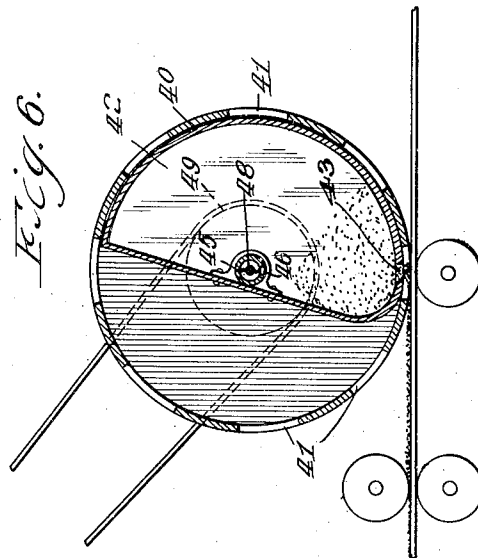


Fig. 6.



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UNITED STATES PATENT OFFICE.

HARRY A. CUMFER, OF CHICAGO, ILLINOIS, AND OWEN D. McFARLAND, OF MISHAWAKA, INDIANA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE FLINTKOTE COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ROOFING MATERIAL.

Application filed May 5, 1913. Serial No. 765,696.

To all whom it may concern:

Be it known that we, HARRY A. CUMFER and OWEN D. McFARLAND, both citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, and Mishawaka, county of St. Joseph, and State of Indiana, respectively, have invented certain new and useful Improvements in Roofing Materials, of which the following is a description.

Our invention relates to that class of material known as roofing paper or felt in which a strip of suitable material is coated with tar, asphaltum or other suitable water-

15 proofing material and finely divided or granular slate, soapstone or sand is more or less imbedded in the waterproofing material and thereby attached to the exposed side of the finished sheet.

20 The object of our invention is to produce a material of the kind described, in which the granular material may be laid on in patterns using material of various colors or other physical characteristics to produce

25 a more ornamental and thus a more desirable roof.

To this end our invention consists in the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the

30 claims.

In the accompanying drawings wherein like or similar reference characters indicate like or corresponding parts,

35 Fig. 1 is a side elevation of a machine for producing our improved roofing.

Fig. 2 is a plan view of the same.

Fig. 3 is a slightly modified form of mechanism for producing our improved

40 roofing.

Figs. 4 and 5 show desirable forms of our improved roofing material.

Fig. 6 is an elevation partially in section of a slightly modified form of mechanism

45 for producing our improved roofing.

Fig. 7 is a section taken substantially on line 7—7 of Fig. 6.

In the form shown in the drawings 1—1 are rollers or other suitable means arranged for supporting the coated roofing material 2 preferably arranged to receive the material as it comes from the usual coating machines (not shown). A pattern belt

50 7 is arranged directly above the strip 2

as it lays on the supports 1 supported in position by a pair of drums or rollers 3—3' so arranged that the part of the pattern adjacent the roofing material is just out of contact with the water-proofing material. The pattern belt 7 is provided with apertures 8—8 through its surface of any desired form or size adapted to accurately correspond with some figure or part of a figure which it is desired to show in a design upon the surface of the finished material; for

55 60 65 70

A second pattern belt 10 is provided having a similar series of openings 8' mounted upon suitable drums or rollers 4'—4' and arranged to co-operate with the pattern belt 7 so that when the roofing material 2 is moved synchronously with the belts 7 and 10 an impression of the openings of the two pattern belts will show a series of squares or rectangles 13 connected at their corners as shown in Fig. 4. Obviously where the completed design is such that the squares or other figures are sufficiently separated from each other to permit all the figures of one color or kind to be cut through the surface of a single pattern but without unduly weakening it, a similar pattern belt may be employed and produce substantially

75 80 85 90 95 100 105

10 tected by the solid portions of the pattern. A hopper 15 with feeder 16 and scraper 17 is provided for the pattern belt 10 so that when the material passes beyond the drum 4' substantially one-half its surface will be covered with the granular material from the hoppers 11 and 15 arranged in squares or rectangles corresponding to the openings in the pattern belts 7 and 10, while
 15 the remaining one-half also in the form of squares will be entirely free from the same. The drums 5-5' 6-6' are provided with pattern belts 18 and 19 respectively and with hoppers 20 and 21 and feeders 22 and
 20 23 and with scrapers 24 and 25 adapted to operate in all respects substantially the same as the corresponding parts hereinbefore described. The pattern belts 18 and 19 are arranged however to deposit material on the bare or unoccupied portions of the roofing material, thus forming a uniform coating over the entire surface of the roofing material at the same time by providing granular material to the hoppers 11 and
 25 15 of one color and to the hoppers 20 and 21 of a sharply contrasting color, a roofing material will be provided having its entire surface covered uniformly with any desired number or kinds of granular material arranged in any desired design, the several parts of which may be formed of material of any desired color or physical characteristics to produce the effect sought. A roller 26 is preferably provided beyond the several
 30 pattern belts to press the granular material firmly upon the coated surface of the roofing material 2 to imbed the granules into and securely attach them to the surface of the water-proof coating of the material. Any suitable means may be provided for operating the several pattern belts. In the form shown a sprocket wheel 30 is rigidly attached to each of the several drums. And a sprocket chain 31 or other convenient
 35 means is provided connecting the several sprocket wheels and arranged to accurately maintain the timing of the several drums and the pattern belts mounted thereon, the mechanism is so constructed and arranged
 40 that the several belts move absolutely synchronously with the roofing material 2 thus accurately maintaining pattern in position upon the roofing material and insuring a clear, sharp outline for the design.
 45 In the form shown in Fig. 3 the drums 3-3' and 4-4' are provided substantially as hereinbefore described, with pattern belts 7 and 10 and hoppers 11 and 15 to feed material to the belts. The drums 5-5' and
 50 6-6' are omitted however and a single hopper 35 is provided with a feeder 36 adapted to direct a substantially uniform layer of the granular material on to the roofing material 2. A brush 37 or other convenient means is positioned slightly above the surface

of the roofing material to remove all surplus granular material. When thus constructed the pattern belts 7 and 10 operate substantially as hereinbefore described and the hopper 35 and feeder 36 deposit a substantially uniform coating of granular material over the entire surface of the roofing material including the portion previously covered through the pattern belts 7 and 10, these parts receiving a double portion the excess part of which is removed by the brush 37 before reaching the ironing or pressure rolls 38 for imbedding the granules into the coating of the roofing material.

In the form shown in Figs. 6 and 7 a drum 40 is provided having the pattern openings 41 formed in its peripheral wall. The wall of the drum 40 is preferably finished upon the interior. The hopper 42 is positioned within the drum and the portion of the hopper adjacent the openings 43 in its bottom snugly fits against the wall of the drum which thus operates as a valve and prevents the escape of material from the hopper except where an opening 41 coincides with an opening 43 thus accurately distributing the granules only upon the roofing material except through the openings 43. Any number of pattern cylinders 40 may be employed to work out the design upon the roofing material substantially in the same manner as the pattern belts hereinbefore described. In this form the pattern cylinder 40 is preferably supported upon a tubular shaft 45 with suitable openings 46 arranged therein and rigidly supported. A hopper 47 is provided at its extremities to receive the granular material and direct the same into the tubular shaft 45. A rotatable screw conveyer 48 is positioned within the tubular member 45. The drum 40 is rotated by a belt or chain upon a suitable wheel 49 rigidly attached to drum and the material is carried into the cylinder by the screw conveyer which is operated by suitable means co-operating with the pulley 55 rigidly attached to the end thereof and the material escapes through the openings 46 into the hopper 42.

In Fig. 5 we have shown comparative narrow lines intended to represent shingles, slate or tile when laid upon a roof but it is obvious that a vast number of designs may be employed using any desired number of colors or other physical characteristics to produce a pleasing contrast in the finished design.

Having thus described our improvement it is obvious that various immaterial modifications may be made in our device without departing from the spirit of our invention, hence we do not wish to be understood as limiting ourselves to the exact form or construction shown.

What we claim as new and desire to secure by Letters Patent is:

1. A process for producing prepared roofing which consists in feeding a sheet of roofing having an adhesive coated surface, adjacent a pattern mechanism whereby grit is fed on to the sheet in a design pattern on to selected areas of the sheet and subsequently passing the sheet adjacent a second pattern mechanism whereby grit is deposited on other areas of the adhesive coating.
2. A process for producing prepared roofing which consists in feeding a sheet of roofing having an adhesive coated surface through successive design making stages whereby selected areas in the form of patterns on the sheet are covered with grit of predetermined colors by deposition of said grit upon the sheet, grit being supplied to the uncovered areas in the successive stages.
3. A process in producing prepared roofing which consists in feeding a sheet having an adhesive coated surface past a revolving drum, feeding grit of a predetermined color from openings of predetermined configuration in the drum to cover selected and spaced areas of the coating with grit of a predetermined color, and then applying grit of a different color than the first to the remaining uncovered areas of said adhesive coating.
4. A process for producing prepared roofing which consists in feeding a sheet of roofing having an adhesive coated surface adjacent a feeding mechanism, causing the grit of a predetermined color to pass from the feeding mechanism from spaces in a revolving drum to coat selected areas of the roofing with said grit and then passing grit of a different color than the first from a second drum to cover other areas of the adhesive coating.
- In testimony whereof, we have hereunto signed our names in the presence of two subscribing witnesses.
- HARRY A. CUMFER.
OWEN D. McFARLAND.
- Witnesses:
BURTON U. HILLS,
BLANCHE CHALMERS.