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1,513,969

H. CUMFER ET AL

ROOFING MACHINE

Original Filed May 5, 1913

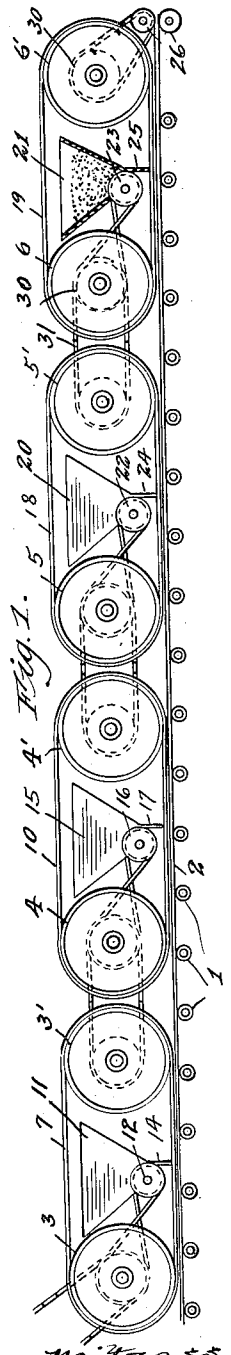


Fig. 1.

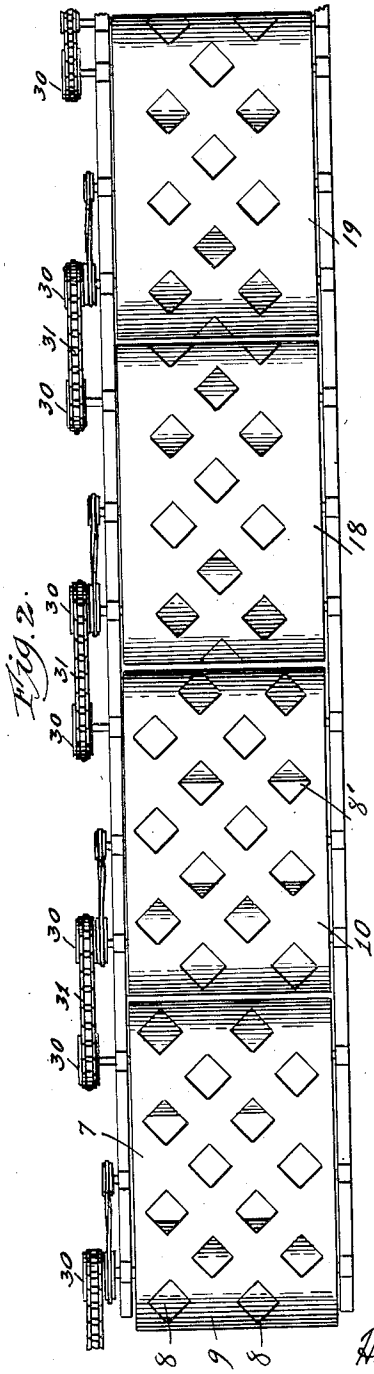


Fig. 2.

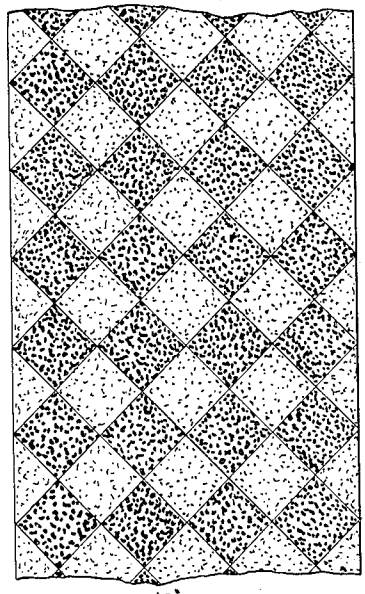


Fig. 3.

Witness,

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UNITED STATES PATENT OFFICE.

HARRY CUMFER, OF CHICAGO, ILLINOIS, AND OWEN D. McFARLAND, OF MISHAWAKA, INDIANA, ASSIGNORS OF ONE-FOURTH TO CARL F. HOFMANN AND GEORGE P. HEPPES, BOTH OF CHICAGO, ILLINOIS.

ROOFING MACHINE.

Original application filed May 5, 1913, Serial No. 765,696. Divided and this application filed April 1, 1918. Serial No. 225,960.

To all whom it may concern:

Be it known that we, HARRY 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 Machines, of which the following is a specification.

This application is a divisional application of an original application filed May 5, 1913, Serial #765696.

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

The object of our invention herein described is to produce a novel and improved mechanism for laying the granular material on in patterns using material of various colors or other physical characteristics; to produce 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 claims.

In the accompanying drawings:

Fig. 1 is a side elevation of a machine for carrying out the process.

Fig. 2 is a plan view of the same.

Fig. 3 shows a desirable form of the finished roofing material.

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 7 is arranged directly above the strip 2 as it lays on the supports 1 is 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 example, in the form shown a series of square or rectangular openings 8—8 are provided of substantially uniform size and their diagonals in line. The several openings, however, are separated by a space 9 sufficient to permit an opening of substantially the same size to be positioned between their adjacent corners.

A second pattern belt 10 is provided having a similar series of openings 8′ is 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. 3. 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 the same result. Any suitable means may be provided to direct a suitable granular material through the openings in the pattern belts to the roofing material beneath them. In the form shown a hopper 11 is positioned between the drums 3—3′ with a suitable feeding mechanism 12 of any desired form adapted to discharge a predetermined amount of the material in the hopper at a substantially uniform rate over the entire surface of the side of the belt 7 adjacent the roofing material 2. A brush or scraper 14 is provided to direct the granular material from the feeder to the belt and prevent its being carried by the belt beyond the scraper where it might interfere with the operation of the belt or become dusted over those portions of the material intended to be protected 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 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 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 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 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 waterproof 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 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 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.

We claim as our invention:

1. A device of the kind described comprising means for feeding a sheet of roofing coated with an adhesive waterproofing material, of means for feeding granular material of a given size and color to predetermined areas of said roofing determined by endless perforated pattern bands and means in advance of the first named means for feeding granular material of the same size but different color to the other areas of said roofing.

2. A device of the kind described comprising means for feeding a sheet of roofing coated with an adhesive waterproofing material, in combination with endless bands having perforated patterns and mounted above and in close proximity with said sheet, means for feeding granular material of a predetermined size and color through the pattern of one band and different colored material through another pattern band.

3. A device of the kind described comprising means for feeding a sheet of roofing coated with an adhesive waterproofing material in combination with endless pattern belts having perforated patterns therein mounted adjacent the sheet and covering different areas thereof, means for feeding granular material of varied colors or sizes through the different patterns onto the sheet.

4. An apparatus for producing ornamental sheet roofing comprising an endless travelling ribbon stencil, means for causing a flexible base to travel close to said stencil, stationary means for applying an element to the base through said stencil, means for causing said stencil to travel around said stationary means, and means outside of the stencil for applying a second element to the base after leaving said stencil.

5. An apparatus for producing ornamental sheet roofing, comprising an endless flexible stencil, a plurality of rollers about which said stencil travels, means for causing a flexible sheet to travel in association with the lower run of said stencil, means located above said lower run for depositing grit through the stencil on to said sheet, means substantially contacting the face of the stencil to prevent grit being carried beyond said means, and a second means for depositing grit on the sheet after it leaves the stencil to fill the unoccupied spaces.

6. In an apparatus for uniformly applying comminuted materials to separated areas of a roofing strip provided with a prepared surface comprising means for feeding the strip in a rectilinear lengthwise direction and a pattern element having the active part thereof travelling contiguous to the surface of said strip parallel thereto and in synchronism therewith and provided with predetermined spaced apart openings and means located above said active part of the pattern element for directing the comminuted materials between the side edges thereof.

7. In an apparatus for uniformly applying comminuted material to separated areas of a roofing strip provided with a prepared surface comprising means for feeding the strip in a rectilinear lengthwise direction and a pattern element having the active part thereof travelling contiguous to the surface of said strip parallel thereto and

in synchronism therewith and provided with predetermined spaced apart openings and means located above said active part of the pattern element for directing the comminuted material between the side edges thereof, and means located in advance of said pattern element for discharging upon said prepared surface of the roofing strip comminuted material of a different character for occupying the uncovered space on the roofing strip.

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