

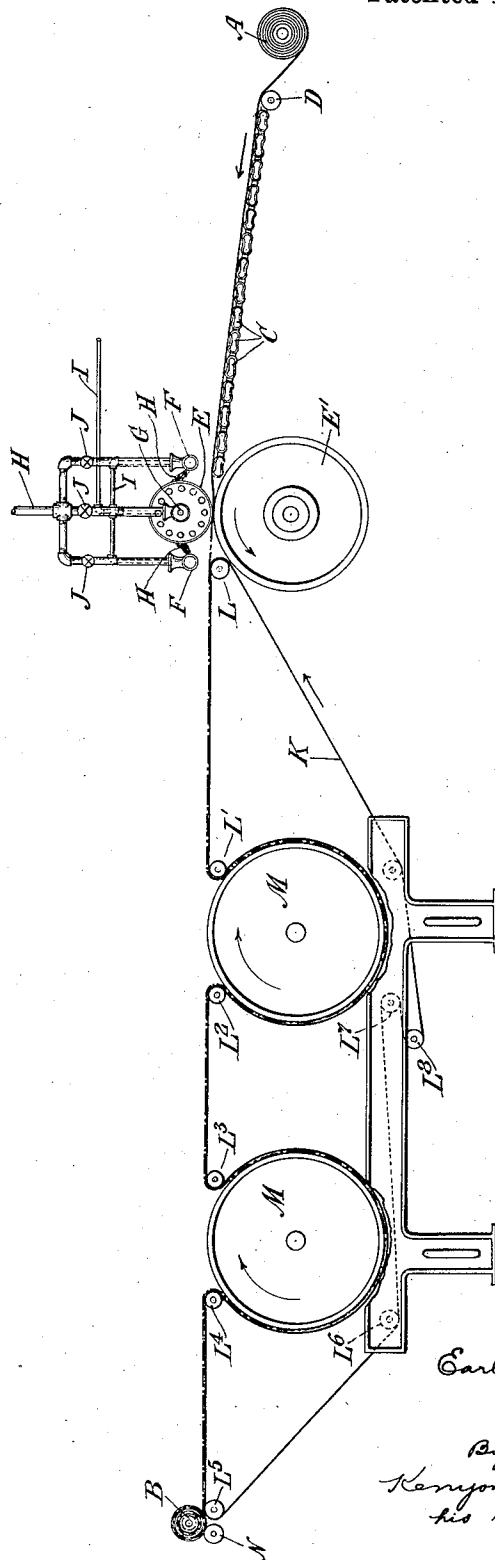
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METHOD AND APPARATUS FOR ORNAMENTING PREPARED ROOFING.

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1,369,129.

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UNITED STATES PATENT OFFICE.

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METHOD AND APPARATUS FOR ORNAMENTING PREPARED ROOFING.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EARL ROSS, a citizen of the United States, and a resident of Wyoming, in the county of Hamilton and State of Ohio, whose post-office address is 111 Springfield Pike, Wyoming, Ohio, have invented new and useful Improvements in Methods and Apparatus for Ornamenting Prepared Roofing, of which the following is a specification.

My invention relates to improvements in the method of an apparatus for the manufacture of ornamental roofing and is addressed particularly to ornamenting prepared flexible roofing having a surface layer of mineral such as crushed slate, sand, crushed rock and other similar mineral particles.

Prepared, flexible roofing of the type which I ornament by my method and apparatus comprises generally one or more plies of felt, burlap or similar material saturated with a bituminous substance and, if more than one ply is used, held in engagement with each other by bituminous material. In the manufacture of this roofing after the one or more plies have been saturated, and if of more than one ply the plies have been brought into engagement with each other, it is usual to apply a bituminous coating material and then on the surface of that coating material place crushed slate, crushed rock, mica or similar material. Such roofing has been ornamented by painting on the surface, of the exposed mineral, lines to get the ornamental effect desired. I have found that by applying heat and pressure to certain portions of the roofing, after having preheated it, that it is possible to emboss the upper surface of said roofing and make a highly satisfactory and very pleasing and economical ornamented roofing.

In the drawings I have shown longitudinal sections through my improved apparatus for ornamenting roofing by my method.

Preferably my method consists of taking a roll of mineral surface roofing, passing it over a preheater, steam coils as shown in the drawing, so that the heat from the coils passes up through the roofing and heat same from the underside. Having preheated the roofing my method is to pass the preheated roofing preferably between two rollers, one of which bears a design in relief and which is heated so that the raised portions of said

design which contact with the mineral surface of the roofing are heated to the desired temperature. As this roofing passes between the two rolls, the heated design roll and the foundation roll, the raised heated portions, forming the design, press upon the surface of the mineral particles and force same down into the coating material at the same time the coating material passes up and covers the mineral particles so that a depression is formed wherever the raised portion of the design rollers contact with the roofing. Passing from the design roller I then cool the roofing and roll it up ready for shipment.

In the drawing, A is the roll of roofing to be ornamented, B the finished roll. C is the preheater or series of coils. D is an idler roll over which the roofing from the roll A passes onto the preheater or steam coils. E is the design roller mounted in bearings and provided with means for heating the exterior of the roll and the interior. F, F are gas mixers having burners so arranged that a flame, shown at H, contacts with the outer surface of the design roll E. G is a mixing chamber for the gas and air similar to F, F and is provided with burners or openings so that the interior of the roll E which is hollow is also heated. I, I are air lines leading to the mixers F and G. H, H are gas lines leading likewise to the mixers F and G. In the gas lines at suitable points are arranged valves J to close off the supply of gas when desired. K is a continuous belt of heavy canvas preferably wider than the width of the roofing to be ornamented. This endless belt revolves around idlers L, L', L², L³, L⁴, L⁵, L⁶, L⁷, L⁸ and L⁹. L' and L⁸ are arranged so that their positions may be changed to tighten or loosen the canvas belt K. M, M are cooling drums arranged so that the endless belt K between the idlers L' and L² passes around the first cooling drum and between the idlers L³ and L⁴ passes around the second cooling drum. These cooling drums are of the ordinary type and may be cooled by water or any other suitable means. After the roofing from the roll A passes over the preheater C and between the design roll E and the foundation or pressure roll E' and has been embossed by the design roller E, it then passes on the endless belt K around cooling drums M, M and is rolled up at B. N is an idler

roller so arranged in relation to the idler roller L⁵ around which the endless canvas belt K passes that the roll may rest upon and be supported by the idlers N and L⁵.

- 5 I have found that better results are obtained by having the preheater arranged so that it heats the roofing from the under side, that is, the side opposite the mineral surface portion and preferably do it in this way.
10 Of course, if desired, the heater could be above or a heater could be located both above and below.

In preheating the roofing by the apparatus shown in the drawing I heat the entire under
15 side of the roofing and this heat passes up through the various materials to the top surface of the roofing, thereby not only heating the portion which has the design lines on it, but also heating the fields, being the portions
20 surrounded by the design lines. This heating of the entire roofing permits of a readjustment of the roofing as it passes under the design roller, the raised portions of the design roller causing the readjustment of the heated
25 coating.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus for ornamenting roofing of the character described, embossing
30 means and means for preheating the roofing arranged ahead of, and adapted to apply heat on the opposite side of the roofing to, said embossing means.
35 2. In an apparatus for ornamenting roofing of the character described, embossing means and a heating coil for preheating the roofing arranged ahead of said embossing means.
40 3. In an apparatus for ornamenting crushed slate surface roofing, heated embossing means and means for preheating the roofing arranged ahead of said embossing means.
45 4. In an apparatus for ornamenting roofing of the character described, embossing means, means for preheating the roofing arranged ahead of said embossing means, and

cooling means for cooling the roofing arranged after said embossing means. 50

5. In an apparatus for ornamenting roofing of the character described, embossing means, means for heating said embossing means and means for preheating the roofing arranged ahead of said embossing means. 55

6. In an apparatus for ornamenting roofing of the character described, a heated design roller, a foundation for supporting the roofing in contact with said design roller and means for preheating the roofing arranged ahead of said design roller. 60

7. In an apparatus for ornamenting roofing of the character described, embossing means, means for preheating the roofing from the under side thereof arranged ahead of said embossing means. 65

8. In an apparatus for ornamenting roofing of the character described, embossing means, means for preheating the roofing from the under side thereof arranged ahead of said embossing means and means for heating said embossing means. 70

9. The method of ornamenting a crushed slate surface prepared roofing which consists in first reheating the material to which the
75 slate adheres, then pressing a heated embossing element against the surface of crushed slate to embed same into the material to which it adheres and completely cover said slate thereby in predetermined areas. 80

10. The method of ornamenting crushed slate surface prepared roofing which consists in first heating the material to which the
85 slate adheres by applying heat to the under side of said roofing, then pressing a heated embossing element against the crushed slate to embed same into the material to which it adheres and completely cover said slate thereby in predetermined areas.

11. In an apparatus for ornamenting roofing of the character described, means for reheating the roofing and embossing means arranged after the reheating means. 90

In testimony whereof, I have signed my name to this specification.

EARL ROSS.