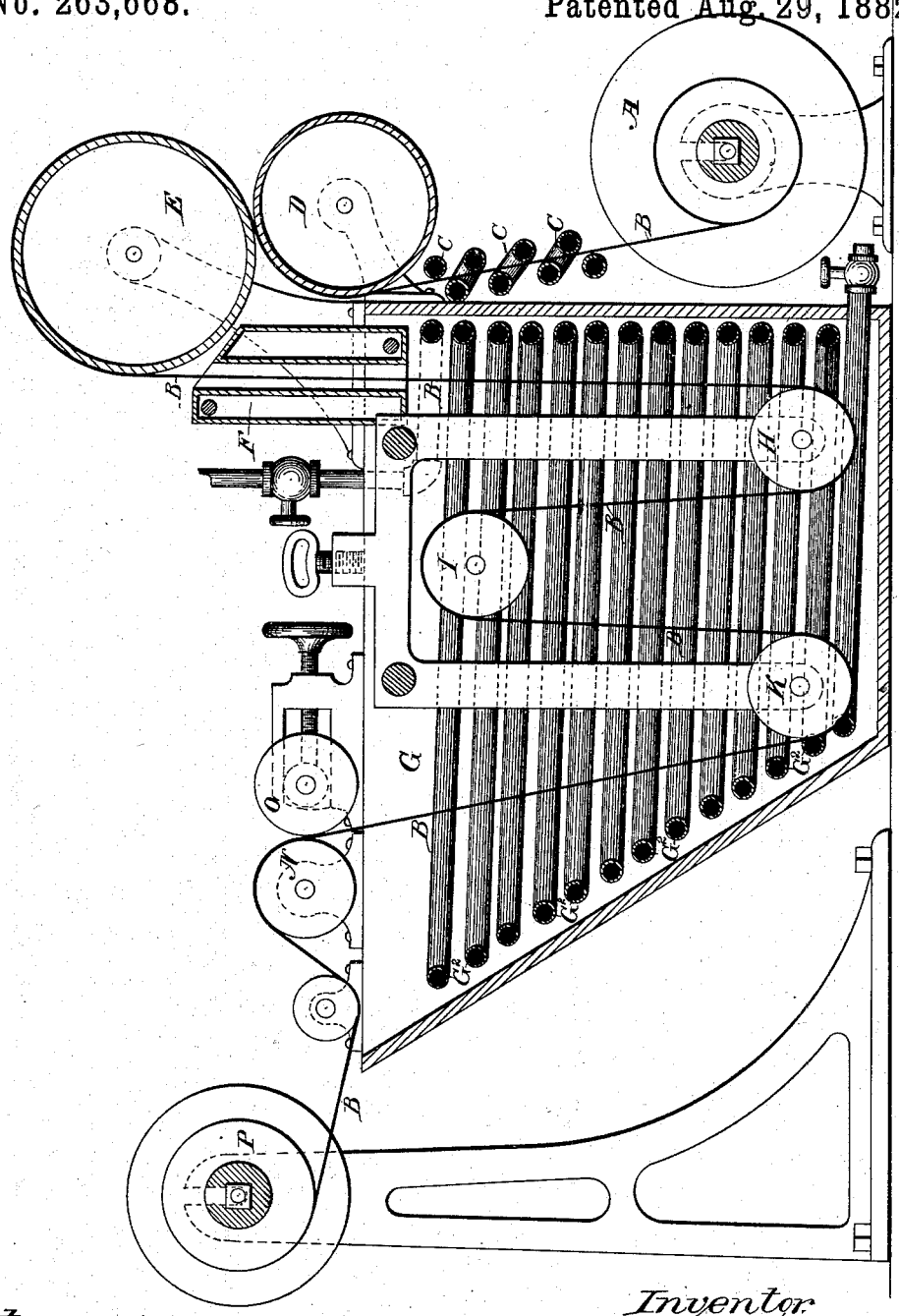
(No Model.)

W. H. STELWAGON.

PROCESS OF AND APPARATUS FOR PREPARING ROOFING FELT AND SHEATHING-PAPER.

No. 263,668. Patented Aug. 29, 1882.



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UNITED STATES PATENT OFFICE.

WILLIAM H. STELWAGON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ROBERT P. STELWAGON, OF SAME PLACE.

PROCESS OF AND APPARATUS FOR PREPARING ROOFING-FELT AND SHEATHING-PAPER.

SPECIFICATION forming part of Letters Patent No. 263,668, dated August 29, 1882.

Application filed March 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STELWAGON, a citizen of the United States, residing in the city of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in the Process of Preparing Roofing-Felt and Sheathing-Paper, and in the apparatus for performing the same; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable others to make and use the said invention.

The object of this invention is to quickly and thoroughly impregnate the paper or felt web with the waterproofing compound, and to avoid the deposit upon its surface of the adhesive covering of such compound in the form of a glazed surface, which, becoming adhesive when warm, causes the felt, when rolled up for storage or transportation purposes, to stick together.

The nature of this invention consists in heating the paper or felt web preliminarily to submerging it in the heated waterproofing compound, in flexure or bending of the web while passing through such heated compound, and thus effectually opening the pores of the felt to the reception of the compound, and afterward removing any such superfluous compound adhering to the surface by means of rollers.

I will now proceed to particularly describe the mode of making this invention, referring, in so doing, to the drawing annexed, which represents the apparatus in vertical section.

A represents a reel upon which the paper or felt to be treated is wound; B, the web of felt passing therefrom; C, a series of heated pipes or bars between which the web B passes; D, a roller over which the web B passes to the under side of the heated cylinder E, around which the web B passes in close contact, and from which it passes through a heated chamber, F. During the passage of the web B from the reel A, between the pipes C, around the rollers D and E, and through the heated chamber F it becomes heated, and while so heated is repeatedly flexed, so that any moisture in the web is evaporated and the web leaves the chamber F and other heating devices, the pores are open, thoroughly dry, and heated.

While all of the heating devices—to wit, the pipes C, the rollers D and E, and the chamber F—are useful for the heating and drying operation, they need not all be employed, any one of them, if made of sufficient dimensions or proportions to the rest of the apparatus, being effective; and I do not wish to be understood as limiting my invention to the combination of all of these devices.

The web B, after passing out of the chamber F, enters a tank, G, containing the waterproofing compound, (any of the known mixtures of tar, resins, or bituminous substances may be employed,) where it passes below the surface of the compound at G′, under the roller H, over the roller I, under the roller K, and upward between pressure-rollers N and O, which compact and press it and press out any undesirable excess of the compound, which is returned to the tank G, and thence passes off a sufficient distance to cool and is wound into rolls upon a reel, P.

The rollers H and K are attached to a frame which may be raised and lowered and held down, when desired, by screws or an equivalent device, by which means the end of a web is readily introduced by simply laying its end under the rollers, after having passed the heating devices, and between the pressing-rollers, and then pressing the rollers H and K downward upon it the web assumes the form shown in the drawing, being flexed over the roller I and also under the rollers H and K, thus repeatedly bending it and admitting the compound into the pores opened by such flexure. The tank G and its contents are heated by steam-pipes G^2, in which steam passes upon the sides.

The repeated flexure of the web B in the tank G opens the pores to the reception of the waterproofing compound, and there being no moisture in them the compound effectually penetrates and impregnates the web and the surface, instead of presenting a glazed appearance, which becomes adhesive when warm, is a dull surface, and not adhesive.

The paper or felt thus treated absorbs more rapidly and retains about fifteen per centum more in weight of the waterproofing compound, and is greatly improved in appearance, convenience of handling, and durability.

I am aware that paper and felts have been heated preliminary to coating the surfaces thereof with wax, paraffine, or varnish, and this therefore I do not claim; but

What I do claim is—

1. The improved process of saturating and impregnating webs of roofing and sheathing felts or paper with waterproofing compounds, consisting in heating and flexing the felts or paper immediately before immersing them in the heated compound, and repeatedly flexing the web by passing the same over rollers submerged in the bath of heated compound, and under removable rollers placed over the web, substantially as and for the purposes set forth.

2. The improved process of impregnating webs of felt or paper with waterproofing compounds by introducing the end of the web into a tank containing heated waterproofing compound, over a stationary roller or rollers located in the upper part of said tank, and by means of a movable roller or series of rollers submerging the web in the heated compound, and thus repeatedly flexing the web during its transit throughout the heated compound, and divesting the web of any surplus compound by pressure-rollers as it emerges from the compound, substantially as and for the purposes set forth.

3. In an apparatus for saturating felt and paper webs with heated waterproofing compounds, the combination of a bath with heating appliances, a heating and flexing device adapted to open the pores to the evaporation of moisture before entering the bath, one or more stationary rollers to support the web near the top of the bath, two or more rollers attached to a movable frame arranged to submerge and flex the web during its transit through the heated compound, and a pair of pressing or wringing rollers arranged above the bath for divesting the web of superfluous compound during its exit from the bath, all arranged to operate substantially as described and shown.

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Witnesses:

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