(No Model.)

G. W. SWAN.

ROOFING MATERIAL.

No. 358,502. Patented Mar. 1, 1887.

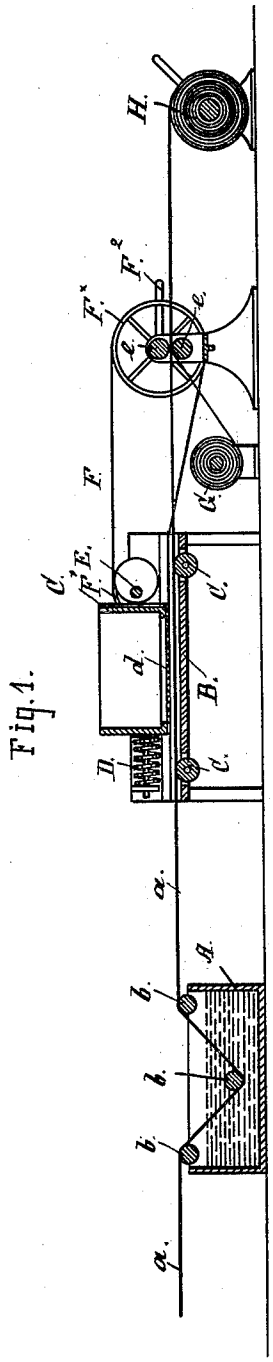


Fig. 1.

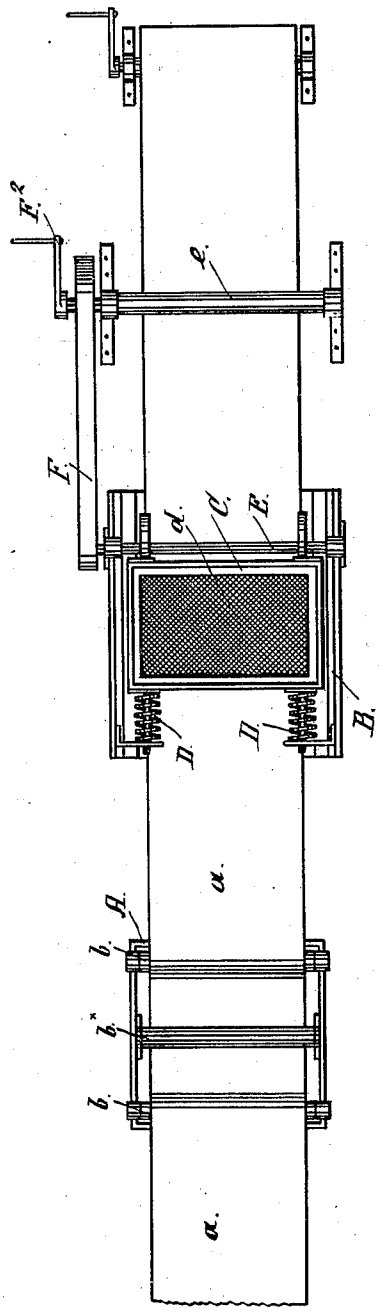


Fig. 2.

Witnesses:

Wm. Mayer

Joseph E. Ed

Inventor:

George W. Swan

By C. Wm. Smith

Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. SWAN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-FOURTH TO JONATHAN H. LYMAN, OF SAME PLACE.

ROOFING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 358,502, dated March 1, 1887.

Application filed August 12, 1886. Serial No. 210,735. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SWAN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Roofing Materials, of which the following is a specification.

This invention relates to that class of roofing materials prepared in sheets or rolls on canvas, textile, felted, or fibrous fabric; and it consists in covering the outer or exposed surface of such material, when so prepared, with a coating composed of a non-conductor of heat, which so hardens or indurates the surface as to render it imporous to the rays of the sun or extremes of heat and cold.

For the purpose of carrying out my invention I have prepared a drawing of the apparatus which I employ, to which reference is had by letters and figures.

Figure 1 is a longitudinal section through my apparatus for preparing and coating my roofing material. Fig. 2 is a plan view of the same.

The material or fabric which I employ for saturation is of the ordinary class, such as burlaps, felt, or duck. As shown at *a*, this is drawn through the kettle or tank A, containing melted asphaltum or a by-product of petroleum suitably tempered and passed over and under the rollers *b b* $b^{\times}$, the latter or roller, $b^{\times}$, being submerged in the liquid product. By this treatment the fabric becomes thoroughly saturated, and from thence is passed over the rollers *c c*, suitably sustained upon the frame B. The frame B also supports a hopper, C, having a meshed bottom or sieve, *d*.

The hopper is filled with a non-combustible substance, such as powdered lime or good ashes suitably sifted. The lime is preferable, however, and this is sifted through the meshes upon the upper surface of the saturated burlaps, as the latter passes along over the roller *c*, in suitable quantity to thoroughly cover it. The fabric is then carried along and passes between the compressing-rollers *e e*, which press the powdered lime into the yielding surface of the fabric before it has become cooled and forms a hardened or indurated surface impervious to the rays of the sun and not easily affected by fire when laid as a roofing. The lime or ashes penetrate the saturated canvas or burlaps to a considerable depth and absorb that part of the material that would otherwise be affected by heat and leave the fabric in a pliable state upon both the lower or laid surface and upper face, not liable to crack or check. In order to sift the lime or ashes in suitable quantity as the web is being carried along, a spiral spring, D, is connected to the front end of the hopper, and a cam-shaft, E, is placed in the rear, which latter is operated by a belt, F, passing over pulleys $F^{\times}$ $F^{\times}$, by the crank F^{2}, which latter also operates the compression-rollers. This cam strikes the side of the hopper, moving it forward, and compresses the spiral spring, and when the cam is released from the hopper the spiral spring reacts and shakes the hopper, sifting the contents upon the roofing beneath. A roll of paper, G, serves as a lining for the lower face of the roofing as it passes between the compression-rollers, and the roofing so prepared is reeled upon the reel H, as shown.

I am aware that heretofore lime has been employed as an ingredient in roofing compounds, mixed with other ingredients before saturation or passing the fabric through it; but when so prepared the roofing, when laid, is affected by every change of temperature from hot to cold, causing the roof soon to become full of cracks and eventually to leak; hence I do not claim a roofing compound composed of lime or ashes when these ingredients are intimately mixed with other materials before saturation with the fiber.

What I claim, and desire to secure by Letters Patent, is—

The herein-described method of preparing roofing material, which consists in first saturating a textile fabric with melted asphaltum or a by-product of petroleum, then covering one side of the saturated fabric with a non-combustible substance, such as powdered lime, and then subjecting the lime-covered surface to pressure, so as to indurate the same, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

GEORGE W. SWAN. [L. S.]

Witnesses:
C. W. M. SMITH,
CHAS. E. KELLY.