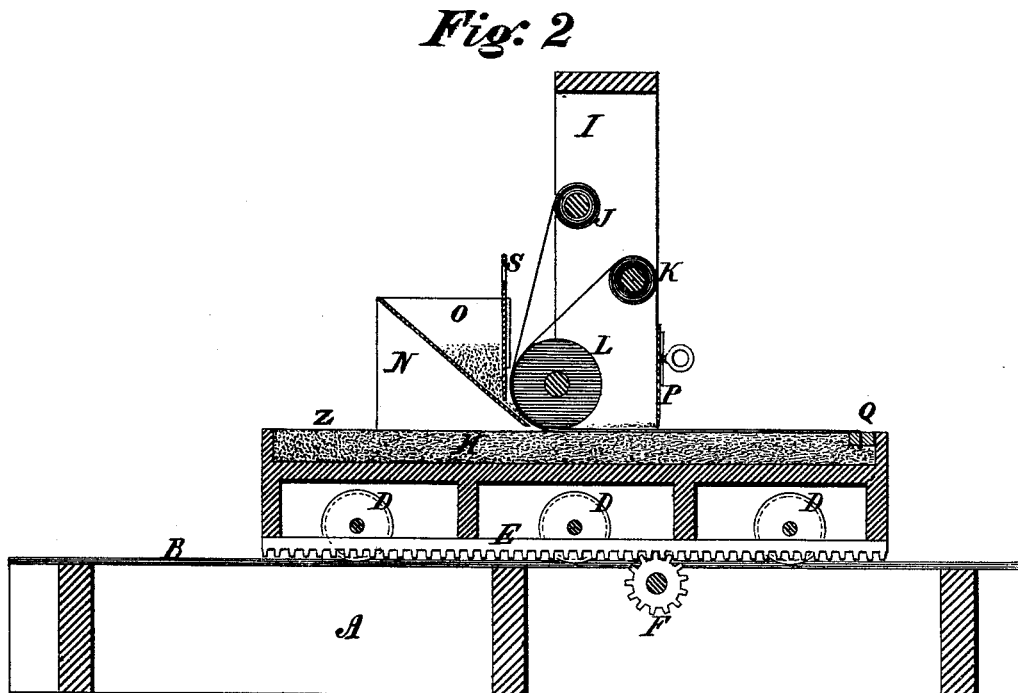
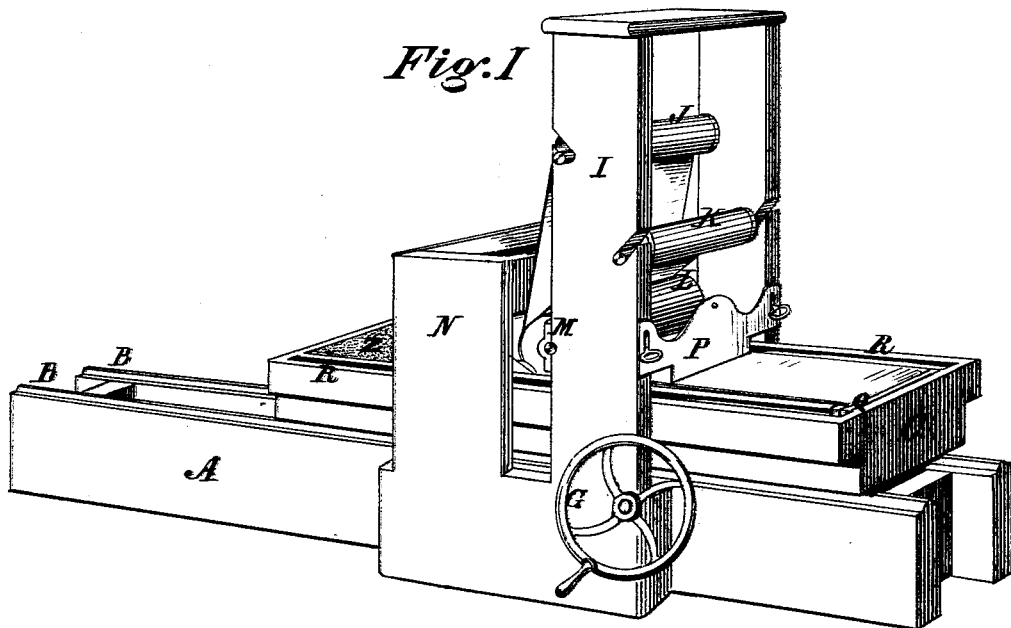


C. L. FOWLER.

MACHINE FOR MAKING COMPOSITION ROOFING.

No. 180,996.

Patented Aug. 15, 1876.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

CHARLES L. FOWLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO EDWARD H. TWINING, OF SAME PLACE.

## IMPROVEMENT IN MACHINES FOR MAKING COMPOSITION ROOFING.

Specification forming part of Letters Patent No. **180,996**, dated August 15, 1876; application filed July 15, 1876.

*To all whom it may concern:*

Be it known that I, CHARLES L. FOWLER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Apparatus for the Manufacture of Composition-Roofing, of which I hereby declare the following to be a full, clear, and precise description, and sufficient to enable others skilled in the art to which it appertains to comprehend and construct my said improvement, reference being had to the accompanying drawings, forming part of this specification, of which—

Figure 1 is a perspective of my apparatus, and Fig. 2 a central longitudinal sectional elevation of the same.

Similar letters of reference indicate corresponding parts in both the figures.

My invention relates to that class of machines which coat, spread, cover, or impregnate any suitable fabric with fire or waterproofing compositions; and has for its object a machine of such class so constructed as to coat the fabric from the under surface, and to thoroughly dry it ready for removal by the time the coating is effected in any given length of material; to which ends it consists in the apparatus hereinafter described and claimed.

With reference to the drawing, the following is a description of the mechanical construction of a convenient form of machine embodying my invention.

A is the bed, a longitudinal frame-work constructed of wood or metal, of any desired dimension, and supporting lengthwise rails B. C is a reciprocating sand-trough, of about half the length of the bed, traveling longitudinally, by means of wheels D, upon the bed-rails B. A rack, E, upon the sand-trough, engaging a pinion, F, operated by a hand-wheel, G, upon the bed, or any other device operated by any motive power, serves to impart a reciprocating motion to the sand-trough longitudinally, to the extent of the bed. The sand-trough C is provided throughout its central top portion, to within about a couple of inches of its full width, and to its full length, with a trough proper, H, of about three inches depth, which is packed nearly full of wet sand Z, the same being compacted to form a solid surface, while

upon both sides it is provided with gutters R to receive any overflow of sand. I is an upright scaffolding, spanning the bed, and supporting horizontal spools J K at any convenient elevation above the trough, and a large compressing weight-roller, L, which plays in vertical slot-bearings *m*, and bears down upon the trough. It is controlled by levers or other fit devices. N is a frame-work supporting a hopper, O, opening across the sand-trough, and controlled in its discharge of material by a transverse valve, S. In the hopper is placed a roofing compound for which I have applied for Letters Patent of the United States.

P is an adjustable scraper, transversely and obliquely set against the scaffold I, of the exact width of the trough H, and so arranged that it can be lowered into the trough to any desired degree. Q is a clutch of any description, of the width of the sand-trough, and employed to retain the fabric in the operation of the machine.

Such being its construction the operation of my apparatus is as follows: The trough H being filled with compacted wet sand, and being thrown to the right to its full extent in that direction, the scraper P is lowered to within, say, one-eighth of an inch of the wet surface of the sand, and to its right, or in front of it, poured and heaped up ordinary dry sand. The sand-trough is then reciprocated to the full extent of its throw to the left, by which action, and the necessary operation of a fixed scraper, a thin layer of dry sand, one-eighth of an inch deep, is spread completely and evenly over the entire surface of wet sand, all surplus being swept into the gutters by an angling of the scraper. About the spool K is wound a roll of cloth, or other fabric, the free extremity of which is carried beneath the compressing-roll L, and secured within the clutch Q. About the spool J is wound a roll of ordinary roofing-paper, or other equivalent material, the end of which is likewise passed under the roll and secured to the clutch. The hopper is then filled with the hot composition before mentioned, and its valve sufficiently elevated to permit of the flowing out of the required amount of the same. The sand-trough, being now at the extreme left, is reciprocated

slowly to the right, whereby, it will be readily comprehended, the paper and fabric are unwound from their spools and carried along beneath the compressing-roller, which forces them down into the layer of composition fed from the hopper upon the dry sand, and thereby coats and impregnates them from below upward most effectually with the composition and sand, completing the action.

The bed of wet sand serves to cool the material thoroughly by the time the throw of the trough is completed, so that the length of material can be severed and removed from the trough in a condition for use. When the trough has completed its movement to the right, the entire process is to be repeated.

It is obvious that in this apparatus the compacting action of the roller will be very thorough, firmly uniting the entire mass.

The scraper can be so set as to remove any depth of wet sand from the top surface of the compacted mass of the same, so that any desired space can be left between the roller and the said bed-surface for the entrance of any thickness of fabrics, the admission of any depth of dry sand and any height of composition liquid, thus very readily and invariably regulating the thickness of roofing material produced. But one roll of fabric or paper may be employed, or there may be more than two.

It is also obvious that the paper and cloth first come into contact directly upon the under surface of the roller, which, at one and the same time, presses them together and into the composition, which is fed upon the loose

dry sand directly in advance of the roller, so that the composition is driven into the fabrics, so to speak, and into the sand, taking up the latter into its body and permeating the bodies of the former.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a sand-trough, containing a compacted surface-layer of wet sand, which forms a spreading and drying bed, and adapted to be longitudinally reciprocated beneath a transverse hopper, of a compacting weight-roller, adjusted to bear down upon and press one or more layers of cloth and paper, which, unwinding from spools, pass beneath it, as specified, at the same time together and into a heated liquid composition, and a layer of dry sand, the composition flowing from the hopper upon the layer of dry sand in immediate advance of the roller, and the dry sand being previously spread by a scraper upon the wet-sand bed, the whole forming an apparatus for automatically, and from the under surface, spreading, coating, compacting, and drying composition-roofing, substantially as described.

2. In combination with a reciprocating sand-trough, an adjustable scraper, substantially for the purpose specified.

In testimony whereof I have hereunto signed my name.

CHARLES L. FOWLER.

Witnesses:

J. BONSALE TAYLOR,  
E. H. TWINING.