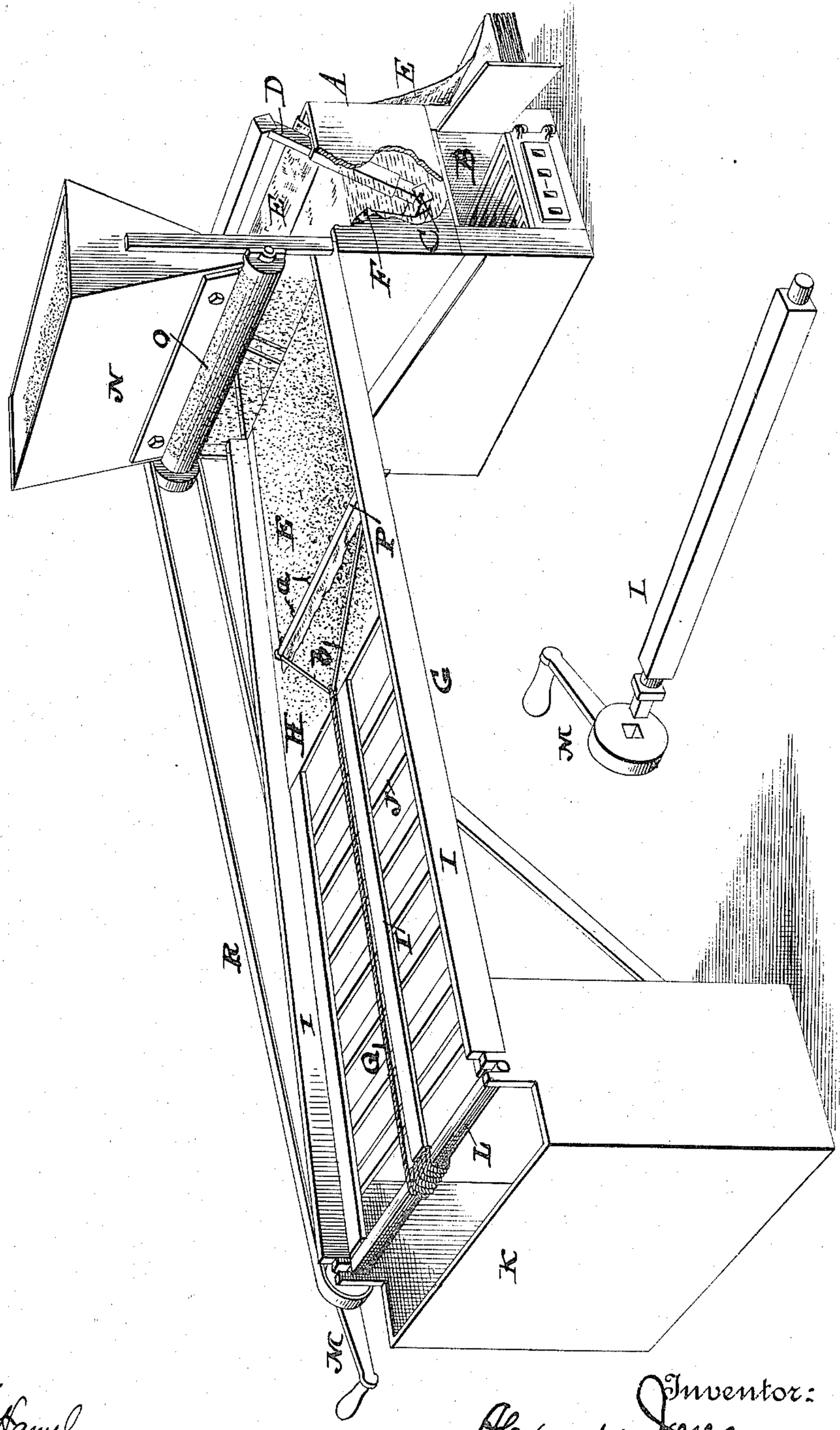
(No Model.)

A. JONES.

ROOFING FABRIC.

No. 385,057. Patented June 26, 1888.



Witnesses.
James F. DuHamel
Walter J. Dodge.

Inventor:
Alexander Jones,
By his Attorneys,
Dodges & Sons.

UNITED STATES PATENT OFFICE.

ALEXANDER JONES, OF RACINE, WISCONSIN.

ROOFING FABRIC.

SPECIFICATION forming part of Letters Patent No. 385,057, dated June 26, 1888.

Application filed July 28, 1887. Serial No. 245,550. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER JONES, of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Roofing Fabrics, of which the following is a specification.

My invention has reference to an improved roofing material; and it consists in a novel construction of the same, as hereinafter set forth and claimed.

In the drawings I have shown a perspective view of the apparatus by means of which the roofing material is made; but although I have described the said apparatus in detail herein I reserve to myself the right to make it the subject-matter of a separate application.

I will first describe the apparatus employed and then the materials and their mode of application by means of said apparatus.

A indicates a tank or vat, of iron or other suitable material, beneath which is a fire-space, B, preferably provided with a grate upon which to place fuel. This tank is designed to contain a mixture or preparation with which to saturate cotton goods or other fabric, of which the roofing material in part consists. Near the bottom of the tank or vat is a bar, C, which may conveniently be carried by a frame, D, running in guides in the ends of the tank or vat, said bar serving to press down and hold beneath the surface of the contents of chamber the web or sheet E of fabric to be treated.

F indicates a bar parallel with the bar C, located at or near the top of the tank or vat A and directly over the same, said bar serving as a scraper to remove the surplus material or composition carried up by the web or fabric from the tank or vat.

G indicates a frame-work extending from the rear side of the tank backward a considerable distance. The portion of the frame-work next to and immediately in rear of the tank or vat is furnished with a close table or platform, H, upon which is placed a body of sand or equivalent material, and the remaining portion of the frame-work is formed with longitudinal central and side bars, I, and cross-bars J, the latter separated from each other, so as to permit the air to pass freely between them. At the rear end of the frame-work G there is placed a box or receptacle, K, and above and removably mounted in suitable bearings or supports is a shaft or arbor, L, provided with a handle or wrench by which to turn it.

N indicates a hopper or box to contain sand or like material, and provided at its bottom with a feed-roller, O, or equivalent means for causing a uniform discharge of material from the hopper upon the web or fabric passing beneath it.

P indicates a bar provided with hooks *a*, upon which to hook the fabric, and Q indicates a rope or band extending from a bridle, *b*, attached to the ends of the bar P to the shaft or arbor L. This bar P and rope or band Q are employed only in beginning the treatment of a bolt or roll of fabric, and are for the purpose of drawing the end of the fabric from the tank or vat A to the arbor or shaft L. When this is accomplished, the first shaft L is removed and a new one substituted. The fabric is unhooked from the bar P and wrapped about the shaft or arbor L, and by turning the latter the material is drawn forward and wound into a compact roll as fast as treated.

Motion may be given to the arbor L and feed-roll O from any convenient source of power, or the shaft L may be turned by hand and the roll O driven by a belt, R, passing about a pulley on said roll, and a second pulley on the shaft or arbor L, the latter being conveniently formed with or attached to the wrench M, so that it may be removed from one arbor and placed on another.

Having now described my apparatus, and with the remark that it may be considerably modified as to its general structure, the precise form of tank and heater, sanding devices, &c., being susceptible of variation, I will proceed to describe the proportions or compounds employed and the mode of applying them with the aid of the apparatus above set forth.

I first place within the tank or vat A the following substances or materials in the proportions and usually in the quantities stated: One hundred pounds of rosin, ten pounds of gum-shellac, five pounds of litharge, twenty pounds of rosin-oil, ten pounds of linseed-oil, and ten pounds of asphaltum. I then start a fire in the space B within the tank or vat and

produce heat sufficient to melt these substances together, stirring and mixing the same to insure a perfect union thereof, and I maintain a fire beneath the tank or vat while treating the fabric to insure a proper fluidity of the composition and a thorough saturation of the fabric. I also place upon the bed or table H and in the hopper N a supply of sand free from sticks, pebbles, or foreign matter of any kind, that upon the bed or platform H being advisably rounded up in the middle, so as to insure a stretching of the fabric over it from edge to edge and a certainty of contact of every portion of the lower face of the fabric with sand. Having made these preparations, I provide a bolt or roll of woven fabric, preferably stout cotton goods, and I carry one end thereof over the edge of the outer side of tank or vat A, holding the goods firmly at its sides and pressing it down into the composition or preparation in the tank or vat by means of the cross-bar C and its frame D, which should be of sufficient weight to hold the fabric beneath the surface of the solution, but which should not be sent quite to the bottom of the tank or vat, as in that case there would be danger of scorching the fabric or of impeding its travel through the vat. By this manner of starting the material through the vat a portion of about six or eight inches is left uncoated, thus enabling the attendants to draw the fabric forward over the bar F and upon the bed or table H without soiling the hands, as would otherwise inevitably occur The uncoated portion, being carried upward over the bar F and to the upper side of the bed or platform H, is hooked upon the hooks or teeth *a* of the bar P, and the rope or band L attached to said bar is then wound upon the arbor or shaft L′ by turning the wrench M, thereby drawing forward the bar F, and with it the fabric E, which, in thus moving forward, travels over the bar F and has the surplus coating removed from it and thrown back into the tank or vat. The saturated fabric passing over the body of sand on the table H becomes thoroughly and evenly coated with the sand, which adheres tenaciously to the fabric, owing to the stickiness of the composition, while at the same time the upper surface is similarly coated with sand by reason of a discharge of a constant and uniform stream through the outer end under the action of the roller O, driven by the band R from the pulley *c* of arbor L. As the fabric passes from the sand-covered table or platform H, it enters upon the open rear portion of the frame G and is exposed to the air above and below, the band or rope L being supported by the central bar, I, and the bar P being supported by the same and the side bars, as will be readily seen. When the bar P reaches the arbor L, the fabric is unhooked from said bar, a second arbor is substituted for the first, the uncoated end of the material is wrapped upon the fresh arbor, and the winding begins. Any surplus sand lying upon the upper face of the fabric falls into the box K as the fabric winds upon the arbor, and the sand is thereby saved for further use. The uncoated portion first wound upon the arbor prevents adhesion of the prepared fabric thereto, and leaving the arbor in condition for immediate reuse when the material is taken therefrom. The frame is of such length that the quick drying composition applied to it becomes sufficiently dry to prevent, with the aid of sand applied to its faces, any adhesion of the coils upon the shaft L one to another. The fabric being thus prepared is ready for immediate application to the roof; but previous to placing the same upon the roof I prefer to cover the roof with a layer of tarred felt, tacking the prepared fabric upon the same with considerably-lapped joints, the two uniting one with the other in a short time by reason of the cementing action of the coating of the felt and of the roof. After the fabric has been applied to the roof it is treated with a preparation consisting of one hundred pounds of Cleveland iron-clad paint or other heavy mineral paint, seventy pounds of linseed-oil, five pounds of litharge, ten pounds of gum-shellac, and ten pounds of American zinc, this preparation being carefully mixed and applied as a paint or coating with a brush, and the surface while still fresh being carefully coated with a layer of sand to render the same fire-proof, or practically so.

The ingredients and proportions above stated are those which I have after long experimenting determined upon as best; but I do not wish to be understood as restricting myself to the precise ingredients or proportions stated, as they may be modified considerably without departing from the spirit and scope of my invention. Thus, with regard to the solution as applied to the fabric in the tank or vat A, I may employ instead of the one hundred pounds of rosin above mentioned a like quantity of asphaltum, omitting the ten pounds of asphaltum mentioned, or, in other words, using only one hundred pounds in all. So, too, the litharge may in some cases be omitted, and a mineral oil known to the trade as "mineral linseed-oil" may be substituted for the rosin-oil, or for the rosin-oil and linseed-oil. The final coating or preparation may also be modified by employing, instead of one hundred pounds of iron-clad paint, fifty pounds of such paint and fifty pounds of whiting. The linseed-oil may be omitted, and the so-called mineral linseed-oil or cotton-seed oil may be substituted. The litharge may be omitted and the quantity of zinc may be doubled, in which case the shellac may be omitted.

Pulverized brick or stone may be employed in lieu of sand, though sand is preferred as being cheaper and more easily applied. As above stated, however, I prefer the ingredients and the proportions first given.

Any other means of heating may be employed—as, for instance, a coil or coils of

steam-pipe may be placed in the vat A, or any equivalent well-known means may be employed for heating the material in the vat or tank.

Having thus described my invention, what I claim is—

1. The herein-described roof-covering, consisting of a layer of felt, a layer of cotton fabric saturated with a mixture of rosin, shellac, litharge, rosin-oil, linseed-oil, and asphaltum, coated on both faces with sand, and a top dressing of mineral paint, linseed-oil, litharge, shellac, and zinc, or the described equivalents of these materials, in substantially the proportions above set forth.

2. The herein described roofing material, consisting of woven fabric saturated with a mixture of rosin, shellac, litharge, rosin-oil, linseed-oil, and asphaltum, or their described equivalents, in substantially the proportions stated, and coated on both faces with sand or its equivalent.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ALEXANDER JONES.

Witnesses:
THOMAS W. SPENCE,
W. H. LEWIS.