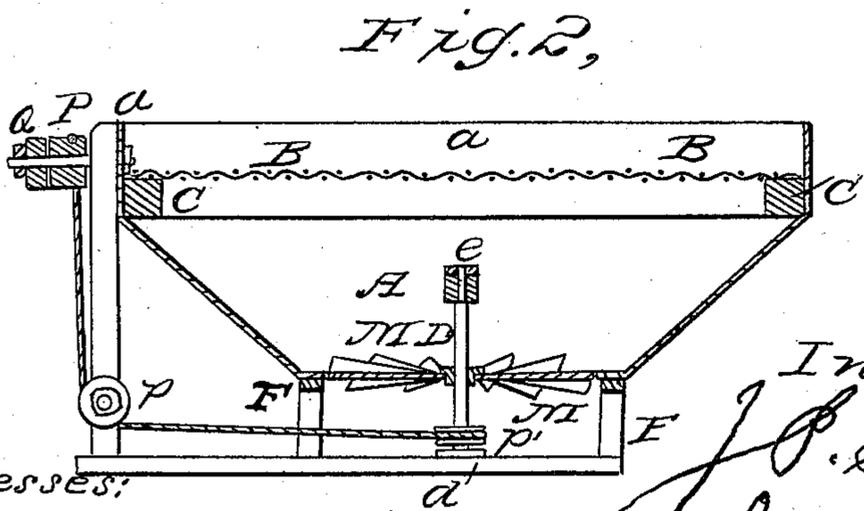
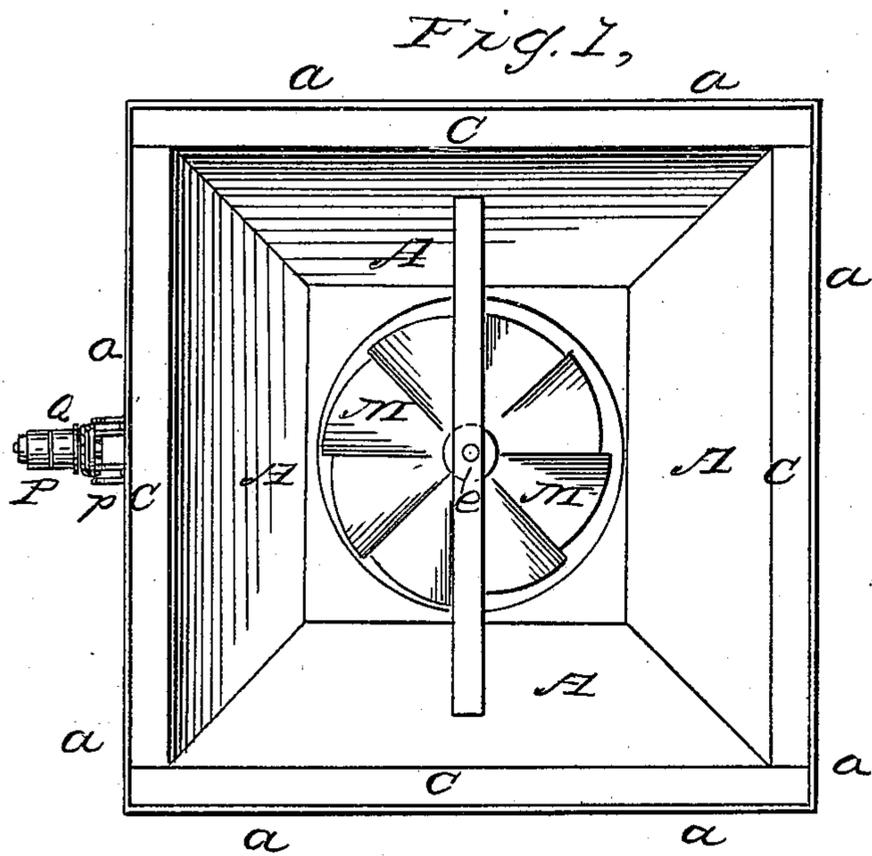


J. P. STILLMAN.

Wool Drier.

No. 43,530.

Patented July 12, 1864.



Witnesses:

L. Downes

W. L. Coombs

Inventor:

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UNITED STATES PATENT OFFICE.

JONATHAN P. STILLMAN, OF WESTERLY, RHODE ISLAND, ASSIGNOR TO
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IMPROVEMENT IN MACHINES FOR DRYING WOOL.

Specification forming part of Letters Patent No. 43,530, dated July 12, 1864.

To all whom it may concern:

Be it known that I, JONATHAN P. STILLMAN, of Westerly, in the county of Washington and State of Rhode Island, have invented certain new and useful Improvements in Machines or Apparatus for Drying Wool; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved machine, and Fig. 2 a sectional elevation of the same.

My invention relates to wool-drying machines in which the wool to be used is exposed on a bed made of wire-gauze or perforated sheet metal to a current of air (whether cold or heated) forced or drawn through it. This has heretofore been effected in machines having an elongated perforated bed and a fan at one or both ends of the air-chamber over which the material to be dried is spread. Instead of a fan placed at one or both ends of the air-chamber, an elongated fan, extending throughout the whole length of the air-chamber, has also been used with comparatively good results. These and other contrivances used for drying wool and other fibrous matter are necessarily voluminous—require, therefore, much valuable space in woolen factories; besides this, a machine under the arrangement first referred to is costly to operate, on account of the great speed necessary to be given to the fan to attain the requisite amount of blast. The arrangement last referred to, although an improvement in this respect, is still open to the objection of being voluminous and consuming too much power for the amount of blast necessary.

The object of this invention is to obviate these and other objections attending the use of old wool-drying machinery; and my invention consists, first, in the construction of a wool-drier, the wool holding box of which is square or of other form substantially the same, the perforated bed being of an area whose length and breadth are of equal dimensions, in combination with the air-chamber, the sides of which are tapering at equal inclinations from the borders of the box toward the center, substantially as hereinafter set forth; second, in the employment in combina-

tion with the perforated bed of wool-driers of a fan, the axis of revolution of which is at right angles to the bed, substantially as hereinafter set forth; third, in the combination, with a central fan situated in a horizontal plane, of a bed of a square or equivalently the same area, arranged in a plane parallel to the fan, so that the blast may be diffused equally, or nearly so, over the whole surface of the bed, substantially as hereinafter set forth; fourth, in the combination of square bed, or bed substantially the same, with air-chamber, the sides of which converge from the said bed toward a fan-case, and central fan revolving upon a vertical spindle, the whole being arranged for operation in the manner and for the purposes hereinafter described.

To enable others to make and use my said invention, I will now proceed to describe the manner in which the same is or may be carried into effect.

In the accompanying drawings, A is the case, made of metal or other suitable material, the upper part, *a*, of which constitutes the border of the bed upon which the wool to be dried is spread, and the lower part of the air-chamber. The bed B is composed of wire-gauze or perforated sheet metal stretched or fastened by any suitable device to a frame, *c*, snugly set into the case A and resting upon its contracted sides. The bed, and consequently the frame and the incasing-borders of the case A, form a perfect square—that is to say, an area whose length and width are of equal dimensions. The sides of the case A, below the frame C, are inclined toward a common center line, and thus form an inverted truncated pyramid. The bottom of the case is formed by a plate, D, provided with a circular orifice, in the center of which is a spindle held in fixed bearings at *d* and *e*. Upon this spindle is mounted a fan, M, the diameter of which is that or nearly that of the orifice. The fan, which is composed of straight or helical wings inclined in relation to the bottom plate, is revolved by means of a band passing from a driving-pulley, P, over an intermediate pulley, *p*, to a pulley, *p'*, fast on the spindle. There is also a loose pulley, Q, so that by shifting the band from pulley P to pulley Q the operation of the fan may be stopped without stopping the prime mover.

The whole apparatus is established on a suitable frame, F.

The operation of this machine is in principle the same as of those before referred to. The advantages due to the peculiar combination of parts consist mainly in convenience in attending the machine and economy of power. The locating of the fan directly under the bed, in a plane parallel therewith, impels a greater amount of air through the mass to be dried than this could be done in any other way; moreover, the central position of the fan with respect to the bed causes the blast to be equally diffused throughout the whole chamber and over the whole surface of the bed.

It is obvious that the arrangement described is susceptible of some modifications without departure from my invention. Thus, a circular bed surrounding a conical chamber may be used, and the manner of transmitting the power or movement may be modified according to circumstances.

Having thus described my invention, I claim—

1. The construction of a wool-drier, the wool-holding box of which is square or of other form substantially the same, the perforated bed being of an area whose length and breadth are of equal dimensions, in com-

bination with a fan, and the air-chamber, the sides of which are tapering at equal inclinations from the borders of the box toward the center, substantially as herein set forth.

2. The employment, in combination with the perforated bed of wool-driers, of a fan the axis of revolution of which is at right angles to the bed, substantially as set forth.

3. The combination with a central fan situate in a horizontal plane, of a bed of a square or equivalently the same area, arranged in a plane parallel to the fan, so that the blast may be diffused equally, or nearly so, over the whole surface of the bed, substantially as set forth.

4. The combination of square bed, or bed substantially the same, with an air-chamber, the sides of which converge from the said bed toward a fan-case and central fan revolving upon a vertical spindle, the whole being arranged for operation in the manner and for the purposes described.

In testimony whereof I have signed my name to this specification before to subscribing witnesses.

JONATHAN P. STILLMAN.

Witnesses:

A. ENGELHARD,
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