

UNITED STATES PATENT OFFICE.

JOHN H. LORIMER, OF PHILADELPHIA, PENNSYLVANIA.

WOOL-DRIER.

SPECIFICATION forming part of Letters Patent No. 347,360, dated August 17, 1886.

Application filed February 6, 1885. Serial No. 155,091. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. LORIMER, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Drying-Machines, of which the following is a specification.

My invention has reference to drying-machines for drying cotton and wool in the lap or skeins; and it consists of two or more large cylinders perforated on their peripheries, and through which hot or dry air is forced, and about which cylinders the cotton or yarns are caused to pass, being pressed in contact with the surface of said cylinders by suitable bands or aprons; further, in combination of the said cylinders and the guiding bands or aprons, the same being so arranged that the cotton or yarns have one surface brought in contact with one cylinder and the opposite surface brought in contact with or next to the other cylinder, so that in passing around the said cylinders it is thoroughly dried, and in many details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The object of this invention is to provide means by which wool or cotton, either in the raw or prepared state, may be treated and thoroughly dried after passing from the scouring or dyeing machine, and in a manner by which the capacity of a drying-machine is greatly increased. By the method hereinafter described the cotton or wool is put under a forced drying operation, as the drying agent is forced through the body of the said cotton or wool, carrying off the vapors or moisture contained in the said wool or cotton. While hot air is preferable as the drying agent, it is possible even to produce the same result in a certain degree by forcing cold air through the said cotton or wool, as it will carry off the vapor in somewhat the same manner as above described; but I prefer to use the dried air.

In the drawings, Figure 1 is a sectional elevation of a drying-machine for wool or cotton or yarns embodying my improvements. Fig. 2 is a cross-section of same on line *x x*, with the bands removed; and Fig. 3 is a diagram of the modified arrangement of feeding and conveying bands.

A is the frame of the machine.

B B' are two large drying-cylinders formed with solid heads C, and perforated peripheries having coverings E, which may be formed by wire or stamped sheet metal, and this cylinder is supported upon an axle, D, made hollow, having apertures *d*, through which the hot or dry air may pass to the interior of the drying-cylinders, and from thence through the perforations of the periphery or inclosing-surface of the same.

F is a hot-air supply-pipe, which connects with the hollow axles D through the agency of a stuffing-box, *f*; and dry-air supply to said cylinders is regulated by valves G.

L represents the end of a scouring or dyeing machine, and the cotton, wool, or yarn fed therefrom is received between the aprons or bands H and I, which are guided over rollers J, in the manner shown, the said bands passing around the cylinders B B' in the same direction, so that the band or apron I is next to the cylinder B, and the band H brought next to the cylinder B', the object of which is to present the cotton or wool or yarns on one surface or face adjacent to one cylinder, and the other surface adjacent to the other cylinder when the said cotton or wool is carried about said cylinder for the purpose of being dried. The cotton or wool or yarns, after being passed about the cylinders B B' in the manner described, is discharged at K in a thoroughly dried condition.

In place of the arrangement of bands or aprons shown in Fig. 1, that shown in Fig. 3 may be used, in which case the apron H works in contact with the cylinder B alone and the apron I with cylinder B'. In this case the cotton or wool may pass around the cylinders B B' in direct contact therewith, the particular arrangement of the said feeding aprons or bands being immaterial to my invention, provided that they carry the cotton or wool in contact with said cylinders and cause it to be reversed in passing about the said cylinders, as hereinbefore specified. It is desirable that these aprons or bands be made of open network, or they may be made of slats coupled together, the object being to allow the hot air or gas a free passage-way from the interior of the drying-cylinders through the cotton or wool and the conveying-aprons.

While I prefer the construction shown, I do

not limit myself thereto, as the details thereof may be modified in various ways without departing from my invention.

I am aware that it is not new to use double aprons or conveyers in connection with hollow perforated cylinders; also, that it is not new to dry substances between double aprons carried over heated drums, and these features I do not claim, broadly, but only when so combined that the material to be dried is held and conveyed by the two endless aprons about two drying-cylinders having perforated peripheries, and in which both sides of the material to be dried are caused to pass next to the drying-cylinders, which enables me to expose both sides to the direct current of dry air or gas and produce results that cannot be produced by any machines patented, described, or put into use, to my knowledge.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a drying-machine for wool and cotton, two or more large hollow cylinders having perforated peripheries, through which a drying medium is forced, in combination with two endless feed or conveying aprons of open or net work, or having passages through them, and passing around said cylinders in opposite directions, one of which bands is adjacent to one cylinder and the other of which is adjacent to the other cylinder, for the purpose of presenting each side of the cotton or wool to the said cylinders in succession, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JOHN H. LORIMER.

Witnesses:

R. M. HUNTER,

FRANCIS S. BROWN.