

**No. 629,270.**

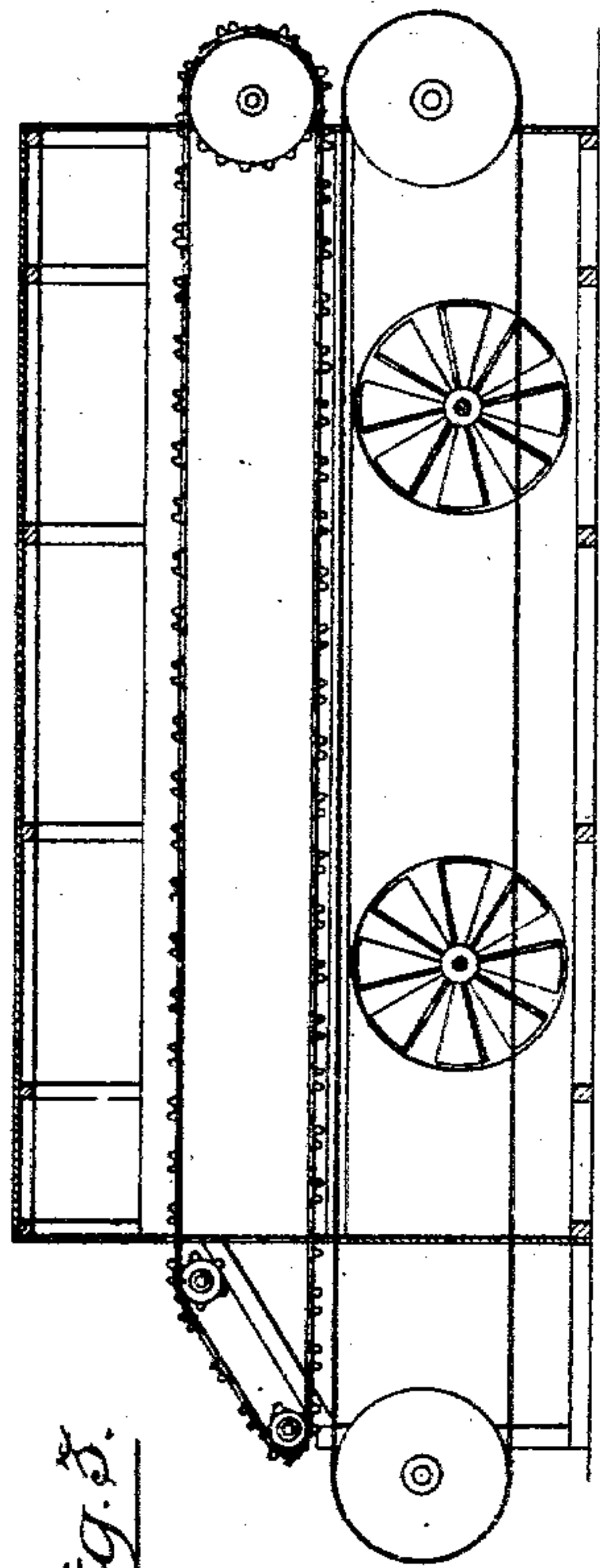
**Patented July 18, 1899.**

**J. K. PROCTOR.**  
**MACHINE FOR DRYING YARN.**

(Application filed Apr. 5, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Inventor  
 Josiah K. Proctor  
 - by -  
 His Attorney  
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Witnesses:-

Frank L. H. Graham.  
 Louis M. F. Whitehead.

Inventor:  
Josiah K Proctor:  
- by -  
His Attorneys

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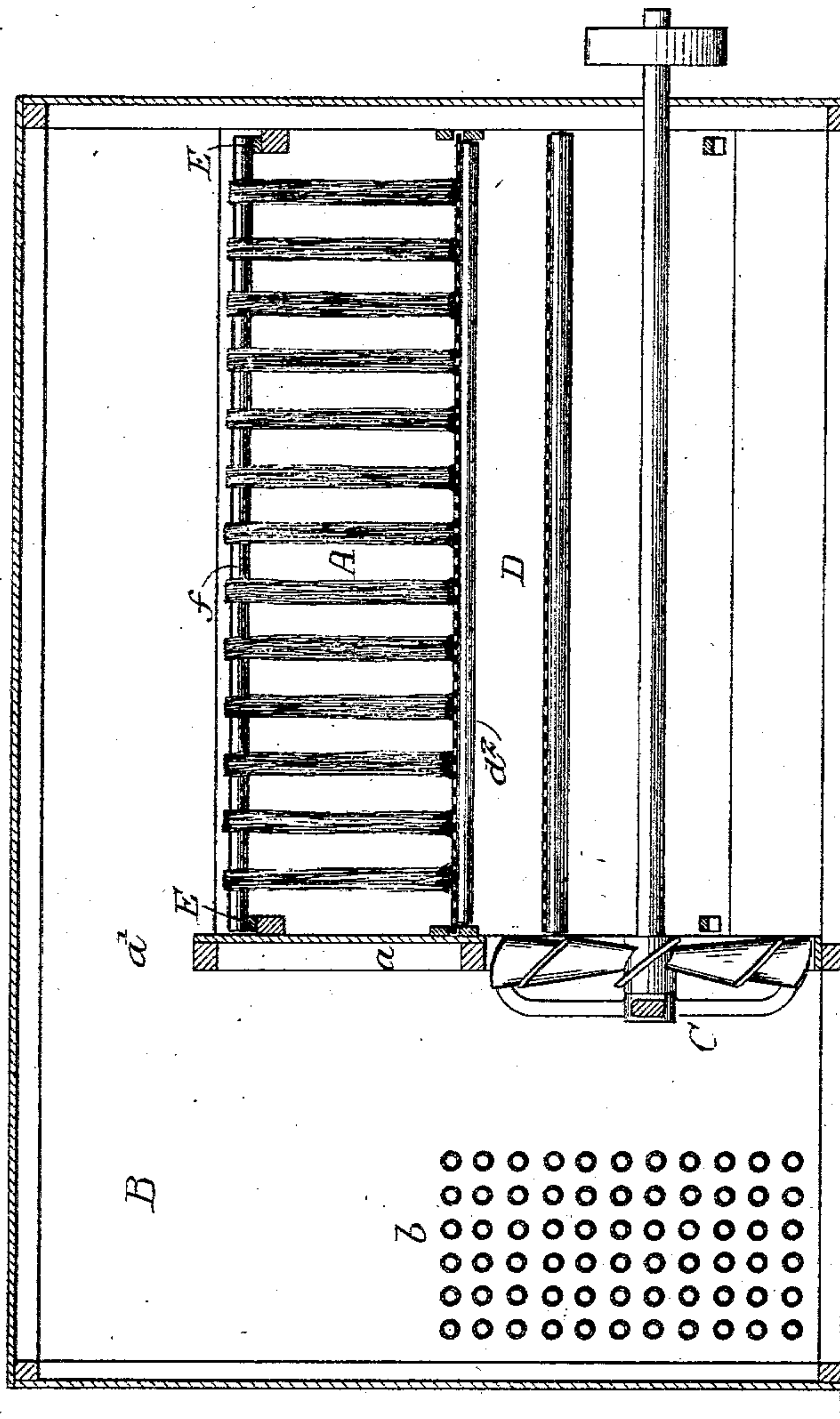
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2 Sheets—Sheet 2.

*Fig. 2.*



Witnesses:-

*Frank L. A. Graham*

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Inventor:-

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by his Attorneys:-

*Hawx and Mason*



# UNITED STATES PATENT OFFICE.

JOSIAH K. PROCTOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE  
PHILADELPHIA TEXTILE MACHINERY COMPANY, OF SAME PLACE.

## MACHINE FOR DRYING YARN.

SPECIFICATION forming part of Letters Patent No. 629,270, dated July 18, 1899.

Application filed April 5, 1899. Serial No. 711,835. (No model.)

*To all whom it may concern:*

Be it known that I, JOSIAH K. PROCTOR, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Machines for Drying Yarn and other Materials, of which the following is a specification.

The main object of my invention is to so construct a drying-machine that it can be used  
10 for drying yarns or threads either in hanks or skeins suspended from bars or placed loose on a conveyer-belt, and a further object of my invention is to prevent the twisting of fine yarn, such as silk or hemp, during the drying  
15 process.

While my invention is especially designed for drying yarns, it can be used for drying any material capable of being suspended or placed loose upon a belt.

20 In the accompanying drawings, Figure 1 is a longitudinal sectional view through a drying-machine made in accordance with my invention. Fig. 2 is a transverse sectional view on the line 2 2, Fig. 1. Fig. 3 is a view of a  
25 modification.

A is the drying-compartment, which may be of any width desired. Preferably at one side of this compartment is a circulating-chamber B, in which are contained pipes or  
30 other heating appliance *b*. In the partition *a*, between the two compartments A and B, are circulating-fans C, and above the partition *a* is a passage *a'*, so that the heated air will circulate through the two compartments and  
35 through the yarn traveling in the compartment A.

D is a perforated endless belt made of any suitable material and supported at each end by belt-wheels *d*, adapted to axles *d'*, one of  
40 which may be driven at any speed desired. The belt is supported at intervals by rollers *d''*, and I preferably run the belt in suitable guides at each side of the machine, as shown in Fig. 2. This belt is situated between the  
45 opening *a'* at the top of the partition *a* and the fans C at the bottom, so that circulation is insured through the belt and the material carried thereby.

50 E is a second conveyer, mounted, preferably, as shown in the drawings, the carrying-run of this conveyer being at a given distance

above the carrying-run of the belt D. This conveyer consists in the present instance of two chains having sockets *e* for the yarn-sticks *f*, and these chains pass around sprocket-  
55 wheels *e'*, as shown in Fig. 1. It will be noticed that at the feed end of the machine the upward run of the conveyer E is inclined, so that the sticks with the yarn thereon can be readily placed in the sockets *e* of the conveyer  
60 E. Thus it will be seen that there are two independent conveyers D and E, which pass through the drying-chamber A of the machine.

When it is wished to dry fine yarns or other  
65 material that is liable to twist in drying, I mount the yarn on suitable sticks *f*, and the distance between the traveling runs of the two conveyers is such that the lower ends of the hanks or skeins of yarn will rest upon the  
70 perforated conveying-belt D, and I so speed the two belts that their conveying-surfaces will travel, preferably, at the same speed, although in some instances the belt D may travel at a speed slightly less than the con-  
75 veyer E. Thus by supporting the hanks or skeins of yarn by the belt D, I prevent the yarns from twisting during the drying process. The suction caused by the fans tends to hold the lower portion of the hanks to the belt by  
80 adhesion.

A further advantage in a machine of this character is that any material may be placed upon the belt D to be dried, or the material may be hung upon the conveyer E, making  
85 a machine which is capable of being converted either into a drier in which the material may be dried in bulk or may be dried in skeins, hanks, or bundles, depending altogether upon the material for which the drier is used. It  
90 will be understood that in drying some materials suspended from the conveyer E they need not rest upon the belt D.

The details of construction of the drying-chamber A and the chamber B may be varied  
95 according to the use for which the invention is intended, the main feature of the invention being the use of the two conveyers within the one chamber.

I claim as my invention—

1. The combination in a drying-machine,  
100 of the drying-chamber, a perforated endless-



belt conveyer and a conveyer from which the material to be dried is suspended, the carrying-run of said conveyer being above the carrying-run of the perforated belt conveyer, substantially as described.

2. The combination in a drying-machine, of the drying-chamber, a perforated endless-belt conveyer and a conveyer from which the material to be dried is suspended, the carrying-run of said conveyer being above the carrying-run of the perforated belt conveyer and

in such position in respect thereto that yarn suspended therefrom will rest upon the perforated belt conveyer, substantially as and for the purpose described. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSIAH K. PROCTOR.

Witnesses:

WILL. A. BARR,

JOS. H. KLEIN.