UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN STRETCHING AND DRYING CLOTHS.

Specification forming part of Letters Patent No. 127,691, dated June 11, 1872.

To all whom it may concern:

Be it known that I, PETER HILD, of the city, county, and State of New York, have invented a new and Improved Machine for Stretching and Drying Cloth and other fabrics; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of my invention. Fig. 2 is a plan or top view of the same. Fig. 3 is a transverse section of the same.

Similar letters indicate corresponding parts.

This invention relates to certain improvements in that class of machines in which the cloth or other fabric is stretched by the action of tentering-belts. My improvements consist in the arrangement of projecting grooved rims on the tentering-belts, to act against rollers secured to the frame of the machine in such a manner that, by the action of said rollers and rims the belts are securely retained at the desired distance apart. The rollers on one side of the frame have their bearings in slides which can be adjusted toward and from the opposite sides of the frame, for the purpose of accommodating the tentering-belts to the width of the fabric to be treated. With the tentering-belts are combined two air-trunks, one above and the other below, and two pairs of fan-blowers which throw air into the air-trunks above and below the fabric carried by the tentering-belts, in such a manner that the drying process is accomplished in a comparatively short time, and the course of the fabric can be materially shortened as compared with similar machines heretofore used for the same purpose.

In the drawing, the letter A designates a frame, the ends of which form the bearing for two shafts, B B′, on each of which are mounted two pulleys, C C and C′ C′. The shafts B B′ are parallel to each other; but the pulleys C′ C′ on the shaft B′ are placed closer together than the pulleys C C on the shaft B, so that the tentering-belts D, which are stretched over said pulleys, converge as they approach the pulleys C′ C′. (See Fig. 2.) Said belts are provided with grooved rims *a a*, (see Fig. 3,) which engage with tension-rollers *b*, and the belts are supported by rollers *b′ c*, provided at the proper distance apart, to prevent said belts from sagging down. The studs or axles of the tension-rollers *b* and supporting-rollers *b′ c* on one side of the machine are rigidly secured to the frame A; but those on the opposite side of the machine are secured in slides E, which are adjustable toward and from the opposite side by means of hand-screws F, so that the distance between the tentering-belts can be accommodated to the width of the fabric to be treated, and that the tension exerted on the fabric while passing through the machine can be increased or decreased, as may be desirable. The belts D are provided with hooks, to which the fabric is fastened. In the upper part of the frame A is secured an air-trunk, G, through which the tentering-belts and the fabric attached to the same pass in the direction of the arrow, shown in Fig. 1, and near the discharging end of this air-trunk are situated two fan-blowers, H H, which inject a current of air into the same in the direction opposite to that in which the tentering-belts move, said fan-blower being so situated that one of them drives the air over and the other under the fabric carried by the tentering-belts. A similar air-trunk, I, is made to embrace the returning branches of the tentering-belts, said air-trunk being supplied with air by two fan-blowers, J J. By these means the fabric is brought in contact from both sides with currents of air, which rapidly carry off the moisture.

After the fabric has thus been stretched and dried, and as the same leaves the second air-trunk I, it comes in contact with revolving knives K, which act on the fabric close to the inner edges of the tentering-belts, so as to separate the same from said belts and allow it to be taken up by the roller L.

By these means cloth or other textile fabrics can be sized, stretched, and dried in a very short time, and on account of the air-trunks and fan-blowers connected with the same, the distance over which the fabric is carried before it is dry can be materially reduced.

For the purpose of applying the sizing to the fabric, I use a reservoir, M, which con-

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Improvement in Apparatus for Sizing, Stretching, and Coloring Paper and other Fabrics.

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Fig. 1.

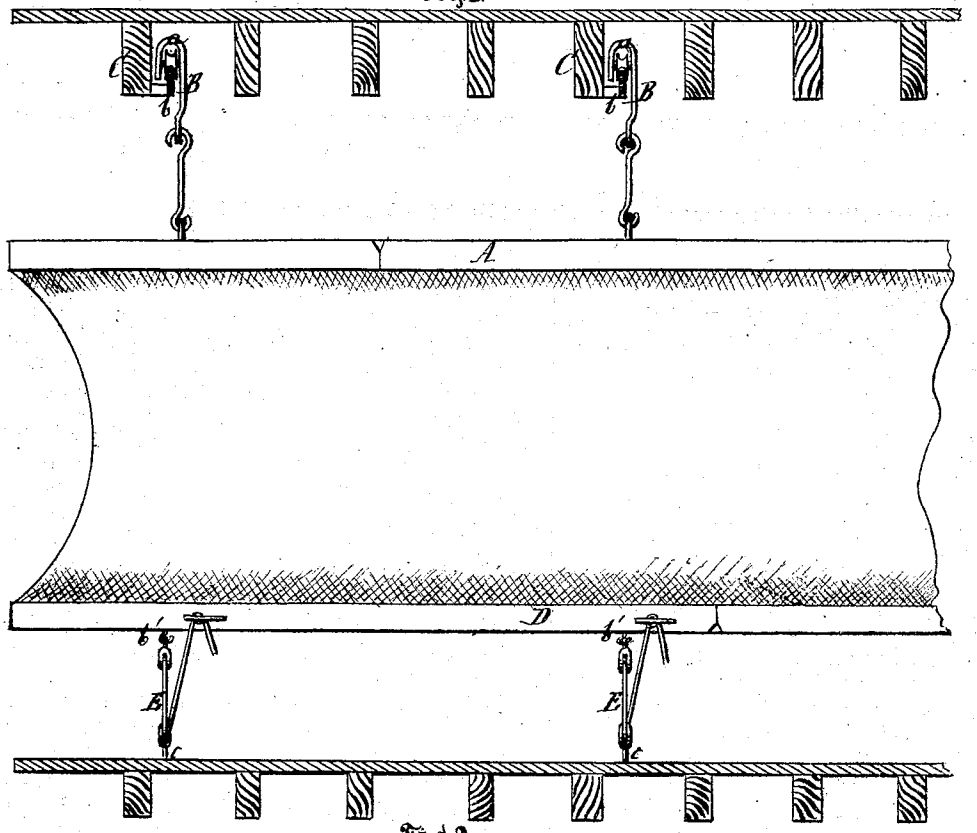
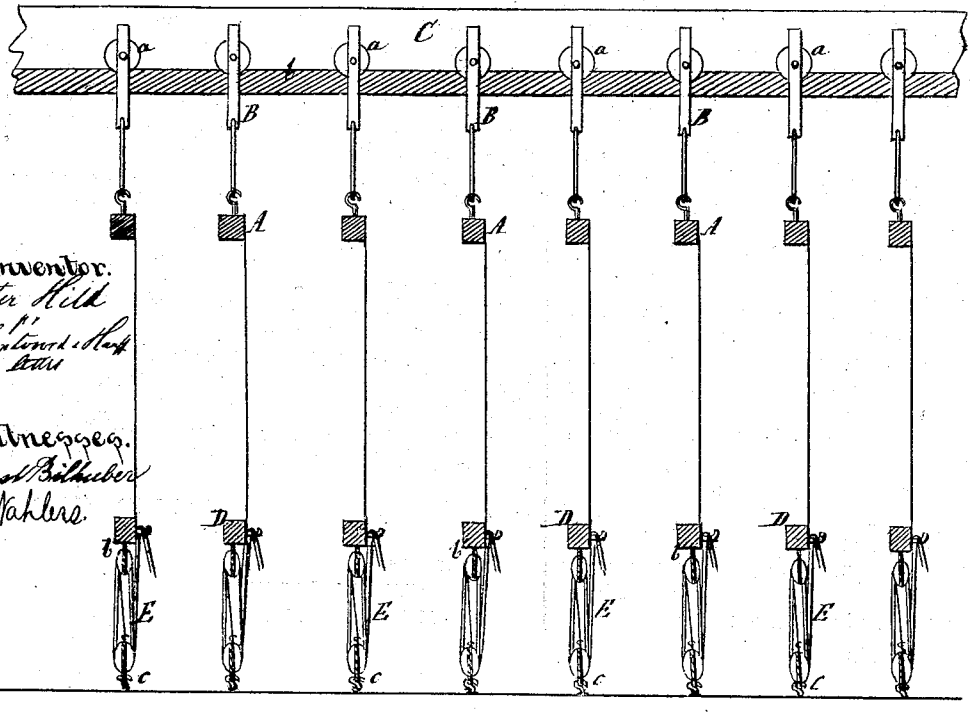


Fig. 2.



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