

WILLIAM BAILEY.

Machine for Sizing, Stretching, and Drying Cloth.

No. 127,731.

Patented June 11, 1872.

Fig: 1.

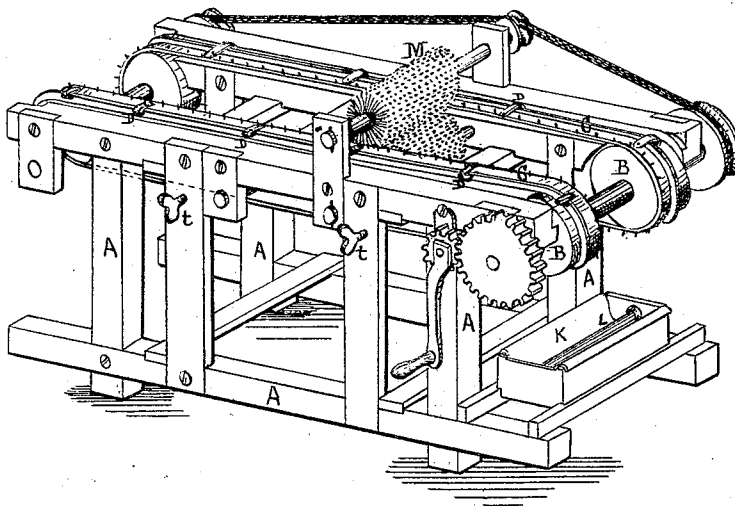
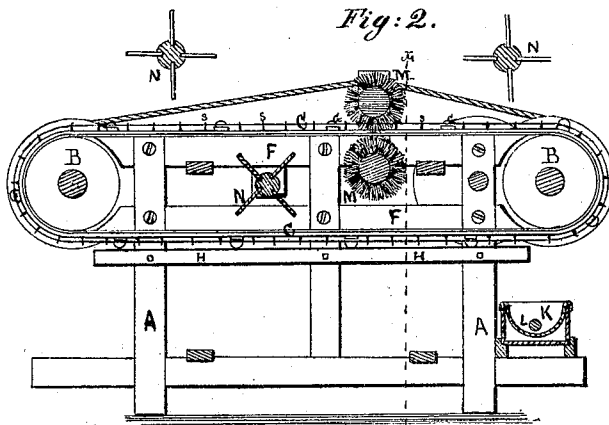


Fig: 2.



WITNESSES

T. W. Stump
H. H. Young

William Bailey Inventor
By David A. Burr Atty.

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Fig: 3.

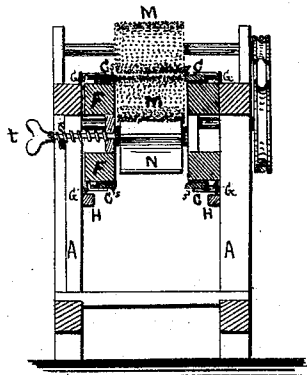
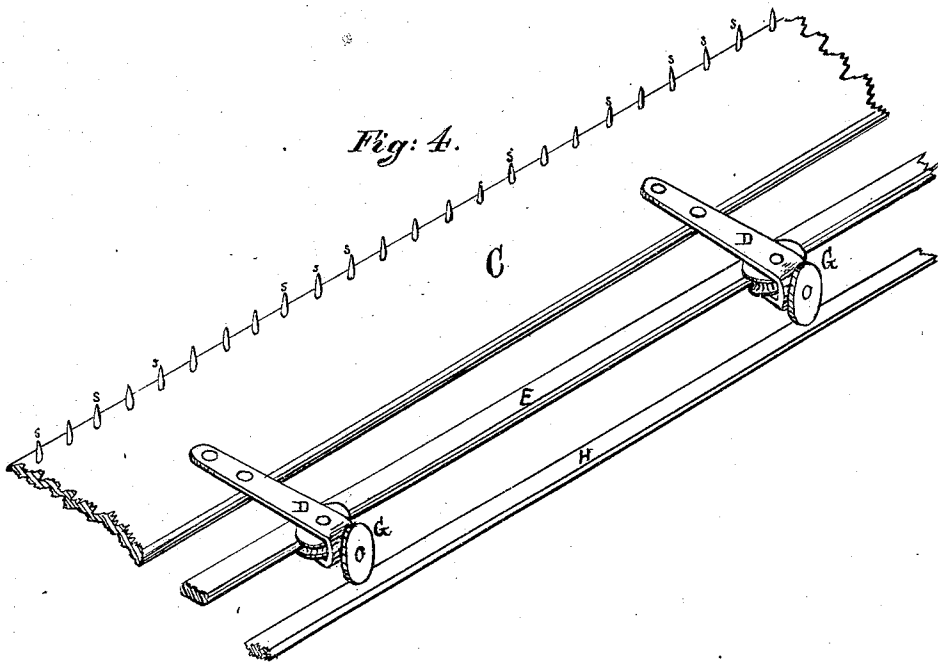


Fig: 4.



WITNESSES

L. W. Stump
E. H. Young

William Bailey

Inventor

By David A. Burr

Atty:

UNITED STATES PATENT OFFICE.

WILLIAM BAILEY, OF OSWEGO, NEW YORK, ASSIGNOR OF ONE-HALF HIS
RIGHT TO GEORGE B. SLOAN, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR SIZING, STRETCHING, AND DRYING CLOTH.

Specification forming part of Letters Patent No. 127,731, dated June 11, 1872.

SPECIFICATION.

I, WILLIAM BAILEY, of Oswego, in the county of Oswego and State of New York, have invented an Improved Machine for Sizing, Stretching, and Drying Cloth for Curtains, and for other purposes, of which the following is a specification:

My invention relates to certain improvements in the construction of cloth-stretching machines, whereby I am enabled to adjust the same to varying widths of cloth, and to size the same evenly and uniformly with great facility and rapidity. Said improvements consist, first, of an improved combination of friction-rollers with guide-sheaves upon flexible carrier-belts, for stretching and carrying the cloth, to support said belts; secondly, of an adjustment of the guide-rails over which the stretching-belts are carried; thirdly, of an improved combination of friction-rollers with a vat to contain sizing, and with the endless stretching-belts.

In the accompanying drawing, Figure 1 is a view in perspective of my improved machine, with the stretching-belts traversing in but one plane. Fig. 2 is a central, longitudinal, and vertical section of the machine; Fig. 3, a transverse section in line *x x* of Fig. 2; and Fig. 4, a view in perspective of a section of one of the endless flexible belts, and of the guide-rails upon which it moves, illustrating the friction-sheaves and rollers combined therewith.

A A is the frame-work of the machine, carrying upon either end drum-shafts upon which are secured the drums B B, carrying the endless belts upon which the cloth is to be stretched. These drums are arranged in pairs on each shaft at a distance apart equal to the narrowest width of cloth to be stretched and dried, as illustrated in Fig. 1. C C are the endless belts, made of India rubber, gutta-percha, or its equivalent, so as to be perfectly flexible. These belts are each studded upon their inner edge with metallic points, *s s s*, firmly secured thereto so as to project upwardly therefrom, to engage and hold the edges of the cloth to be stretched, as shown in Figs. 1 and 4, and sheaves D D (see Fig. 4) are secured to their outer edge at proper intervals to bear (in the manner illustrated in said Fig. 4) against the outer side or edge of rails E E', fixed in

the machine on each side thereof, so as to form endless ways or guides for the belts. The sheaves thus constructed and secured to the belts C C and bearing against the rails E E', resist an inward tension upon the belts and serve to keep them apart properly under the strain of the cloth stretched thereon. The rail E', upon one side of the machine, is secured to a frame, F F, which is left free to slide in and out to and from the center of the machine, being moved and secured by suitable set-screws, *t t*, as illustrated in Figs. 3 and 1. The distance between the rails, and consequently the tension upon the cloth, may be thus adjusted at pleasure, and by setting said rail at an inclination with the other, so that the two shall gradually diverge from one end of the machine to the other, the stretching strain on the cloth may be gradually increased as it is carried forward, the first stretching being previously accomplished by a divergence of that portion of the rails passing over the first drum. G G, Fig. 4, are friction-rollers or wheels upon the end of the sheaves, (at right angles to the pulleys therein and to the belt to which they are secured,) which traverse upon horizontal rails H, (see Figs. 3 and 4,) and thus support the belts and prevent them from sagging, as illustrated in Fig. 2. K is a trough or vat to contain the sizing preparation which is to be applied to the cloth, and L is a roller placed therein to facilitate the passage of the cloth through the size. M M are cylindrical revolving brushes, so placed as that the cloth after being sized shall be carried between them, and the sizing be thereby evenly spread over its surface before drying and hardening thereon. N N are a series of fans, arranged to force currents of air over the cloth upon both sides thereof, so as to facilitate its drying. Although in the accompanying drawing the endless belts are illustrated as carried through on a single horizontal plane only, I contemplate the extension of the belts so as to pass back and forth in a number of parallel horizontal planes, and to multiply the fans so that the cloth shall be thoroughly dried before it leaves the machine.

In operation, the cloth to be prepared is unwound from a drum at the front of the machine and passed under the roller L in the

sizing-vat, thence up onto the endless belts C C, its edges being caught by the pins projecting therefrom. So soon as it is thus caught upon the belts the two belts in passing forward are caused to separate by the divergence of their guide-rails until the cloth is tightly stretched, and are thus kept apart by the rails until the point is reached at which the cloth, thoroughly dried, is wound upon a drum at the rear end of the machine. The wet cloth, so soon as it fairly enters the machine and is properly stretched thereby, passes between the revolving brushes M M, which give uniformity and smoothness to the sizing upon its surfaces, and during its entire course it is subjected to the desiccating action of the currents of air forced against the same by the series of revolving fans.

The drums B B, brushes M M, and fans N N, are made to revolve by means of suitable gearing connecting the same with any suitable driving power, in the usual manner.

Claims.

I claim as my invention—

1. In combination with each other, the belt

C, sheaves D, and friction-roller G, all arranged and operating substantially as and for the purpose herein described.

2. The combination of one or both of the rails E, guiding the stretching-belts C of the within-described machine, with a sliding frame, F, adjusted and secured by set-screws *t t*, substantially as and for the purpose herein set forth.

3. The combination of the sizing-vat K and its contained roller L, with the drums B B and endless belts C C of the within-described machine, when arranged and made to operate substantially as and for the purpose herein set forth.

4. In combination with each other, the sizing-vat K, endless belts C C, cylindrical brushes M M, and fans N N, all arranged to operate in sizing, stretching, and drying cloth, substantially as herein set forth.

Witness my hand to said specification.

WILLIAM BAILEY.

In presence of—

DAVID A. BURR,
H. H. YOUNG.