E. WOOLSON.

Cloth-Steaming Apparatus.

No. 196,511. Patented Oct. 23, 1877.

Fig: 1.

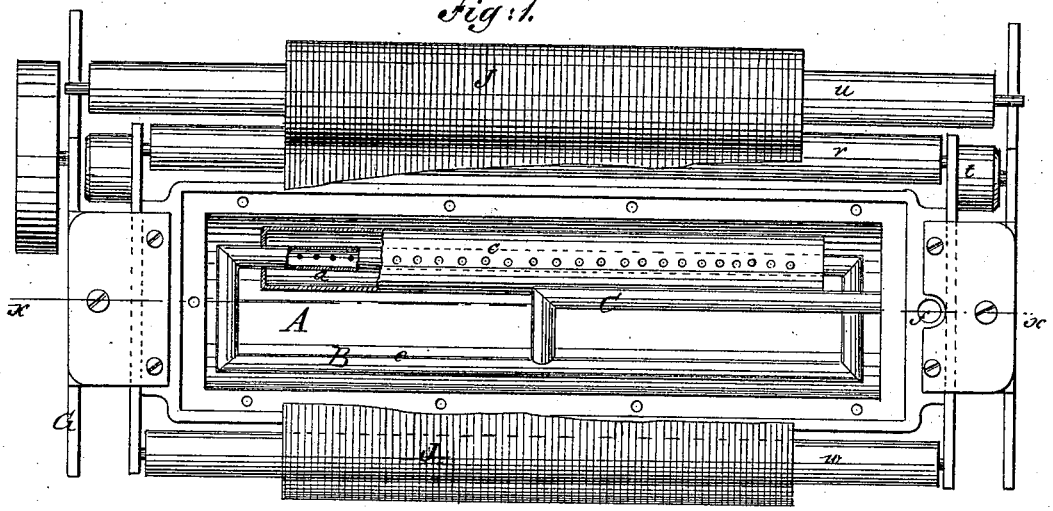


Fig: 2.

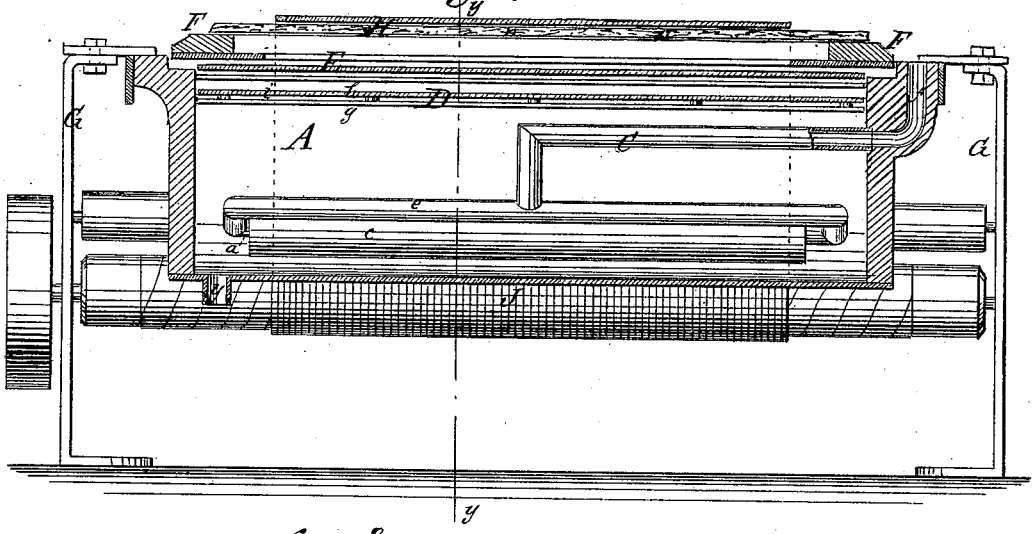
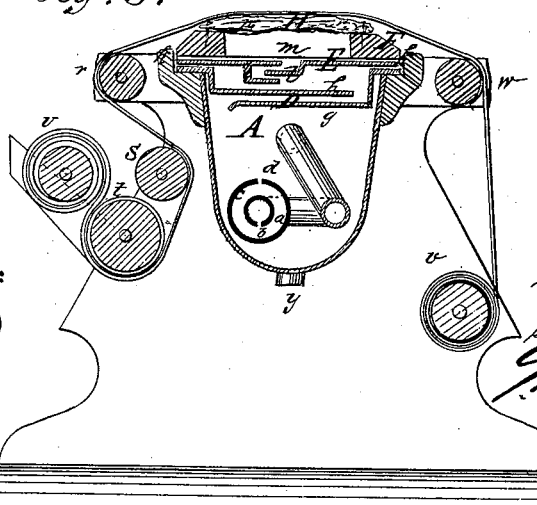


Fig: 3.



Witnesses:

W. Lovell

H. C. Mattenberg

Inventor:

Egbert Woolson

per

UNITED STATES PATENT OFFICE.

EGBERT WOOLSON, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN CLOTH-STEAMING APPARATUS.

Specification forming part of Letters Patent No. **196,511**, dated October 23, 1877; application filed March 12, 1877.

To all whom it may concern:

Be it known that I, EGBERT WOOLSON, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and Improved Cloth-Steaming Machine; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in steaming or surface-dressing cloths; and the invention consists in a cloth-steaming machine constructed with a steam-chest within which is fitted a link of steam-pipe, one side of this link being perforated with a series of holes in its under surface, and inclosed in a drum provided with perforations on its upper surface, and the other side of the link, midway between its two ends, having fitted to it a steam-supply pipe.

The invention also consists in connecting, with the steam-chest of a cloth-steaming apparatus, a plate, constructed to permit the steam to issue uniformly the entire length of the steam-chest, finally delivering it through a labyrinthine passage formed in a second plate, covering the first-named plate; and the invention also consists in combining, with the apparatus hereinbefore named, a covering of flexible absorbent material, substantially as is hereinafter more fully and particularly described.

The object of steaming cloth, as is well known, is to remove the gloss and streaks on its surface caused by the press, which forces the nap down into a uniform flat compact surface, producing a gloss which is more or less streaked, presenting an unfinished appearance. To remove this gloss, and give the cloth its proper finish, it is ordinarily subjected to steam, which loosens and raises the fibers of wool or nap from their matted and pressed condition, producing a soft surface, without gloss.

As an improvement on this class of steaming apparatus, I construct mine as will be seen from the following description and accompanying drawings, wherein—

Figure 1 is a plan or top view of my improved cloth-steaming apparatus with the top parts removed; Fig. 2, a side elevation, partly in section; and Fig. 3, a cross-section in the line *y y*, Fig. 2.

Similar letters of reference indicate like parts in the several figures.

A represents the steam-chest of my apparatus. This steam-chest may be of any desired size, and it may be made from any suitable material. Fitted within the chest A, and resting upon the bottom of the same, is a continuous link, B, of steam-pipe. The under surface of one side, *a*, of this link is perforated with a series of apertures, *b*, and surrounding this side *a* of the link is a drum, *c*, having apertures *d* formed in its upper surface. Midway from end to end of the other side *e* of the link is secured a steam-supply pipe, C, which passes in a suitable channel, *f*, formed at one end of the steam-chest A. Tightly fitting with a steam-tight joint into the top of the steam-chest A is a plate, D. This plate is composed of two pieces of metal, *g* and *h*, placed one on top of the other, but with a space, *i*, between them, and it may be provided with a flange, *k*, by means of which it can be secured to the steam-chest A. The plate D being in position, as just described, a second plate, E, is placed over the plate D. This plate has on its under side a kind of labyrinthine passage, *l*, formed by folding the edge of one piece of metal within the other, as shown in Fig. 3. The upper surface of the plate has a slot, *m*, formed in it. The plates D and E being placed in position, a frame, F, is secured over the plate E. To this frame is fixed any flexible absorbent material, H, such as felt, cloth, or sponge, as shown at *n* and *p*. This flexible absorbent is tightly fastened to the side of the frame, so as to entirely cover its upper surface.

To the supporting frame-work G of the apparatus are attached a series of rolls, *r*, *s*, *t*, and *u*, on one side, and *v* and *w* on the other.

My steaming apparatus being constructed substantially as above described, its operation is as follows: Steam from any suitable generator, being admitted into the channel *f* in the steam-chest A, passes through the pipe C into the side *e* of the link B, through this side to the side *a*, issuing from the apertures *b* in the under side of the same, filling the surrounding drum *c*, issuing from the apertures *d*, filling the interior of the steam-chest A with steam,

which passes into and through the space *i* in the plate D in a sheet, as it were, of uniform thickness, and into the labyrinthine passage *l* in the plate E, through the slot *m* of the plate, and, finally, robbed of much of its force, it impinges against the under surface of the flexible covering H, forcing it up into a convex form, and saturating it with heated moisture, but not escaping through this material. The cloth G from the roller *v*, bearing against the roller *w*, passes over the convex surface of the material H, across which it is drawn by the action of the cloth-beam roller *t*, to which suitable power is applied, causing it to revolve. As the cloth is in this way drawn over the material H, it is pressed more or less tightly in contact with it, so that the heated moisture it contains is brought out and against the surface of the cloth, and this heated moisture is sufficient to free the fibers or nap from their matted condition, which at once removes the glossy appearance of the cloth, and produces a soft unglazed surface and finish.

Heretofore the steam was allowed to come in direct contact with the cloth. This, however, is objectionable, since it is apt to give the cloth a streaked appearance, as the steam may impinge with greater force in one place than in another; but by my apparatus the force of the steam is greatly reduced by indirectly leading it under the flexible material H, through which it does not escape, but, on the contrary, merely charges it with heated moisture, which, as the cloth is drawn over it, wipes, as it were, the surface of the cloth, and removes the gloss.

The condensed steam that collects within the steam-chest A is permitted to escape through an outlet, *y*.

Having now described the construction and operation of my cloth-steaming apparatus, what I claim as new, and desire to secure by Letters Patent, is—

A cloth-steaming apparatus constructed with pipes in the interior of the steam-chest thereof, in combination with two covering-plates with tortuous and other steam-passages, and a frame provided with a spongy surface, substantially as and for the purpose described.

EGBERT WOOLSON.

Witnesses:
T. M. BROWN,
HENRY E. MARSH.