D. Henderson.

Machine for Drying and Dressing Cloth

No. 35,823. Patented Jul. 8, 1862.

Fig. 1.

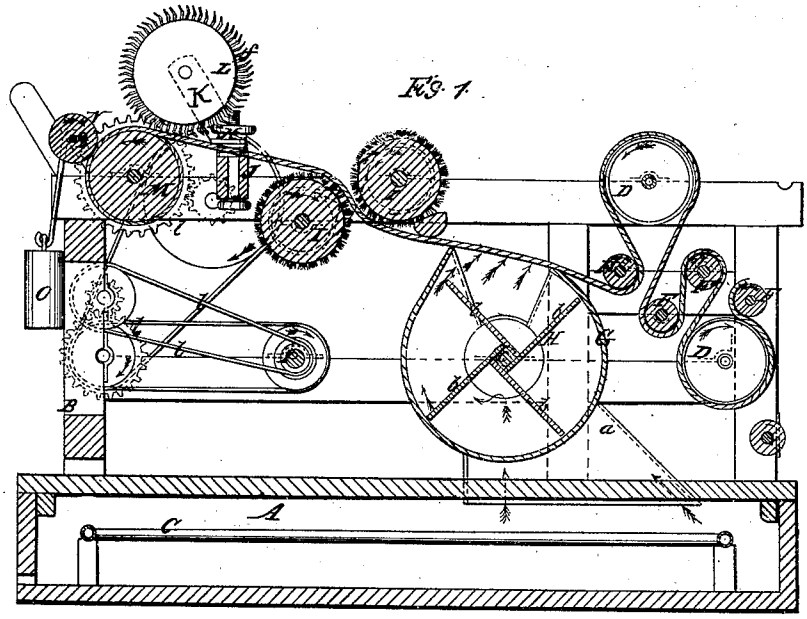
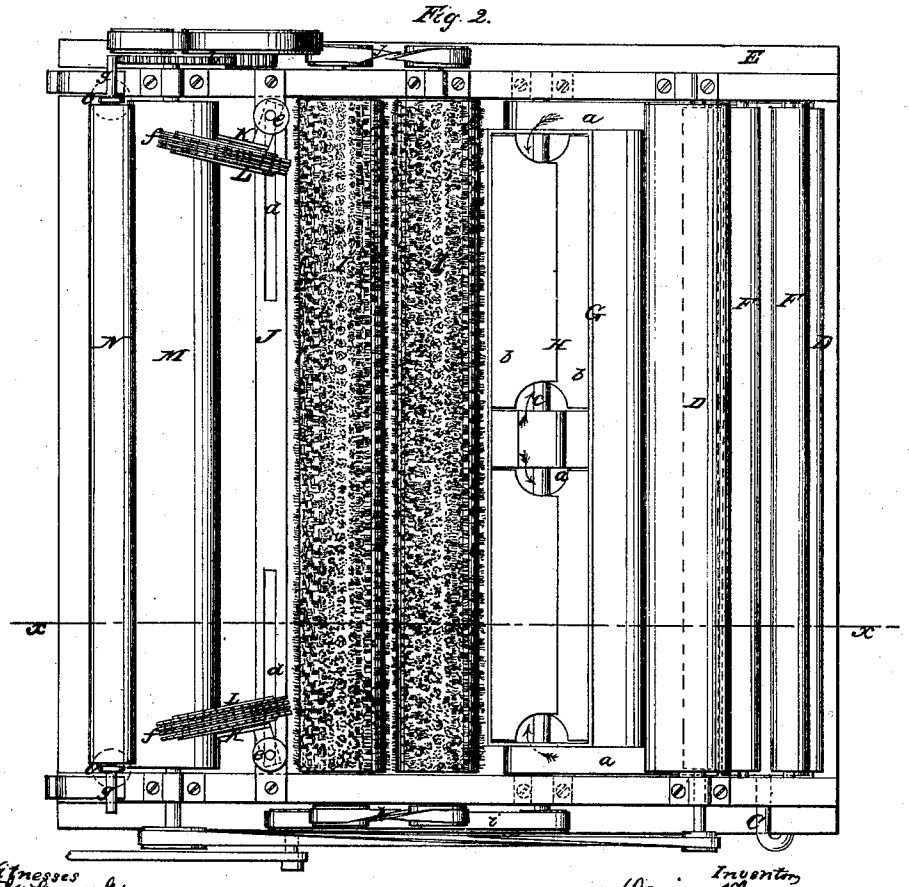


Fig. 2.



Witnesses
[illegible]
[illegible] Reed

Inventor
David Henderson
Per Munn & Co

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DAVID HENDERSON, OF MERRIMAC, NEW HAMPSHIRE.

IMPROVEMENT IN MACHINES FOR DRESSING AND DRYING WOOLEN CLOTHS.

Specification forming part of Letters Patent No. **35,823,** dated July 8, 1862.

To all whom it may concern:

Be it known that I, DAVID HENDERSON, of Merrimac, in the county of Hillsborough and State of New Hampshire, have invented a new and Improved Machine for Drying and Dressing Woolen Cloths; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention taken in the line *x x*, Fig. 2. Fig. 2 is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the two figures.

The object of this invention is to obtain a machine by which woolen cloths—such as flannels, broadcloths, &c.—may be subjected simultaneously to the process of tentering, drying, napping, or brushing and pressing.

To this end the invention consists in the employment or use of two or more steam-cylinders, with necessary carrying or guiding rollers arranged with a hot-air chamber heated by steam-pipes, a rotary blower, rotary tentering devices, and brush or napping cylinders, as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a box or chest on which the working parts of the machine are placed and fitted in a suitable framing, B. The box or chest A is a hot-air chamber, and it is heated by steam-pipes C, which are arranged within it either in the form of coils or in any suitable way to obtain a sufficient length of pipe or heat-radiating surface within the box or chest. The pipe C may receive the steam from the boiler used for warming the building in which the machine is placed.

In the framing B there are placed two cylinders, D D, which may be stationary or allowed to rotate. These cylinders are of metal, are hollow, and heated by steam from the pipe C in the box or chest A, the end of which communicates with a hollow journal at one end of the lower cylinder, D, and a hollow journal at the opposite end of said cylinder communicating by means of a pipe with a hollow journal at one end of the upper cylinder, D; but with stationary iron cylinders no hollow journals are required, the steam being let in and out where most convenient. F represents carrying or guiding rollers, which are placed in the framing B, and around which, as well as the steam-cylinders D D, the cloth (shown in red, Fig. 1) to be operated upon passes.

G represents a blower-case, which is of cylindrical form, placed on the box or chest A, and communicating with it by spouts or tubes *a*. H is the blower, formed of wings *b*, attached radially to a proper shaft, *c*, the bearings of which are on the framing B.

I I are two cylinders, placed in the framing B, and provided at their peripheries either with brushes or any suitable substance to raise a nap, if napping be required.

J is a bar, which is secured permanently on the framing B, just back of the outermost brushing or napping cylinder I. This bar J has oblong slots *d* made in it—one at each end—through which bolts *e e* pass and secure inclined plates K K to the bar J. The plates K K serve as supports for wheels L L, the axes of which are secured to the plates, and the periphery of each wheel L has a series of curved or hooked teeth, *f*, attached to it, which are similar to card-teeth. The wheels L L may be adjusted a little angularly or obliquely with the edges or selvages of the cloth, and they are adjusted directly over the selvages and rotated by the movement of the cloth.

M is a roller, placed in the framing B, just back of the wheels L L, and around which the cloth is wound, and N is a pressure-roller, the journals *g g* of which bear against inclined supports *h h* on the framing B, said journals having suitable weights, O, attached to them.

The blower-shaft *c* is driven from the power or driving shaft P of the machine by a belt, *i*, and from the opposite end of shaft P one of the brushing or napping cylinders I is driven by a belt, *j*, motion being communicated to the other cylinder, I, from the first-mentioned one by a belt, *k*, at the opposite side of the machine. Motion is communicated to the roller M by gearing and belting *l*, arranged in any proper way.

The cloth to be operated upon passes around the steam-cylinders D D and guiding-rollers F, and directly over the top of the blower-case

G, the upper part of which is open, and between the two brush or napping cylinders I I, underneath the wheels L L and around the roller M. The cloth is heated and partially dried in passing around the cylinders D D, and is further dried in being subjected to a blast of hot air from the blower H, the hot air being drawn up by the rotation of the blower from the box or chest A through the spouts or tubes *a* and projected against the cloth, as indicated by the arrows in Fig. 1. The cloth is brushed or has a nap raised upon it on one or both sides in passing between the cylinders I I, while the wheels L L stretch the cloth laterally, in consequence of having a slightly-oblique position with it, the teeth *f* catching into the cloth and performing the function of tenters, the wheels being rotated by the movement of the cloth. The cloth therefore is wound on the roller M in a properly stretched or distended state, and is subjected to pressure thereon by the loaded roller N.

Thus it will be seen that the cloth is subjected to the different processes of drying, brushing, or napping, lateral tentering, and pressing all at the same time or at one operation, and by a machine which monopolizes but little space, and which may be put up or manufactured at a very moderate cost. The pipe which conveys steam to heat the cylinders D D also heats the air in the box or chest, from which hot air is forced or made to impinge against the cloth, said pipe being therefore made to perform a double function. The machine is applicable for any width of cloth, and performs the work rapidly and in a perfect manner.

The cloth may have a greater or less speed given it in passing through the machine, as circumstances may require.

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

The combination of the brush or napping cylinders I I, steam-cylinders D D, rotary blower H, rotary tenter-wheels L L, receiving-roller M, and pressure roller N, all arranged as and for the purpose herein specified.

DAVID HENDERSON.

Witnesses:
FULLARTON LEITCH,
JAMES MARTIN.