J. T. Earle,

Felting Machine.

No. 107,887. Patented. Oct. 4. 1870.

Fig. 1.

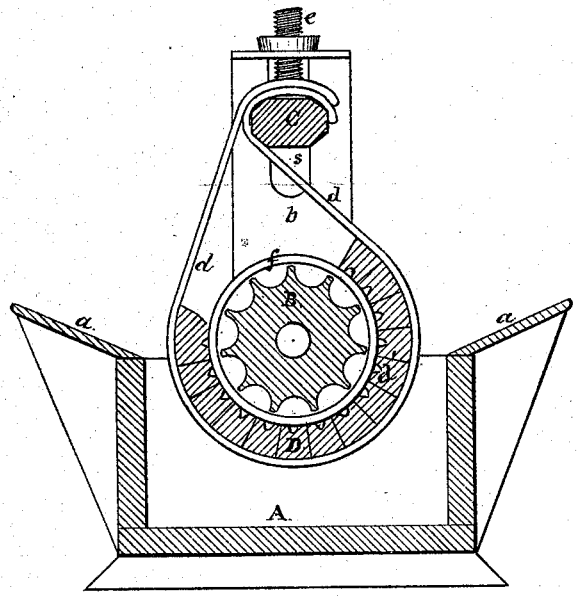
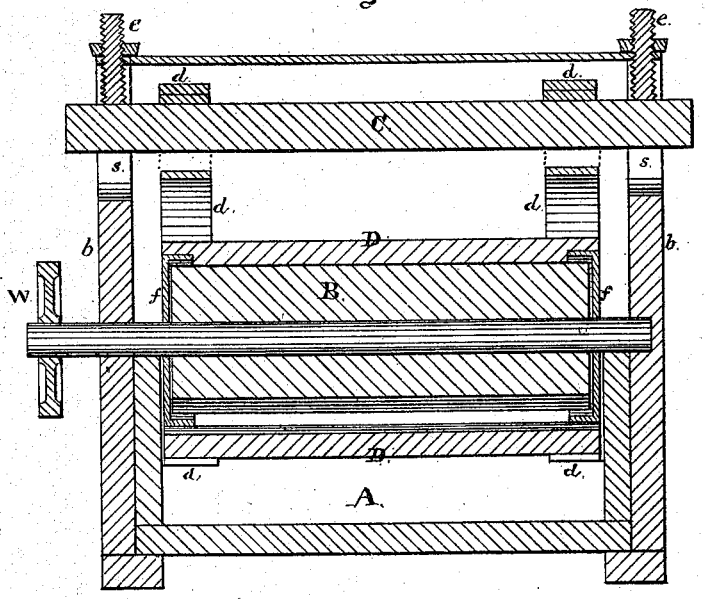


Fig. 2.



Witnesses.
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JOHN T. EARLE, OF DANBURY, CONNECTICUT.

IMPROVEMENT IN MACHINES FOR FELTING AND HARDENING HAT-BODIES.

Specification forming part of Letters Patent No. **107,887**, dated October 4, 1870.

I, JOHN T. EARLE, of Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Felting and Hardening Hat-Bodies, and other fabrics composed of fur or wool, or other fibrous material which will felt, of which the following is a specification:

The first part of my invention consists in the combination of a longitudinally-grooved or corrugated rotary cylinder with a flexible apron nearly surrounding the same, so constructed, arranged, and operated that the hat-bodies or other articles to be felted or hardened will be carried around as the cylinder revolves between the corrugated cylinder and the flexible apron, in the form of cylindrical rolls, and be continually subjected to a rotary motion and variable pressure.

The second part of my invention consists in providing fenders at each end of the rotary cylinder, to prevent the same from coming in contact with the flexible apron.

The third part of my invention consists in means for so adjusting the flexible apron to the rotary cylinder that the pressure upon the hat-bodies or other articles being felted or hardened may be varied at the pleasure of the operator.

In the accompanying drawing, Figure 1 represents a cross-section, and Fig. 2 a longitudinal section, of my invention.

A is a box to hold the hot water, and *a a* are the inclined side tables, upon which the hat-bodies are manipulated or "crozed" as they are from time to time taken from the machine. B is the grooved or corrugated cylinder, having its journal-bearings in posts *b b* at each end of the box A. C is a cross-bar over the rotating cylinder, from which the flexible apron is suspended by means of elastic straps *d d*. D is the flexible apron, composed of a series of slats, of wood or other suitable substance, attached to the flexible straps *d d*. Each of said slats has a longitudinal groove, *d'*, on its inner face.

At each end of the rotating cylinder, and mounted loosely on the journals thereof, is a circular plate, *f f*, of half an inch greater diameter than the cylinder. These circular plates, being concentric with the cylinder, prevent any part of the latter from coming into actual contact with the flexible apron.

The cross-bar C has its bearings in slots *s* in the posts *b b*, and is held in position by two adjusting-screws, *e e*, by means of which it can be moved up and down in said slots, so as to vary the pressure between the rotating cylinder and the flexible apron.

It will be seen that the two ends of the flexible apron do not meet around the rotating cylinder, so that an open space is left between them over the upper portion of said cylinder, into which the hat-bodies or other articles to be operated upon are placed, and from which they are taken when temporarily or finally removed from the action of the machine.

When a hat-body or other article to be operated upon is placed in the machine through said open space, it is partially rolled by the operator, and so placed that the rolled portion will be seized by the corrugations of the cylinder, and carried forward between said cylinder and the apron, by which it is speedily rolled into a cylindrical form, and will be carried round and round and through the water in the box until removed from the machine.

The cylinder is revolved by any suitable power applied to the wheel W, on one end of its shaft, by means of a band or any other suitable means.

At the end of the machine opposite to that at which the power is applied is placed a box containing hot water, and provided with a table for "pinning out" the hat-bodies after they have been removed from the machine; but as no claim is made to this part of the apparatus, it is not shown in the drawing.

This machine is equally applicable to hardening as well as felting hat-bodies; but when used for hardening there is to be no water in the box.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the rotating corrugated cylinder, the flexible slatted apron, and the elastic straps, suspending the apron around the cylinder, substantially as described.

2. In combination with the rotating corrugated cylinder, flexible slatted apron, and

elastic straps, the circular plates or fenders *f f*, at the ends of the cylinder, substantially as and for the purpose described.

3. In combination with the rotating corrugated cylinder, flexible slatted apron, and elastic straps, the movable bar, to which the apron is suspended, with adjusting-screws, or their equivalents, to regulate the pressure between the cylinder and apron, substantially as described.

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Witnesses:
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