W. HEBDON.

Cloth-Pressing Machines.

No. 205,085. Patented June 18, 1878.

Fig. 1.

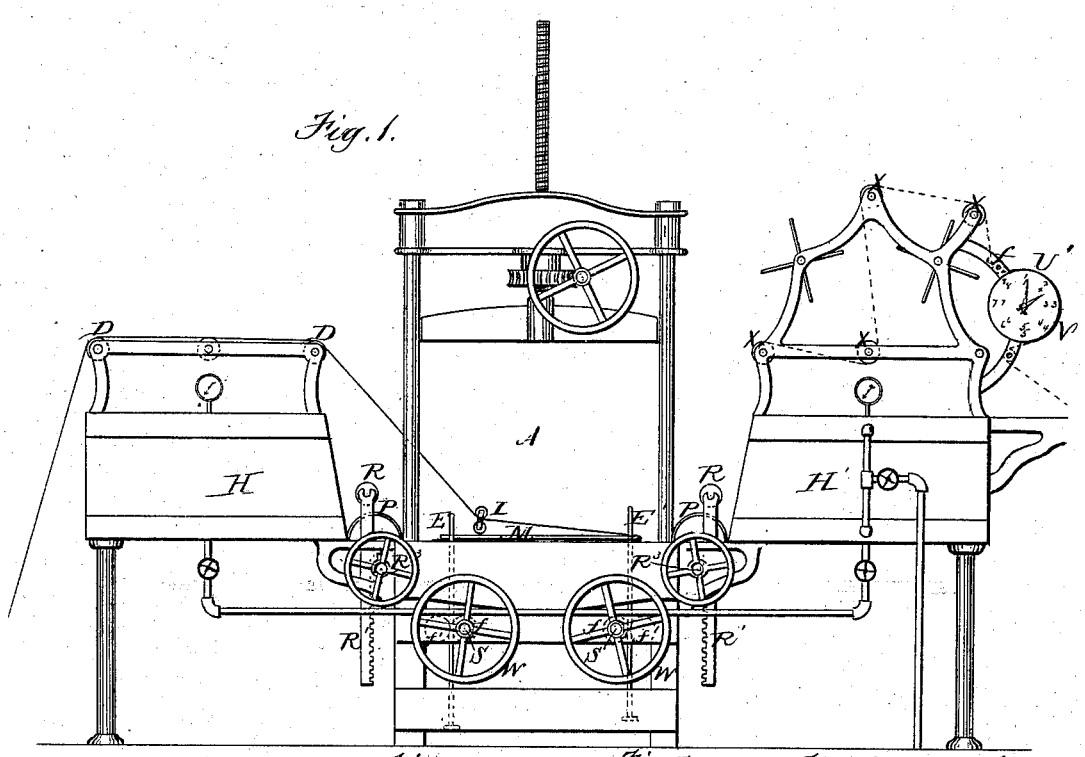


Fig. 2.

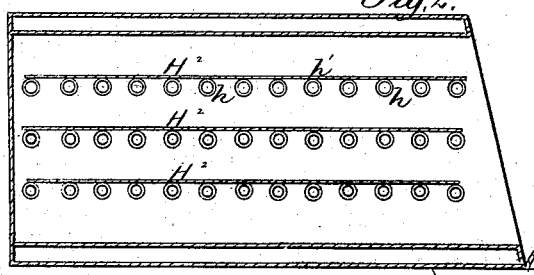


Fig. 3.

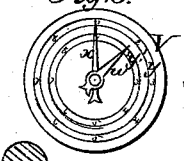


Fig. 4.

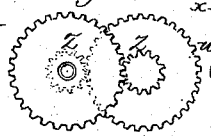


Fig. 5.

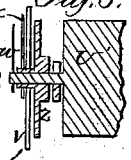
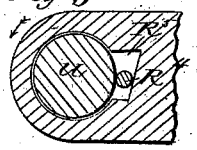


Fig. 6



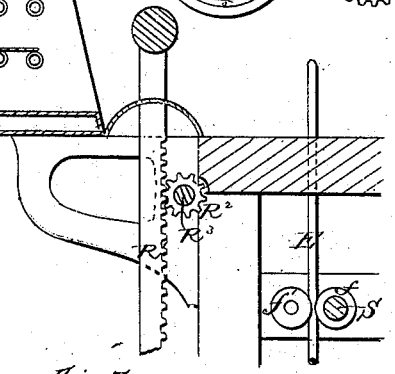
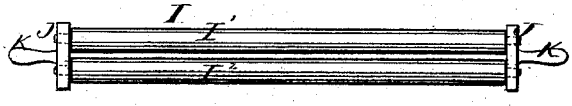


Fig. 7.



Witnesses.
Sam'l M. Barton
A. E. Denison

Inventor
Wm. Hebdon
by his Attys.
C. D. Wright & Bro.

UNITED STATES PATENT OFFICE.

WILLIAM HEBDON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CLOTH-PRESSING MACHINES.

Specification forming part of Letters Patent No. **205,085**, dated June 18, 1878; application filed April 12, 1878.

To all whom it may concern:

Be it known that I, WILLIAM HEBDON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Cloth-Pressing Machines, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 represents an enlarged sectional view, showing one of the heating-chambers. Figs. 3, 4, and 5 are views of the indicating mechanism. Fig. 6 is a view of the stopping device for the measuring-roll, and Fig. 7 a view of the folder.

This invention is an improvement on my Patent No. 168,017, dated September 21, 1875, for an improved process and machine for pressing cloth. In this patent cloth is folded up on the bed of a press, with heated leaves interposed between its folds, and subjected to the action of the press, heating-chambers being employed, located in convenient relation to the press and adapted to heat the leaves.

The present improvements have for their objects to facilitate the passage of the heated leaves to and from their heating-chambers, and the adjustment of the vertical guide-pins which hold the leaves on the bed of the press; also, to provide an improved measuring apparatus adapted for use in connection with a cloth-finishing machine.

To these ends my invention consists, first, in the provision of vertically-adjustable horizontal rollers, one located between each heating-chamber and the press, for the purpose of supporting the heated leaves as they are withdrawn from the chambers and facilitating their passage to and from the press; secondly, in the provision of means for simultaneously raising the vertical guide-pins which project from the press-bed and hold the heated leaves in place; and, thirdly, in a measuring-roll adapted to be used in connection with a cloth-finishing machine, said roll being combined with indicating mechanism operated by its forward rotation, and a device for preventing its backward rotation, all of which I will now proceed to describe.

In the drawings, A represents the press, having the guide-pins E E′; H H¹, the heating-chambers, and M the leaves which are located in the chambers, these parts, as far as their general construction and relative arrangement are concerned, being the same as described in my patent above mentioned.

The chambers H H¹, which are adapted to be heated by steam, as before, are now provided with horizontal shelves H² H², which divide each chamber into several horizontal compartments. These shelves are adapted to be heated internally, and I prefer to construct them of parallel tubes *h*, connecting at both ends with the steam-spaces, these tubes preferably supporting sheets of thin metal, *h′*, which form the bearing-surfaces of the shelves. This arrangement enables several sets of leaves to be heated in each chamber, so that when the press is emptied after a pressing operation a set of leaves will be heated, ready for the succeeding operation without delay.

R R represent substantially horizontal rollers located between the chambers H H and the press. These rollers are journaled in vertical racks R¹ R¹, which are raised and lowered by pinions R² on shafts R³. The rollers serve to support the leaves M and facilitate their passage to and from the chambers H H¹, the leaves being of considerable weight. The adjustability of the rollers R enables them to be raised or lowered, so as to operate in connection with either compartment of the chambers H H¹.

P P represent convex plates or surfaces, of smoothly-polished material, interposed between the press-bed and the lower portions of each of the heating-chambers. These plates form bearing-surfaces for the leaves M to slide on as they are taken from and returned to the lower compartments of the heating-chambers. The form and location of the plates P P enable the leaves to be shoved into the lower compartments of the chambers without danger of their surfaces being indented or abraded by striking sharp angles.

The guide-pins E E′, which in my above-named patent are described as being vertically adjustable, are now raised simultaneously in pairs by means of two horizontal shafts, S S, having friction-pulleys *f f* bearing against the pins E E′, and similar friction-pulleys *f′ f′* bearing against said pins on the sides opposite the

pulleys *f f*, as shown in Fig. 2. The rotation of each shaft S raises two of the guide-pins by means of the pulleys *f f'*, the latter allowing the pins to be depressed by the descent of the press-follower. The shafts S S are provided with cranks or hand-wheels W, whereby they are rotated.

The cloth is carried to the press, as in my former patent, by a series of delivering-rollers, D, the cloth being folded around the heated leaves M as it leaves the last roller. In my former patent the cloth was drawn from the rollers by the operation of withdrawing the leaves from their chambers. I have now provided a folder, I, for facilitating the folding operation and preventing the friction on the edges of the leaves caused by the rubbing of the cloth. This is composed of two parallel rollers, I^1 I^2, of sufficient length to extend across the bed of the press. These rollers are journaled in end plates J J, which are provided with a rotary handle, K. The rollers are separated by a space sufficiently wide to easily admit a thickness of cloth. When the cloth comes from the last guide-roller it is passed between the rollers I^1 I^2 of the folder, and as soon as it is confined under a heated leaf, drawn from one of the heating-chambers, the handles K are grasped by two operators, one on each side of the machine, and the folder I is moved along over the leaf just laid, drawing the cloth along over said leaf, and leaving the cloth spread out, ready to be covered by the succeeding leaf, which is taken from the opposite heating-chamber. The folder is then drawn back over the last leaf, and so on, spreading the cloth smoothly over the surface of each heated leaf, and folding it over the edges of the leaves.

This device prevents the cloth from being wrinkled as it is prepared for the press, and obviates the friction of the cloth on the edges of the leaves which was caused by the method of folding described in my former patent, the leaves being laid upon the cloth after it is drawn out, instead of aiding to draw the cloth as before. Moreover, the weight of the rollers, as they are carried beyond the ends of the pile, tends to stretch each layer of cloth as it is spread out, and thus cause it to be compactly folded and lie smoothly upon each leaf.

X represents a series of rollers adapted to remove the cloth from the press, as in my former patent. One of the rollers, U', of this series I adapt to measure the cloth by providing it with a roughened surface, combining with it a dial, V, and two pointers, *w x*. The dial is attached to the frame-work *f*, and provided with two graduated scales, *y y'*, the former indicating yards and the latter inches. The pointer *w* is attached directly to the arbor of the roller U', revolves in unison with it, and, in connection with the scale *y'*, indicates the number of inches measured. The pointer *x* is revolved by gearing Z Z, which is actuated by the rotation of the roller, and is so arranged as to indicate the number of yards measured. The roller U' is rotated by the friction of the cloth passing over its roughened surface, as shown in Fig. 1 by dotted lines.

One of the arbors, *u*, of the roller U' is provided with a device for preventing its backward rotation. This device consists of a loose friction-roller, R^4, located in a tapering recess, R^5, one side of which is formed by the periphery of the arbor, and the other by a recess cut in the bearing, the roller being in rolling contact with the arbor. This space R^5 is narrowest at the bottom, and the diameter of the roller is less than the widest and greater than the narrowest part of the wedge-shaped space.

When the arbor is rotated in the direction of the arrow, Fig. 6, the roller has no effect; but when the rotation is reversed the roller is instantly wedged into the narrow portion of the recess and stops the arbor, thus preventing the accidental backward rotation of the machine-roller.

The recess R^5 and roller R are securely covered, so as to be inaccessible.

This device is adapted to measuring any fabric or material which is made in a continuous length, such as paper, carpeting, &c.

It will be readily seen that by means of these several improvements the operations of heating the leaves, transferring them from the chambers to the press, and vice versa, adjusting the guide-pins with reference to the height of the pile of cloth and leaves, folding the cloth over the leaves, and measuring the cloth are greatly facilitated, and at the same time a great saving is effected in the wear of the leaves M.

Having thus described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. The vertically-adjustable rollers R, interposed between the press A and the heating-chambers H H^1, substantially as described, for the purpose specified.

2. The vertical guide-pins E E', adapted to be adjusted vertically in the bed of the press, in combination with the friction-pulleys *f f'* and shafts S S, whereby said pins are adjusted simultaneously in pairs, substantially as described.

3. In combination, the measuring-roll U', working in a bearing provided with the inclosed recess R^5 and the friction-roller R^4, whereby the backward rotation of the roll is prevented, and the pointer *w*, gearing Z Z, pointer *x*, and dial V, whereby the forward rotations of the roll are indicated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HEBDON.

Witnesses:
C. T. BROWN,
A. E. DENISON.