W. HEBDON.

Cloth-Press.

No. 168,017. Patented Sept. 21, 1875.

Fig. 1.

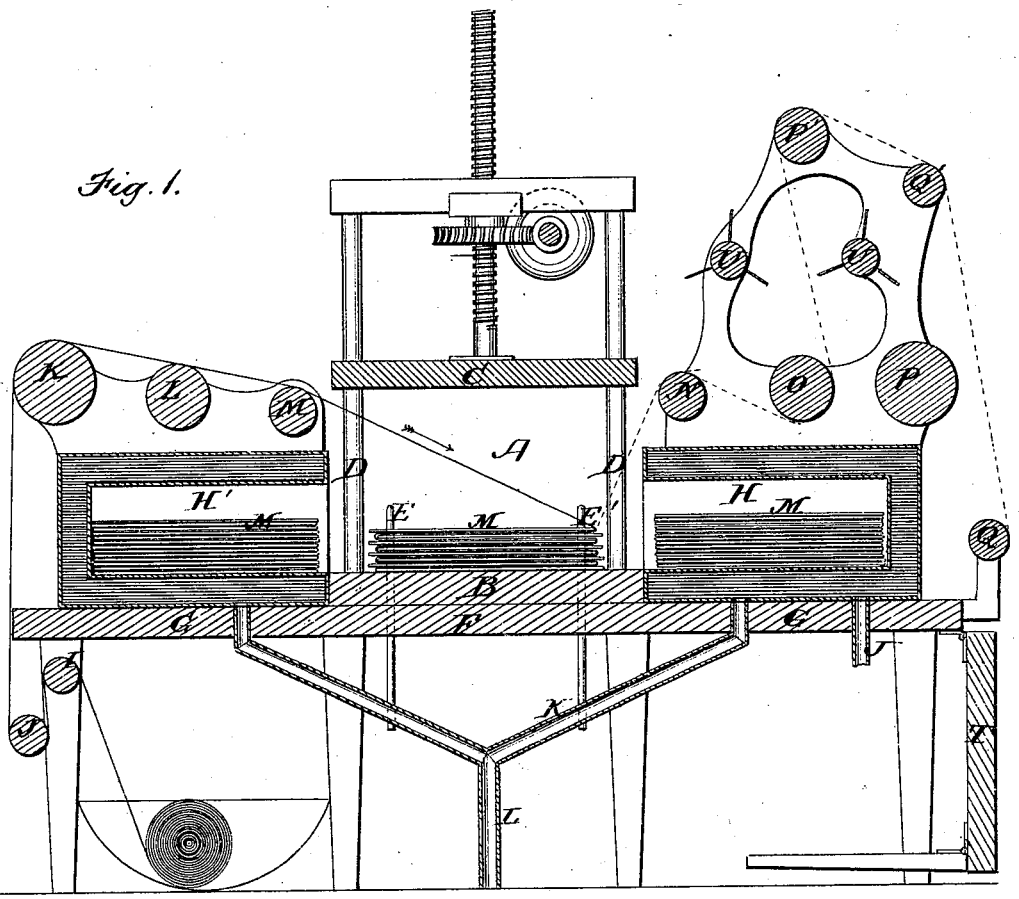


Fig. 2.

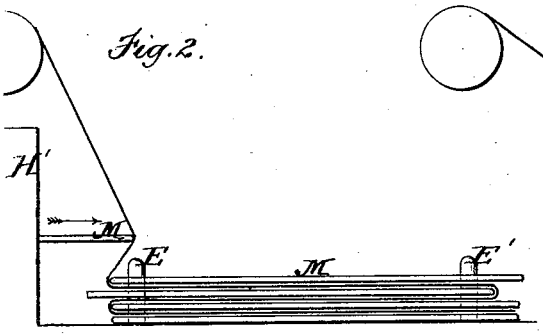


Fig. 3.

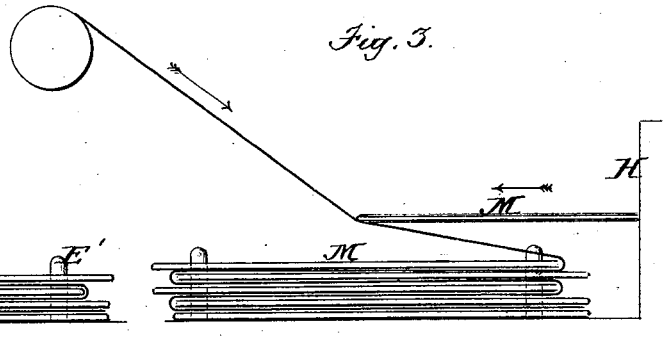
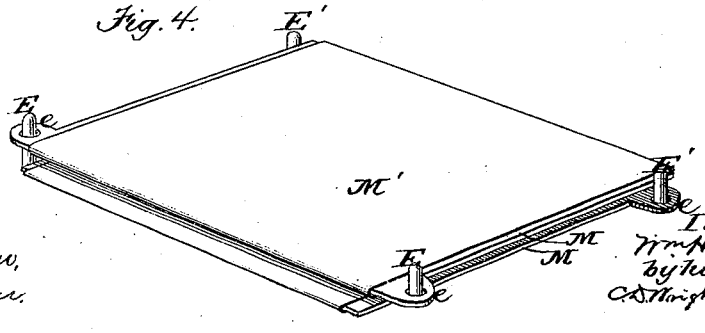


Fig. 4.



Witnesses.
Chas. Felton Pidgin,
Oscar W. Weaver.

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

UNITED STATES PATENT OFFICE.

WILLIAM HEBDON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CLOTH-PRESSES.

Specification forming part of Letters Patent No. **168,017**, dated September 21, 1875; application filed August 13, 1875.

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 an Improved Process and Machine for Pressing Cloth, of which the following is a specification:

In the accompanying drawings forming a part of this specification, Figure 1 represents a longitudinal vertical section of a machine embodying my invention. Figs. 2 and 3 represent views showing the folding operation, and Fig. 4 a perspective view of two of the leaves in the positions they occupy in the press.

My invention relates to the operation of hot or warm pressing woolens in bulk. Heretofore this operation has been performed by placing the cloth in folds in the press, with sheets of cold press-paper between the folds and a heated metallic press-plate at the top and bottom of the pile thus produced, and applying pressure. This process involves much delay, as it is necessary for the heat from the press-plates to permeate the entire pile of cloth and paper while under pressure, consequently the cloth must remain in the press from two to four hours, according to the thickness of the pile, and the heat cannot become thoroughly and evenly diffused through the cloth on account of the unequal distances of the folds in the pile from the heated plates. In this mode of pressing the cloth becomes sharply creased on account of the thinness of the press-paper interposed between its folds.

My invention has for its object to obviate the disadvantages above mentioned, and to facilitate and improve the operation of pressing woolens, &c. To these ends my invention consists, first, in an improved process for papering up and hot or warm pressing cloth, this process consisting in interposing heated leaves composed of press-paper, inclosing a material adapted to retain heat between the folds of a pile of cloth as it is placed in the press and applying pressure, the heated leaves or papers immediately and thoroughly heating the cloth when pressure is applied, and, in consequence of their thickness, preventing the formation of sharp creases in the cloth. My invention consists, secondly, in an improved combination and arrangement of parts in a machine for carrying out my process, all of which I will now proceed to describe and point out in my claims.

In the drawing, A represents an ordinary press having a stationary bed, B, and a follower, C, moving on guides D, and operated by any convenient mechanism in such manner as to be raised and lowered on its guides. The bed B of the press is provided with four vertical guide-pins, E E′, the purpose of which will be explained hereinafter. The bed of the press is located on a platform or table, F, which is of suitable height to enable a workman standing on the floor to conveniently manipulate cloth placed on the bed. G G are extensions of the table F at each end of the bed B, said extensions supporting heating-chambers H H′, one at each side of the press-bed. The chambers H H′ are made with hollow walls, and their sides adjacent to the press are open, as shown in Fig. 2. J represents a pipe which admits steam into the hollow wall or steam-space of the chamber H, the latter being heated thereby. K represents a steam-pipe passing from the hollow wall or steam-space of the chamber H to the similar space in the chamber H′, the steam that heats the former being thus caused to heat the latter. The pipe K is provided with a branch, L, leading out of the apartment in which the apparatus is located, and conducting the surplus steam and the water of condensation away. M M, &c., represent rectangular leaves composed of sheets of press-paper M′, made bulky, and adapted to retain heat by being folded around a body of any suitable material which is a non-conductor of heat, the leaves thus formed being preferably about an eighth of an inch in thickness. These leaves are of such size as to be inserted in the chambers or heaters H H′, and each is provided with two perforated ears, *e*, adapted to be placed over two of the guide-pins E, as will be presently explained. I J K L M represent rollers journaled in bearings rising from the table, and adapted to guide a piece of cloth from a basket or receptacle to the press A, and N O P Q P′ Q′ represent rollers at the opposite end of the apparatus, adapted to guide the cloth away from the press, as will be explained.

The operation is as follows: The leaves M, which may be of any desired number, are placed in two sets in the heating-chambers H H′, as shown in Fig. 2, with the rings or perforations *e* of each set projecting toward the press. Steam is admitted into the hollow walls or steam-spaces of the chambers H H′, and when the plates therein are sufficiently heated the operator removes the upper leaf from one of the chambers and lays it on the bed B of the press, with its ears or orifices *e* inclosing two of the vertical guide-pins.

The cloth to be pressed being carried over the rollers K L M, its end is laid upon the heated leaf, so as to nearly cover it, but not project beyond it onto the bed B. A second heated leaf is then taken from the chamber H, and laid upon the cloth on the first leaf, with its orifices *e* inclosing the guide-pins E. Next a heated leaf is withdrawn from the opposite chamber H′, and as it is drawn over the bed of the press is enveloped in a fold of cloth, and laid upon the first leaf, as shown in Fig. 3, with its orifices *e* over the guide-pins E′. The fourth heated leaf is then taken from the chamber H and laid upon the cloth over the previously laid leaf, and thus the operation is continued, a heated leaf being taken alternately from the chambers H and H′ and interposed between the layers of cloth until the pile is built up to the desired thickness, after which the follower C is pressed down upon the pile, and allowed to remain for about half an hour, when the cloth will be thoroughly heated and pressed. The follower is then raised, and the cloth is removed from the press in any desired manner. I prefer to guide it over the rollers N O P to a folding-table, T, or a winding-roller, Q, these latter parts being interchangeable. When it is desirable to examine or dry the cloth after it is pressed, I conduct it from the roller O over the elevated rollers P′ Q′, the latter being located sufficiently far above the winding-roller Q or table T to expose the cloth to view as it passes from one to the other, as shown by dotted lines in Fig. 2. Fans U U may be provided for cooling or drying the cloth as it passes from the press, as shown in my patent No. 165,576.

It will be seen that by locating the heating-chambers H H′ on opposite sides of the press the operation of interposing the heated leaves between the layers of cloth is greatly facilitated, the act of withdrawing a leaf from the chamber H serving to fold the cloth over the outer edge of the leaf, as shown in Fig. 3, the cloth between the pile and the roller M being left, after the leaf is laid upon the pile, in such position as to be pressed down upon the pile by the withdrawal of the next leaf from the chamber H′, as shown in Fig. 2, hence the cloth requires no handling, the operation of withdrawing the leaves from their chambers performing the folding of the cloth. In other words, each leaf withdrawn from the chamber H bears upon a portion of the cloth intervening between the roller and the pile, and presses this portion upon the pile, leaving the then intervening portion in such position as to be folded over by the succeeding leaf, which is drawn from the chamber H′. The guide-pins E E′, of which two are provided on each side of the bed B, hold the heated leaves by passing through the orifices in the outer edges of said plates, and thus cause the pile to be built up regularly, without the possibility of any leaf becoming displaced. This provision insures the thorough pressing of all parts of the cloth by preventing any of the folds from projecting outside of the pile. The leaves are so constructed that the folding edge of each, when in the pile, shall be located back of the edges of those adjoining, the folding edge being that which is first withdrawn from the heating-chamber, this edge being rounded. The paper surfaces of the leaves enable them to take the place of the ordinary press-papers used in papering up, while the bulk or thickness of the leaves resulting from the interposition of metal or other heat-retaining material between the paper surfaces not only enables them to retain the heat imparted by the chambers H H′, but prevents the formation of sharp creases in the cloth, such as result from the employment of single thicknesses of press-paper.

I do not desire to limit myself to the employment of the described construction or material of the leaves M, or the mechanism for carrying out my improved process, as any arrangement whereby a series of leaves can be heated and interposed between folds of cloth in a press may be employed without departing from the spirit of my invention.

The construction shown, however, constitutes in one machine all the essential parts of a press-shop. The single press, in connection with the heating chambers and plates, takes the place of the several presses usually required in a press-shop in consequence of the quickness of my improved process, several pieces of cloth being enabled to be put through the press in the time required for one operation by the ordinary process.

The bed of the press acts as a folding or papering-up table. The cloth being prepared thereon for the pressing operation, and being guided to and from the press by the rollers, the necessity of lifting it in bulk into and out of the press is avoided.

The follower C of the press may be provided with orifices to receive the guide-pins E E′, when the follower is depressed, or the pins may be adapted to slide in the bed B, so that they will yield to the downward motion of the follower, springs, or other suitable devices, being employed to keep them from falling by their own weight.

I claim—

1. The described process of papering-up and hot or warm pressing cloth, consisting substantially in making a pile composed of single layers of cloth, and heated leaves M, surfaced

with paper, arranged alternately, and subjecting the pile thus formed to the action of a press, substantially as and for the purpose specified.

2. The combination of the press A, leaves M, and heating-chambers H H′, substantially as described.

3. The adjustable guide-pins E E′, in combination with the press A and leaves M, having the orifices *e*, substantially as and for the purpose specified.

4. The heating-chambers H H′, having hollow walls or steam-spaces, in combination with the leaves M.

5. In a machine for pressing cloth, the combination of the press A, heating-chambers H H′, leaves M, delivering and removing rollers and winding-roller Q, or folding-table T, all substantially as specified.

6. The leaves M, composed of press-paper M′, inclosing a body or filling, substantially as described, for the purposes specified.

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

WILLIAM HEBDON.

Witnesses:
A. Y. CONVERS,
C. F. BROWN.