W. HEBDON.

Cloth-Pressing Machine.

No. 160,594. Patented March 9, 1875.

Fig. 1.

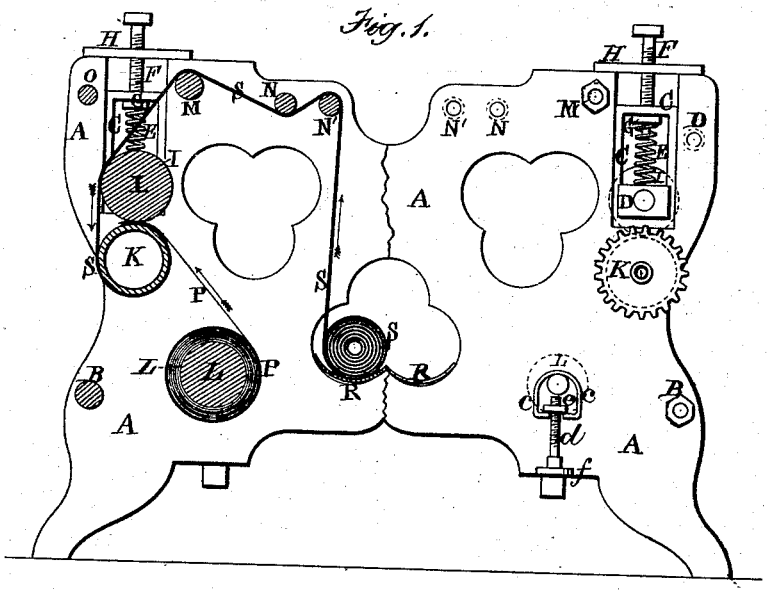
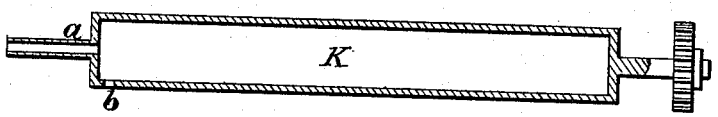


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM HEBDON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CLOTH-PRESSING MACHINES.

Specification forming part of Letters Patent No. **160,594**, dated March 9, 1875; application filed December 15, 1874.

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 Papering-Up and Pressing Cloth, &c., of which the following is a specification:

Figure 1 of the accompanying drawings is a side elevation and central longitudinal vertical section of my invention. Fig. 2 is a central longitudinal section of the cylinder of the same.

The present invention relates to certain new and useful improvements in the means employed for "papering-up" and pressing cloth or other fabric or material requiring such treatment, the main object of these improvements being to economize the time, labor, and expense heretofore required by the use of press-papers, presses, plates, and heating apparatus ordinarily employed for the like purpose, as well as to prevent loss, on account of damage to the material, liable to occur by the usual methods.

To effect these ends my invention consists in a series of mechanical devices arranged and operating, as will be hereinafter more fully explained, to roll up the cloth or other material within a roll of press-paper wound on a cylinder, heated or cooled, according to the requirements of the work, and rotated, by hand or other motive power, below an adjustable spring-pressure roller bearing upon the paper roll and cloth or other material contained therein, so as to expeditiously and evenly press and smoothly finish the cloth or other material without damage to the latter; also, to unwind the paper roll and cloth to allow the withdrawal of the latter from the cylinder, and wind the former on a roller, provided with proper tension-adjustment to regulate the same while the paper is unwound from it, or to release it and allow of its rotation to wind the paper, all of which I will now proceed to describe.

In the drawings, A represents the sides or open frame of a machine, connected by cross-bars or rods B, or made in any suitable shape and manner preferred. The sides A are slotted or otherwise formed in the upper portion of one or both ends to receive or form slotted or open boxes or standards C, in each of which is located a journal or axle box, D, grooved on each side, or otherwise formed or arranged to be held and have a vertical movement in the standard C. Extending upward from the top of each journal-box D is a coiled spring, E, which receives the lower portion of a screw-stem, F, provided within the standard C with a screw-nut, G, that forms an abutment for the spring E. The screw-stems F operate through top plates H, or through the tops of slots formed in the sides A, and through the tops of the standards C, to raise or lower said standards, and adjust and regulate the pressure of a pressure-roller, I, located at the upper portion of one or both ends of the sides or frame A, and whose axles are supported to turn in the boxes D; or the roller I may be otherwise suitably arranged, as preferred, to be raised and lowered, so as to have an adjustable yielding bearing. Below the roller I is located, to turn in the sides A or otherwise, a hollow cylinder, K, having at one end an induction-tube, *a*, or orifice, provided with a suitable faucet or other opening and closing device, for the admission of steam, hot water, or other heating medium, or to admit cold water or other fluid, when necessary, for the cooling of the said cylinder, which cylinder is provided with an eduction-orifice, *b*, or tube, that may be arranged with any suitable faucet or other device for opening and closing it. Below and forward or inward of, or otherwise conveniently situated in reference to, the cylinder, at a proper distance, is located a roller, L, whose ends or axles extend through and turn in the sides A. One or both of the axle ends of the roller L are provided with a tension adjustment or brake to regulate the roller or allow of its release to admit its free rotation. This tension adjustment or brake consists, in the present instance, (although any other suitable device or arrangement of devices for the purpose may be adopted, if preferred,) of a yoke or clamp, *c*, bent segmentally or otherwise to extend over the axle ends of the roller L, and flanged inward on the bottom, or otherwise formed, to receive a screw-stem, *d*, and form a seat for a loose screw-nut, *e*, or otherwise properly arranged to receive and allow the operation of the screw-stem *d*

to abut and bring the yoke against to clamp the axle ends, and to release the same. The screw-stem *d* at the bottom extends through a plate or bracket, *f*, that projects laterally from the side A, and forms an abutment for the head of the screw *d*. Arranged across the upper portion of the frame, to turn in the sides A, are guide rods or rollers N N′, and outward and above these is a guide rod or roller, M. These rods or rollers sustain and guide the cloth S, or other material to be pressed, which is first deposited in a wire or other netting or basket or receptacle, R, curved or otherwise suitably shaped to contain the material, and extending across the lower portion of the frame at or near the center, or otherwise conveniently located. The cloth or other material is then carried up over the roller N′, under the roller N, and over the rod or roller M; thence conveyed under one end of the press-paper P, or other suitable press-finishing material, attached to the cylinder K, the other end of the paper or other roll, P, being wound round the roller L.

The cylinder K and roller L may be arranged with any suitable mechanism or operating devices, to be actuated by hand or other motive power, to rotate them as desired.

The cylinder K, being supplied with the desired heat, is rotated, thereby winding up the press-paper and cloth, or other material, together, while the required pressure is exerted thereon by the roller I, induced and regulated by the tension of the spring bearings or boxes D, which are adjusted, by means of the screws F, to bring the roller I in the proper position in reference to the cylinder K. The increase of the roll on the cylinder K raises the roller I by means of the vertical movement provided for the boxes D in the standards C, so that an even pressure is at all times exerted.

During the winding operation a proper tension is had on the roller L, to prevent the too rapid unwinding of the paper, by means of the clamp or yoke *c*, which is brought to bear on the axle ends by the action of the screw *d* in the nut *e*, the end of the screw abutting on the bottom of the axle, and the nut holding against the flanges or seat of the clamp, so as to retard the movement of and regulate the rotation of the roller L as the paper is unwound from it by the rotation of the cylinder K. By loosening the screw *d* the clamp *c* is readily released, and the roller L allowed a free rotation to wind up the paper from the cylinder K, whose reverse rotation unwinds the paper, together with the cloth or other material, which latter is withdrawn therefrom over a guide rod or roller, O, and deposited on a table or bench, or otherwise, as desired.

If desired to suddenly cool off the cylinder K, the steam or hot water, &c., may be allowed to escape through the eduction-orifice, and cold water admitted through an induction-orifice.

By means of two or more sets of the devices hereinabove described arranged on one frame, or otherwise conveniently located, one set may be operated while the other is cooling off or finishing, thereby preventing any waste of time, it taking about the same length of time for the cooling and finishing as for the winding process.

It is well known to manufacturers that it is of little or no use to press woolens, &c., unless they are first papered-up. A variety of methods have hitherto been employed for pressing and finishing cloth, &c., such as, for example, screw-presses, hydraulic presses, hollow press-plates, to admit steam after the papering-up of the cloth, and its insertion in a press; but all requiring the papering-up of every piece of cloth, or other material, used, necessitating the use of a press-paper on the back and face for, say, every yard, or about sixty papers in each piece. Thus prepared, the cloth was deposited in a press between heated iron plates, usually, and left over night. The next morning, in most cases, the cloth was changed to shift the papers, in order that the outside crease, made by the pressure on the folds of the cloth, should be pressed out, and a uniform pressure produced. This pressure occupies about another day, and, in many instances, with a certain description of cloth, a sharp crease is caused in the cloth by the edge of the paper, for which damage a deduction in the sale of the goods has to be made.

These methods are objectionable, as will readily be seen, on account of the expense of the materials, and the great expenditure of time and labor required in the operation, as well as from the loss occasioned by the damage to the goods.

These objections are obviated by my improvements, which dispense with the use of the numerous press-papers, presses, press-plates, and apparatus for heating press-plates, as ordinarily used, by winding the cloth or other material in a roll with and between the press-paper, as hereinabove described, thus uniformly and smoothly pressing and preventing any creasing of the goods, and saving the amount heretofore deducted for damage.

By my improvements, eight pieces of three-fourths goods can be papered-up, hot-pressed, and finished, with any amount of luster, by two men in an hour. And by a double set of devices arranged at either end of the frame, and tended alternately by two men, two pieces of three-fourths goods may be papered-up and hot-pressed every fifteen minutes, the pressing being done on one end while the papering-up is being performed at the other end.

The supply of heat may be regulated according to the requirement of the goods; and if the cylinder requires to be cooled off suddenly, as is sometimes necessary, cold water or other cooling medium may be readily admitted thereto.

Moreover, by my improved method six-fourths goods are pressed in open width, which allows a saving on the average of three-fourths

of a yard in every piece, where the cloth is cut in a single width, by the uniform pressure produced by the rolling of, instead of folding, as heretofore, the goods with the paper, which rolling prevents any creasing of the cloth or other material.

By the ordinary method, six-fourths goods are cut in the double, thereby losing one inch in width on an average throughout the piece, on account of the crease.

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

In a cloth pressing and papering machine, the combination of the accumulating-cylinder K and yielding pressure-roll I, with the basket R, and guide rods or rollers M N N′, adapted to supply and guide the cloth to the accumulating-cylinder, and the roller L, having the adjustable brake or yoke *c*, adapted to supply paper to the accumulating-cylinder, the brake creating the necessary tension, all being arranged and operating substantially as and for the purpose set forth.

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

WILLIAM HEBDON.

Witnesses:

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C. F. BROWN.