2 Sheets—Sheet 1.

E. GESSNER.

Machine for Pressing Cloth.

No. 206,718. **Patented Aug. 6, 1878.**

Fig. 1.

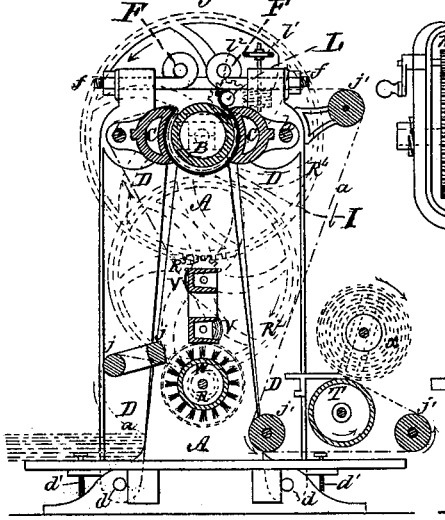


Fig. 2.

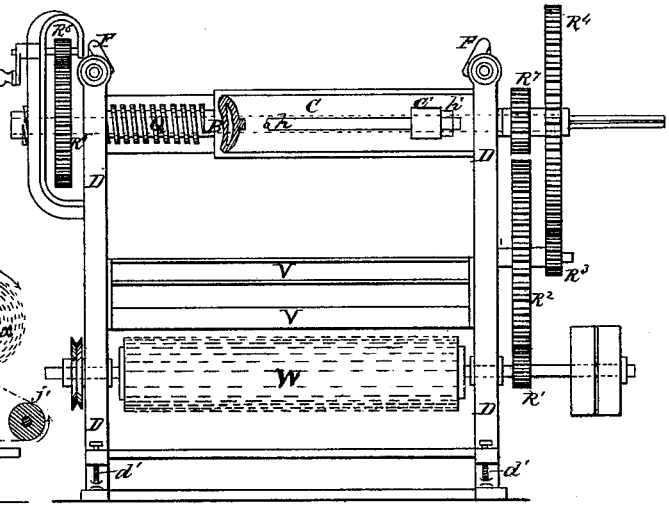


Fig. 3.

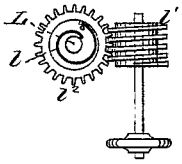


Fig. 4.

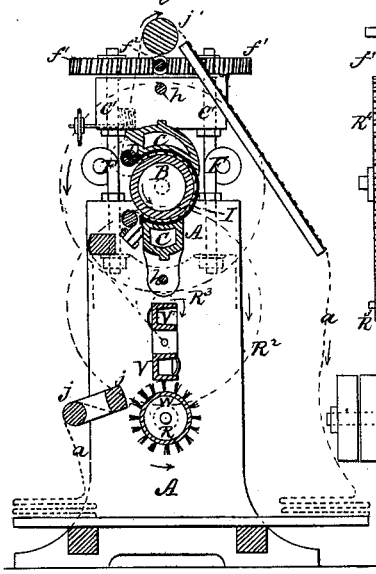
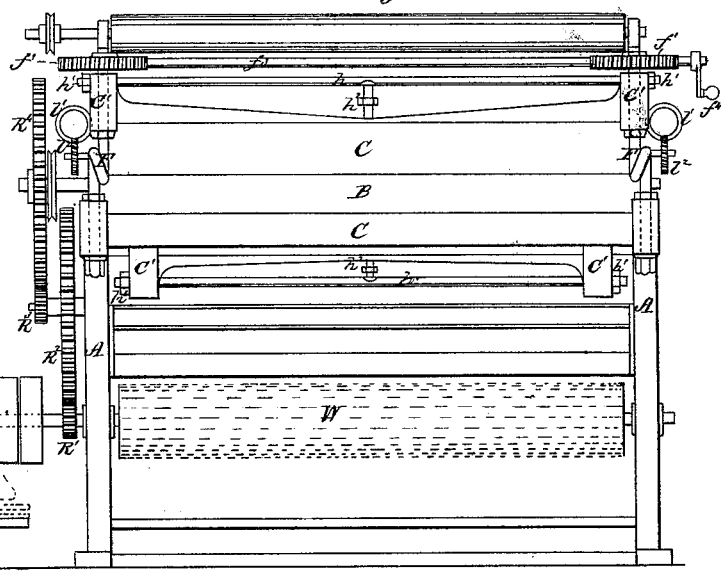


Fig. 5.



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2 Sheets—Sheet 2.

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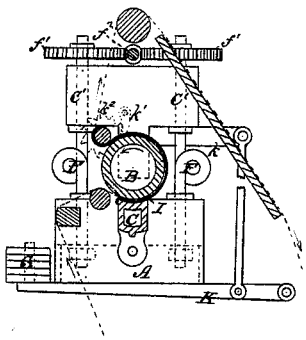
Machine for Pressing Cloth.

No. 206,718. Patented Aug. 6, 1878.

Fig. 6.



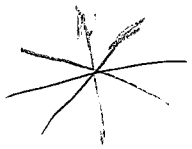


Fig. 7.

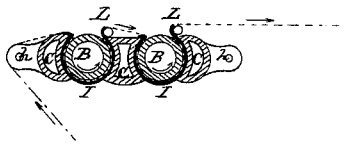
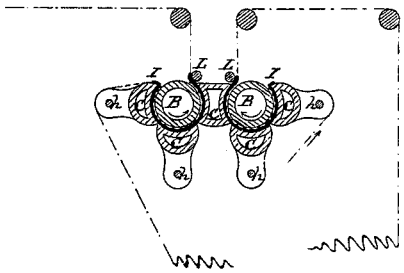


Fig. 8.



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UNITED STATES PATENT OFFICE.

ERNST GESSNER, OF AUE, SAXONY.

IMPROVEMENT IN MACHINES FOR PRESSING CLOTH.

Specification forming part of Letters Patent No. **206,718**, dated August 6, 1878; application filed January 19, 1878.

To all whom it may concern:

Be it known that I, ERNST GESSNER, of Aue, in the Kingdom of Saxony, have invented a new and Improved Machine for Pressing and Finishing Woven Fabrics; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to improved machinery for hot-pressing and finishing woven, felted, and other fabrics, and made-up articles, such as collars and wristbands.

The invention is an improvement upon that general form of machine in which a hollow steam-heated press-box smooths and presses the cloth between its curved inner surface and the periphery of an adjacent cylinder.

The improvement consists, mainly, in combining, with the press-box and cylinder, a press-plate made of sheet metal, attached upon one side to a press-box, and passing nearly around the periphery of the cylinder in close proximity thereto, and attached at its other edge to a shaft made axially adjustable, to roll up and regulate the pressure or degree of construction of the said curved press-plate around the cylinder.

The improvements also consist in the combination, with said press-plate, of diametrically-opposed press-boxes, and the means for adjusting their pressure upon the cylinder, as hereinafter more fully described.

Figure 1 represents a vertical section, and Fig. 2 a front elevation, of a machine having a single cylinder and two pressing-boxes, one on either side, and a sheet-metal pressing-plate encircling the cylinder. Fig. 3 shows a detail. Fig. 4 is a vertical section, and Fig. 5 a front elevation, of a machine with a single cylinder, a sheet-metal pressing-plate, as before, and two pressing-boxes, one above and one below the cylinder. Fig. 6 represents a vertical section of a machine with a single cylinder and pressing-box and a sheet-metal plate encircling the cylinder. Fig. 7 shows a cross-section of a machine with two cylinders on the same horizontal plane, with a double pressing-box between them, acting on both, and single pressing-boxes at either side, connected to the intermediate double pressing-box by sheet-iron plates encircling the cylinders, this arrangement being adapted for applying a repeated and extra powerful pressure on one or on both sides of the fabric, which thus receives a better luster; Fig. 8, the cross-section of a similar machine, with the addition of pressing-boxes beneath the cylinders, this arrangement being intended for pressing two pieces of goods at once.

Similar letters of reference indicate similar parts in the different figures.

A represents standards supporting bearings, in which the journals of the pressing cylinder or cylinders B are mounted. C are the pressing-boxes, which, at either side of the cylinder or cylinders, are carried by pairs of arms, D, movable on pivots *d* at their lower ends, and adjusted horizontally by means of screws *d'*. The boxes C are made to press by means of weights, springs, hydraulic or other power, acting directly or through levers or otherwise. In Figs. 1 and 2 the arms D are connected by strong springs F, whose tension is regulated by nuts *f*.

The pressing cylinder or cylinders B may either be of cast-iron and hollow, and either heated or cold, or they may be made solid and of pasteboard when the pressure is equal on both sides. If of metal, the surface is preferably covered with felt. The pressing-boxes C are curved to correspond to the cylinder against which they are applied. They are here shown hollow and made of cast-iron, and are ordinarily heated by steam.

One of the boxes—that with which the fabric is last in contact—is cooled with cold water or otherwise, according to the effect required. For woolen fabrics it is found most suitable to heat the first box and cool the last of the series, so that the fabric is thus cooled under pressure. The boxes may also be heated by means of gas, petroleum, or other combustible. In order to prevent the boxes from bending outward at the center, they are trussed by rods *h*, secured by nuts h^1 in lugs C', formed on the backs of the boxes, whereby sufficient tension is maintained to keep the boxes up to their work, h^2, Fig. 5, being a screw for regulating the tension to suit any degree of pressure.

To prevent the fabric being damaged during its passage between the pressing-cylinder B and the boxes C, a thin sheet of metal, I, is applied between the latter and the fabric. This

sheet of metal is attached on one side to the one box C, and on the other to the tension-shaft L, acted on by a coiled spring, *l*, at each end, regulated by a worm and wheel, l^1 l^2, as shown in Fig. 3. The sheet of metal may also be kept in tension by any other means. In Fig. 6 a weighted lever, K, is caused to act on shaft L through a rod jointed to lever *k*, pawl k^1, and ratchet k^2. The machine shown in the latter figure has a single cylinder and pressing-box, and is intended for use when but slight pressure is required. In this case the shaft L is made of larger diameter, and also serves as a support for the cylinder B against the pressure of the box C, the sheet metal I inclosing the cylinder and fabric.

The pressing-cylinder in all cases receives motion from the driving-shaft W by gear-wheels and pinions R^1 R^2 R^3 R^4, and the second cylinder (shown in Figs. 7 and 8) is driven from the first one by gears of equal diameter or otherwise.

The driving-shaft W may also carry a brush-cylinder, as shown in Figs. 1, 2, 4, and 5. The fabric to be pressed is first folded and placed upon the bottom board, (see Figs. 1 and 4,) and is then led upward, as indicated by the dotted lines *a*, over the guide *j*, brush-cylinder W, and cross-bars V, over one of the pressing-boxes C, then around the cylinder B, thence over the guide-rollers *j'*, down to the bottom table, on which it is again folded, as in Fig. 4; or the fabric, on leaving guides *j'*, may be wound, as shown in Fig. 1, on a roller, *x*, by contact with a drum, T, which is driven by the wheel R^7 on the cylinder B. The length of the fabric may at same time be measured by suitable mechanism.

For pressing goods having selvages of different widths, there is a depression made at one end of the cylinder B, and on the opposite face of the pressing-boxes C, corresponding to the thickness of selvage, and the cylinder B is capable of being adjusted in the direction of the width of the cloth, the shaft of said cylinder and journals of the pressing-boxes being made of sufficient length for the purpose. The shaft of cylinder B has also a longitudinal keyway or groove at one end to receive a feather, by which it is enabled to be shifted in its bearings, and in the gears R^4 and R^7, (see Fig. 2,) and still receive rotary motion in all positions. The shaft at the opposite end of the cylinder simply slides in its bearings. The bearing Q is screw-threaded on its exterior to receive a nut, by which the position of the bearing is regulated through a toothed wheel, R^5, attached to the nut, the wheel being driven by a pinion, R^6, and winch-handle, (see Fig. 2;) or, instead of being screw-threaded, the bearing may have a rack upon it, and be shifted by means of a pinion.

Having thus described my invention, what I claim as new is—

1. A cloth finishing and pressing machine consisting, essentially, of a revolving cylinder, a press-box, and a curved sheet-metal press-plate, attached at one side to the press-box and passing partially around the cylinder, and attached at its other edge to an axially-adjustable shaft, all combined substantially as and for the purpose set forth.

2. The combination, with a single cylinder, of diametrically-opposed press-boxes and the curved sheet-metal press-plate, arranged as described, to continue the smooth passage of the cloth from one to the other of the press-boxes, as set forth.

3. The combination, with a pair of cylinders, of two oppositely-placed press-boxes and an intermediate double press-box, together with the curved sheet-metal press-plates I, as and for the purpose described.

4. The combination, with the cylinder B and press-plate I, of the pivoted vertical bars D D, carrying press-boxes C C, the springs F, and nuts *f*, substantially as shown and described.

The above specification of my invention signed by me this 3d day of December, 1877.

ERNST GESSNER.

Witnesses:

ALFRED NOEROLD,

BERNARD FAREDE.