2 Sheets—Sheet 1.

E. GESSNER.

Machine for Pressing and Finishing Woven Frabics.

No. 221,047. **Patented Oct. 28, 1879.**

Fig. 1.

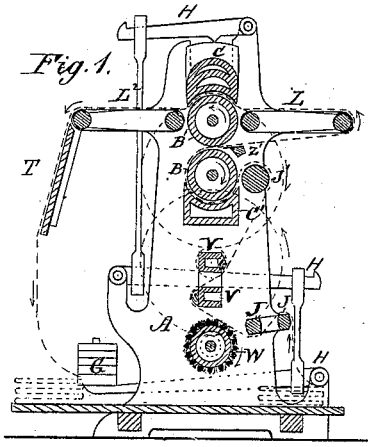


Fig. 2.

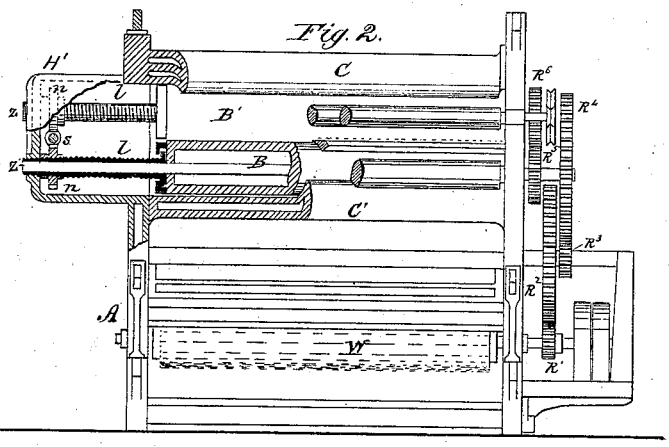


Fig. 3.

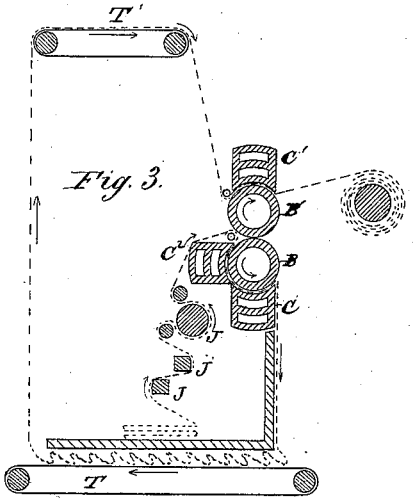


Fig. 4.

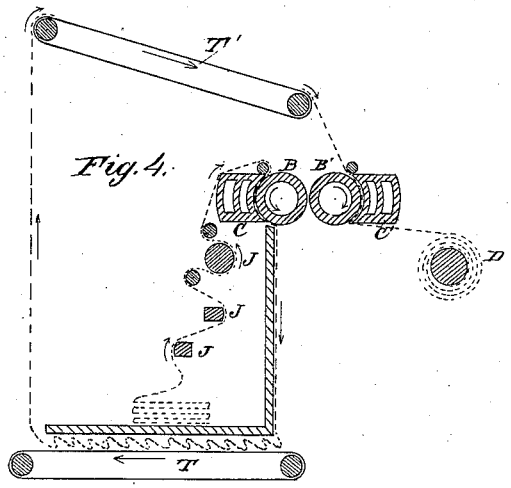


Fig. 5.

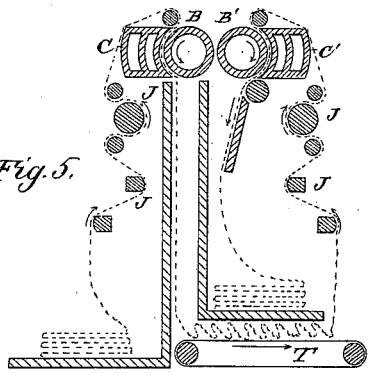
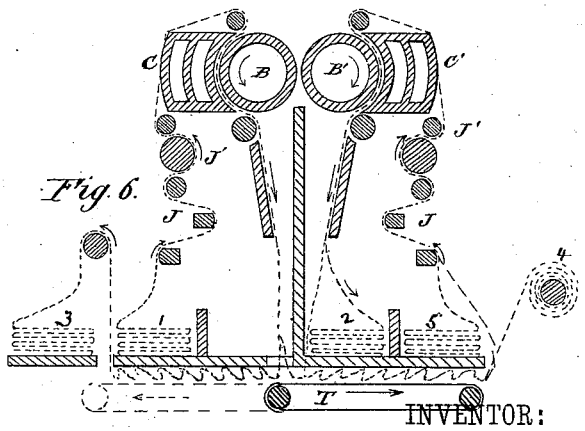


Fig. 6.



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2 Sheets—Sheet 2.

E. GESSNER.

Machine for Pressing and Finishing Woven Frabics.

No. 221,047. Patented Oct. 28, 1879.

Fig. 7.

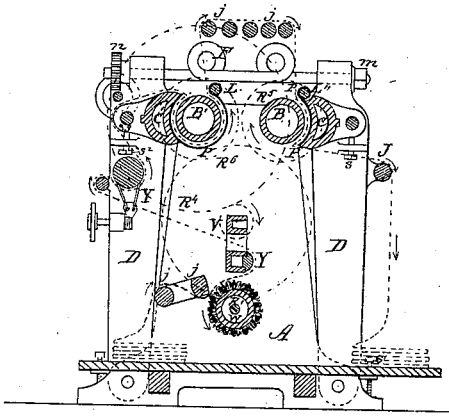


Fig. 8.

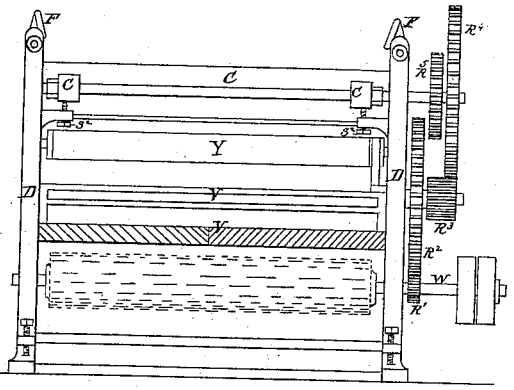


Fig. 9.

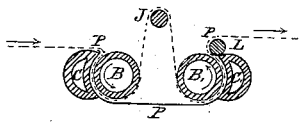


Fig. 10.

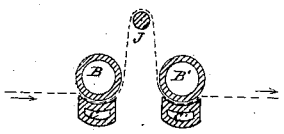


Fig. 11.

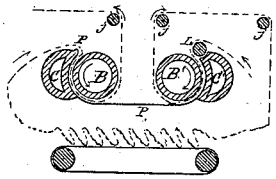


Fig. 12.

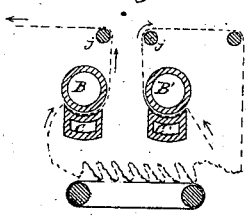
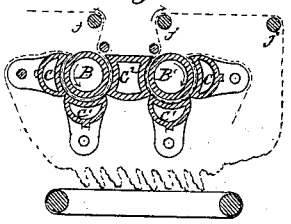


Fig. 13.



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INVENTOR:

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UNITED STATES PATENT OFFICE.

ERNST GESSNER, OF AUE, SAXONY, GERMANY.

IMPROVEMENT IN MACHINES FOR PRESSING AND FINISHING WOVEN FABRICS.

Specification forming part of Letters Patent No. **221,047**, dated October 28, 1879; application filed June 17, 1879.

To all whom it may concern:

Be it known that I, ERNST GESSNER, of Aue, in the Kingdom of Saxony and Empire of Germany, 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.

My invention relates to a machine for hot-pressing cloth, in which the cloth is made to pass between a hollow press-box heated by steam and an adjacent pressing-cylinder.

My improvement consists in the combination, with two or more cylinders and corresponding press-boxes arranged to give a repeated pressure upon one side, or successive pressures upon opposite sides, of the cloth, of a carrier-belt, roller, or equivalent device, adapted to receive the cloth from one press-box and prolong its travel in its passage to the next press-box, whereby a sufficient time is allowed for the goods to become cooled before receiving the second hot-pressing, as hereinafter fully described.

In constructing the machines in accordance with my invention they may be arranged in various ways.

In Figure 1 is shown a vertical cross-section, and in Fig. 2 a front view, of a press, with cylinders B and B′ and pressing-boxes C and C′ lying one above the other. The boxes C and C′ and cylinders B and B′, being mounted in the main standard A, receive their pressure by weight G through the lever combination H H, acting upon the top pressing-box, C.

The two pressing-cylinders B and B′ are arranged to be moved endwise for pressing goods with selvages of different widths and styles, and this movement is accomplished as follows: The shafts *z z* of the cylinders B and B′ run on one side of the machine in long sleeve-bearings *l l*, which are provided with screw-threads upon their outer surfaces. Around these sleeve-bearings are the worm-gears *n n*, which receive motion by a worm, *s*, by means of a handle, and thus change both pressing-cylinders B and B′ lengthwise. The worm-gears *n n* and the sleeve-bearings *l l* are mounted beneath a cover, H, which is combined with the main standard A. Instead of adjusting the cylinders B and B′, the pressing-boxes C and C′ can be made movable. The pressing-cylinders are driven from the brush-cylinder shaft W by the gears R′ to R⁶.

The cloth runs over the stretchers J J, brush W, the cross-bars V V, and the roller J′ toward the lower pressing-box, C′, around the lower pressing-cylinder, B, and between it and the upper cylinder, B′; then the goods are held by the support *z′* toward the apron L, and are led, while cooling off, over that apron, and pass between the upper box, C, and cylinder B′ to receive a second pressure. After the cloth is finished here it goes over apron L², and is folded by the folder T at the bottom board of the machine.

In Fig. 3 are two cylinders, B and B′, and two boxes, C and C′, mounted one above the other, and on the lower cylinder, B, one more pressing-box, C″, is applied to one side.

Figs. 4 and 5 represent two cylinders, B and B′, and two pressing-boxes, C and C′, upon the opposite outside surfaces of the two cylinders, the cloth running in the direction of the arrows, similar to that shown in Fig. 3.

The goods, lying folded upon the bottom board, run over the different rollers and cross-bars J J, pass the entering cylinders B and boxes C, to receive the first one-sided pressure, then drop, to be well cooled off, upon an endless apron, T, which is fastened beneath the bottom board of the machine. Now, the cloth goes in Figs. 3 and 4 up to another apron, T′, from there to the second cylinder, B′, and second box, C′, and thence to the receiving-roll D. In Fig. 5 it passes around cross-bars and rollers J J, up to the cylinder B and pressing-box C, then down to the endless apron, and then up around rollers and cross-bars to the cylinder B′ and box C′, and thence down to the folding-board.

In Fig. 6 the cloth passes from the folds 1, on the platform at the left, up to the press-box C and cylinder B, thence down below the platform to the belt or apron T, to be cooled off, then up upon the extreme right of the machine, through the stretchers and rollers J J′, to press-box C′ and cylinder B′, and finally down upon the platform again at 2. This construc-

tion possesses the incidental advantage of being capable of pressing two separate pieces of cloth (upon one side only, however) at a time.

Thus by shifting the carrier-belt to the left, as shown in dotted lines, one piece of cloth may pass up from 1, on the left of the platform, to the pressing device, and then descend to the belt, (shown in dotted lines,) and pass thence to a roller, and be folded at 3 on a board to the extreme left; or, instead of being folded on the left, the position of the apron T may be unchanged, as shown in full lines, and the same cloth wound on a beam, 4, on the extreme right. The other piece of cloth may rise from the platform at 5 on the right, and, after passing through the stretcher and rollers J J′ and the cylinder and press-box B′ C′, descend therefrom upon the platform again, as at 2, or upon the belt T, to be wound on roller 4″.

Fig. 7 shows a vertical cross-section, and Fig. 8 a front view, of a further modification. The goods run to the first box, C′, and pressing cylinder B′, around which a metal pressing-plate, P, is bent, as described in my patent No. 206,718, and which plate is tightened by tension-shaft L. Between this plate and the cylinder B one side of the goods is pressed; then the cloth goes, to be well cooled off, over a set of rollers, J′ J′, or over an apron toward the second cylinder, B, and box C, which are also provided with a metal pressing-plate, being fastened on one end to the lower part of the pressing-box C′, and tightened by tension-shaft L″. Finally, the cloth passes over the leader *j* to be folded on the bottom board.

Both cylinders B and B′ receive motion from the brush-cylinder shaft W by the gears R′ to R⁶. The boxes C and C′ are mounted in the lever-arms D D, and are pressed against the cylinders B and B′ by the tension-springs F.

In Fig. 9 a continuous press-plate, P, connects the two boxes, and an intermediate roller (which is the equivalent of the apron) diverts and prolongs the passage of the cloth to allow it to become cooled before going to the next pressing-box.

In Fig. 10 a similar arrangement of the cooling-roller J is preserved between two cylinders and simple subjacent press-boxes.

Fig. 11 shows a machine with two cylinders, B and B′, each with their pressing-box C and C′, combined with a metal pressing-plate, P, which receives tension by means of the tension-shaft L, the cloth being cooled by an endless apron below.

Fig. 12 shows two cylinders, B and B′, and two pressing-boxes, C and C′, below them, the cloth being cooled by an apron beneath them.

Fig. 13 represents two cylinders, B and B′, having a double-acting box, C″, between them, one pressing-box, C, on each opposite side, and one box, C′, below each cylinder B and B′, with a cooling-apron below.

The cloth moves in the direction shown by the arrows, and the goods pass from one cylinder, B, over the leaders *j j* toward the other pressing-cylinder, B′.

From the foregoing description it will be seen that in each case I have two pressing-facing operating consecutively upon the cloth with an endless apron, roller, or series of rollers interposed in the path of the cloth from one pressing-face to the other, to prolong the travel of the cloth between the pressing operations, and thus cool it before it is hot-pressed a second time.

When only one or more rollers without an apron is used, as in Figs. 7, 9, 10, the said rollers may be made hollow, and a current of cold water passed through the same to operate, in conjunction with the prolonged travel of the cloth, to cool it and cause it to set before receiving the second pressing.

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

1. The combination, with a pair of cylinders and press-boxes for giving a repeated pressure to the cloth, of a carrier-belt, or its equivalent, as described, adapted to prolong the passage of the cloth in its travel from one to the other cylinder, to permit it to be cooled before receiving the second pressing, substantially as described.

2. The combination, with a pair of cylinders and press-boxes, arranged substantially as described, of a cooling device adapted to operate upon the cloth in transit from one press-box to the other, to cause the cloth to set before receiving the second pressing, as described.

The above specification of my invention signed by me this 18th day of December, A. D. 1878.

ERNST GESSNER.

Witnesses:
ALFRED NOEGOLD,
C. LENK.