S. ROGERSON.

Embossing-Machine.

No. 169,295. Patented Oct. 26, 1875.

Fig. 1.

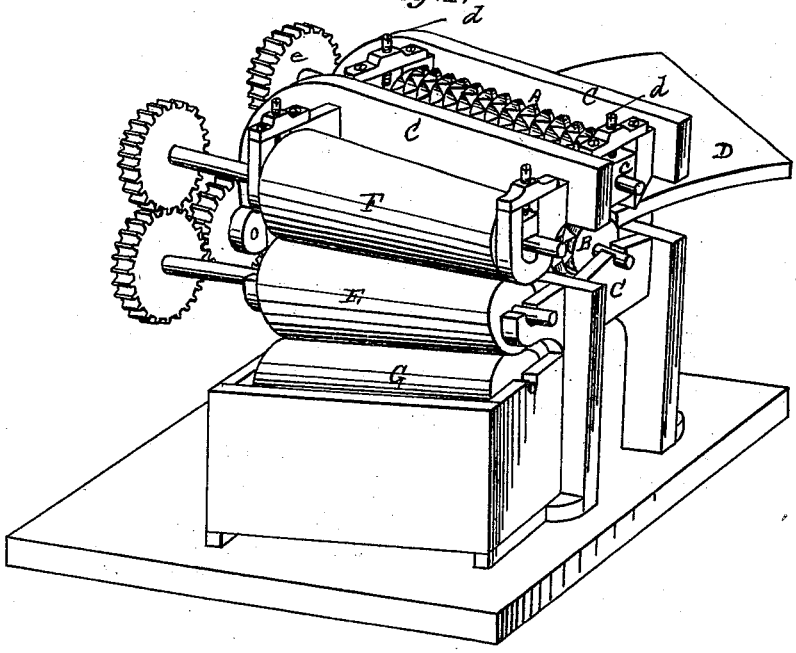
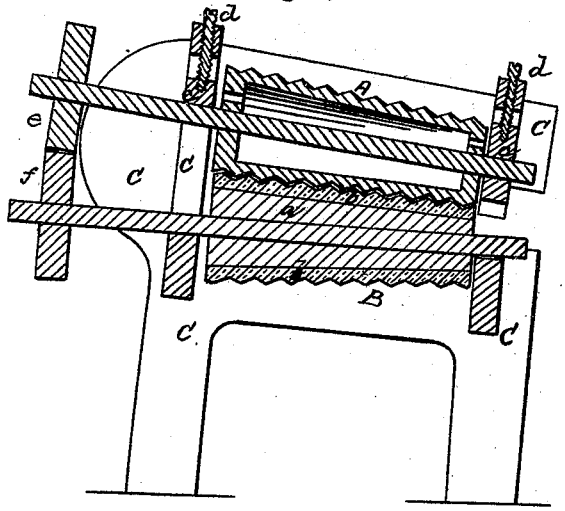


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL ROGERSON, OF NEW YORK, N. Y., ASSIGNOR TO LOUIS DRYFOOS, OF SAME PLACE.

IMPROVEMENT IN EMBOSSING-MACHINES.

Specification forming part of Letters Patent No. **169,295**, dated October 26, 1875; application filed September 4, 1875.

To all whom it may concern:

Be it known that I, SAMUEL ROGERSON, of city, county, and State of New York, have invented certain new and useful Improvements in Embossing-Machines, of which the following is a specification:

These improvements are directed to machinery designed with reference to embossing fabrics in imitation of quilting, said fabric, so embossed, being specially designed for use as a border for felt skirts. Goods designed for this use are cut in conical form to fit the conical bodies of the skirt, to which they are afterward applied.

Sometimes the border, instead of being made separate from the skirt, is formed thereon by applying to the lower portion of the skirt a border consisting of a facing such as above mentioned, united to the skirt by some suitable adhesive material.

This embossing work has heretofore been done by means of dies or blocks engraved with the requisite pattern, the imitation quilting being produced by pressing the fabric between the said dies or blocks. This operation is defective in many particulars. It is necessarily slow and tedious, and, at the best, produces imperfect work.

To reproduce upon the fabric the sharp, well-raised, and well-defined figure requisite in order to make a successful imitation of quilted work, it is necessary to concentrate the pressure upon but a very small part of the fabric at a time. To attempt to press an extended surface, as must be done when dies or blocks are used, gives to the work a dull, unfinished appearance, which detracts from its value, and makes it evident that it is but an imitation of the thing it professes to be. This is especially true when, as is now generally the case, the material to be embossed is composed of a backing of felt, Canton flannel, or like material, with a facing or covering of light goods—such as satinet or "farmer's satin"—pasted upon it.

To remedy these and other difficulties is the object of my improvements.

Instead of dies I make use of rolls, each of which is formed with the desired pattern, the pattern on the one being the reverse of that on the other, so that the projections of the one will work into the depressions of the other. These rolls, on account of the cut or shape of the goods which are intended to pass between them, are of conical or tapering form. To this feature, however, I make no separate claim. One of the rollers is an engraved metal roller, designed to be heated by gas, steam, or other suitable means. The other roller has a metal or other suitable body, but has an exterior of paper or equivalent material, which, in the first instance, is put on in a comparatively soft condition, forming a smooth and even surface for the roll, in which is subsequently formed the reverse of the engraved pattern on the metal cylinder or roll by revolving these rolls in unison, and causing the metal roll to bear, during this movement, with a heavy pressure upon the other roll, by which means, in the course of one, two, or three days, the "paper roll," as it may be termed, is impressed with a sharp, perfectly-defined pattern—the exact reverse of the engraved pattern on the metal roll.

My improvements, however, can best be explained by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of a machine embodying my improvements. Fig. 2 is a transverse vertical section of the same in plane of the axes of the two embossing-rolls.

A is the conical or tapering metal roller, and B is a roller of similar form and size, having a body, *a*, of wood, metal, or other suitable material, with an exterior coating, *b*, of paper, or other substance its equivalent for the purpose, of proper thickness. In this latter portion of the roller is formed, in the manner above described, the reverse of the pattern on the metal cylinder. This surface *b* is quite indispensable to the production of perfect work. It takes a perfect impression of the engraved pattern. It is not appreciably elastic, and yet is a little yielding, and not so absolutely rigid as a metallic surface. All these qualities are essential to enable it to properly coact with the metal roller. These rollers are arranged one over the other, and are provided with journals, which are supported in proper bearings in the machine-

frame C, which is open on one side after the fashion of fluting-machines. The two rolls are designed to be adjustably held together, in order to regulate at pleasure the pressure on the material passing between them. To this end the journals of the upper roll are supported in vertically-movable boxes *c*, which can be set up or down by adjusting-screws *d*.

The metal roll is hollow, and is designed to be heated by suitable means, as by gas or steam. This is essential in order to fix or set in the goods the raised pattern impressed thereon by the quilting or embossing rolls, the prepared material, when passing through the machine, being still slightly moist by reason of the operation of pasting the two thicknesses of goods together.

The two rolls revolve in unison, and are positively rotated by gearing *e f*.

The goods are fed in at the front of the machine from a table, D.

I sometimes combine with the embossing-rolls printing-rolls, which print along the lines of the imitation quilting, in imitation of stitches made with a thread of any desired color. Such an arrangement is represented in the drawing. I is the printing-roll. F is the pressure or blanket roll, and G the inking-roll. The printing-roll and pressure-roll are conical or tapering—preferably the same size as the embossing-rolls; and the printing-roll is engraved with a suitable pattern to imitate stitches, registering with the pattern on the embossing-rolls. The goods, as they leave the embossing-rolls, pass to the printing-rolls.

This arrangement for printing may be found convenient; but it is not an indispensable adjunct to the machine.

In conclusion, I would state that I am aware a conical impression or embossing roll has been used in conjunction with an elastic pressure-roll. This I do not claim.

What I claim, and desire to secure by Letters Patent, is—

The described combination for the production of imitation quilting of the two conical embossing-rolls, the one an engraved metal roll, arranged to be heated, the other having an exterior of paper, or its equivalent for the purpose, impressed with the reverse of the pattern on the metallic roll, the two being constructed, supported, adjustably held together, and arranged to be revolved positively in unison, as and for the purposes herein shown and set forth.

In testimony whereof I have hereunto signed my name this 2d day of August, A. D. 1875.

SAMUEL ROGERSON.

Witnesses:

DANL. T. ROBERTSON,

JULIUS W. JAUSLAWSKI.