E. S. HARDING.
Plaiting-Machine.

No. 210,605. Patented Dec. 10, 1878.

Fig. 1.

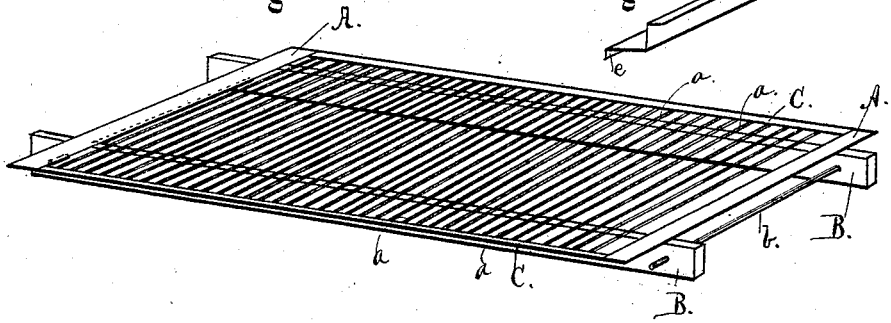


Fig. 2.

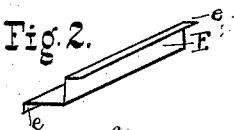
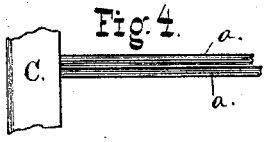


Fig. 3.

Fig. 4.



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IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **210,605**, dated December 10, 1878; application filed March 19, 1878.

To all whom it may concern:

Be it known that I, EDWARD S. HARDING, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Plaiting-Machines; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of the device; Fig. 2, a similar view of the knife or folder; Fig. 3, a section of the side of the frame, showing the mode of attaching the needles; Fig. 4, an enlarged plan view of a portion of the same.

The design of my invention is to afford a device for forming plaits in textile fabric with great facility and dispatch; and it consists in certain details of construction and combinations of parts, as hereinafter fully set forth and claimed.

The device consists of a rectangular frame having ends A A and sides C C of folded sheet metal, and crossed by needles *a a*. In constructing the device, ordinary steel knitting-needles are laid in pairs, as shown in Figs. 1 and 4, their ends being inserted into the fold of a strip of sheet metal, C, bent as illustrated in Fig. 4, and there secured by soldering. Similar strips A A are soldered at the ends, completing the frame.

A pair of parallel bars, B B, are joined by rods *b*, which pass with some little friction through holes in one of the bars, admitting of the adjustment of the bars to or from each other.

A knife or folder, E, is provided, consisting of a suitable piece of sheet metal, bent thrice at right angles, as shown, and having the bent edges *e e* of different depths.

In using the device, the bars B B are adjusted to about the width of the fabric to be plaited. The frame A C is then placed upon the bars, and the fabric being laid thereupon is pressed by means of the knife E between the bars *a*, the width of the knife-edge *e* determining the depth of the plaits. When the frame is full it is inverted, and, being laid upon a table or other suitable support, a damp cloth is laid over the plaits, which are then ironed in the usual manner to fix them.

Certain results flow from the use of the described device which have heretofore been unattainable with the plaiting-machines in ordinary use.

Before describing them, I will state that I am aware that it is not new to form plaits by pressing a textile fabric between bars in the manner I have described. In general, in machines of this class, the bars or slats have been made of flat or sheet material, and necessarily of great width, in order to give them the desired stiffness. Being cut from sheets, the edges of the slats were quite sharp or rough, and caught the material being plaited, causing considerable delay in forming the plaits. This difficulty I obviate by using ordinary round steel knitting-needles, laid in pairs, as shown, thus securing smooth edges, over which the cloth passes, and sufficient stiffness to prevent the cloth from sagging the needles as the plaits are formed.

The needle-frame is perfectly flat, and being devoid of the usual side pieces, the iron for fixing the plaits may be passed over them in the direction of their length—a feature of especial advantage in fixing box-plaits, as will be readily understood.

Furthermore, the supporting-bars B, being adjustable, may be set at a distance apart corresponding to the width of the fabric, thus serving as guides to the user in laying the plaits, and affording a perfect support for the needles *a a*, and effectually preventing their sagging.

I claim—

1. A plaiting-machine consisting of a series of round needles or bars rigidly secured in pairs in a suitable frame, substantially as described.

2. A plaiting-machine consisting of a series of parallel needles rigidly secured in a suitable frame, in combination with detachable supporting-bars B, substantially as described.

3. A plaiting-frame having a series of parallel needles secured thereto, in combination with laterally-adjustable supporting-bars, substantially as described.

4. In combination with the rectangular frame provided with needles *a a*, the detachable and adjustable bars B and folder E, substantially as described.

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