E. S. HARDING.

PLAITING-MACHINE.

No. 186,246. Patented Jan. 16, 1877.

Fig. 1

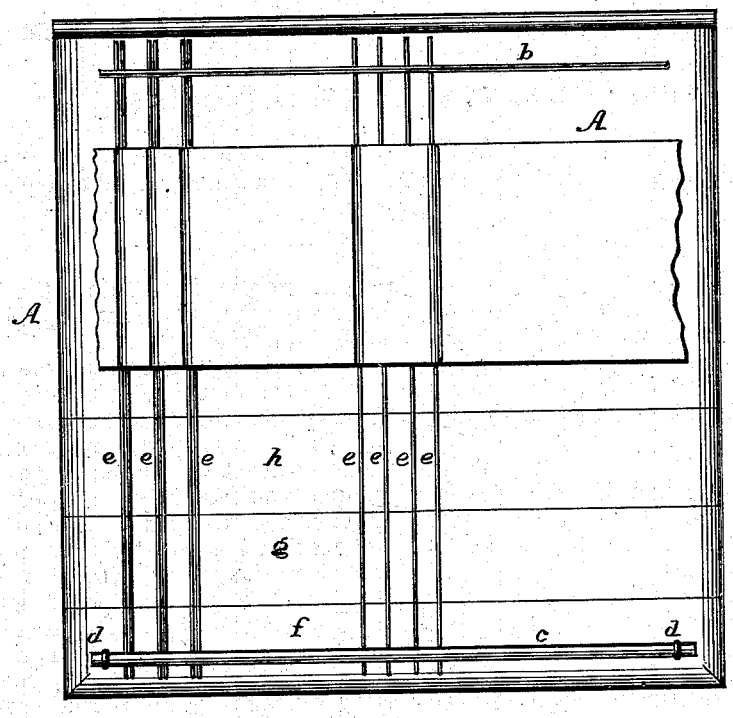


Fig. 2

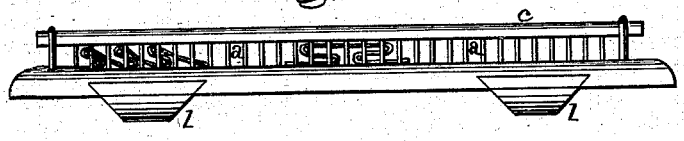


Fig. 3

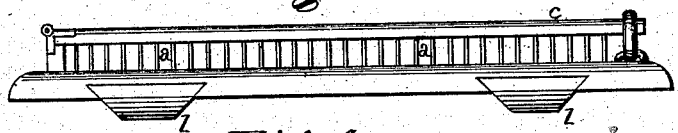
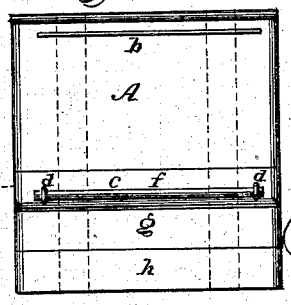


Fig. 4



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EDWARD S. HARDING, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **186,246**, dated January 16, 1877; application filed May 27, 1876.

To all whom it may concern:

Be it known that I, EDWARD S. HARDING, of Baltimore city, State of Maryland, have invented a new and Improved Plaiting-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to furnish the dress and shirt makers, and others having occasion to plait any class of light goods, a simple, inexpensive, and labor-saving device by which goods of various widths may be plaited quickly and neatly, and with a saving of time as compared with other boards of the kind.

The device consists of a board provided with two parallel rows of pins set vertically therein, and a fixed and removable bar applied to or connected with the respective rows, for the purpose of holding the plaiting rods or needles in the proper position.

By making one of the bars removable the plaited fabric may be removed from the board with greater facility than from the boards heretofore employed. The plaiting-board is also constructed in sections, or with one side removable, to adapt it for use of larger or shorter needles, according as it is desired to plait wide or narrow goods.

In the accompanying drawing, forming part of this specification, Figure 1 is a plan view of the board, showing a piece of fabric plaited thereon. Fig. 2 is a side or edge view of the same. Fig. 3 is a side or edge view, showing a modification. Fig. 4 is a plan view of the board, on a reduced scale, showing the removable sections adjusted as required for plaiting narrow pieces of fabrics.

Parallel rows of short studs or pins *a* extend along the respective sides of the rectangular board A. The pins are set vertical, and near together, but equidistant. A metal or other bar, *b*, is soldered or otherwise firmly attached to the tops of the pins of one row, and a removable grooved bar, *c*, is applied to the other row. In the latter case, the pins enter the groove in the under side of the bar *c*, and the same is held in place thereon by staples *d*, fixed in the board at the ends of the row of pins. The bar *c* may hence be removed, whenever desired, by sliding it lengthwise through the staples. (As an alternative, instead of employing staples, I may hinge the bar *c* at one end, and secure its free end by a pivoted link, as shown in Fig. 3.)

In the plaiting operation, the bar *c* is first removed, and one end of the piece of goods to be plaited is laid upon the board A, near the end, and rods *e* are laid underneath or above the same, at such distances apart and in the manner required to form the desired plaiting-knife, side, box, or bias. The ends of the rods are inserted between the pins, and the latter hold them the proper distance apart.

The following specific directions for forming small plaits will suffice to illustrate the mode of operation for all kinds of plaiting: Lay the cloth on the board A, face side down; insert a needle in the second space—that is, between the second and third teeth; turn the cloth back over the needle; insert another needle in the first space back of the first needle—*i. e.*, between the first and second pins. Then turn the cloth back over the first needle inserted. Insert a needle in the third space, and turn the cloth back again, and insert a needle in the second space, which will leave two needles in the second space, and so continue till the board is full. To commence again, insert a needle in the last two folds. If the folds require to be wider, the needles must, of course, be put farther apart. In other words, certain spaces must be omitted.

When the folds have been all properly arranged, a damp cotton cloth is laid over them, and they are pressed with a hot iron, to give them the desired "set." The iron imparts some of its heat to the rod, and it is consequently somewhat difficult to remove them from the plaited fabric, and too much time would be consumed in waiting for them to cool. This objection is obviated by making the bar *c* detachable, as before stated, so that the rods may be removed without any delay.

In order to adapt the board A for use of short rods or needles, as required when plaiting narrow goods, it is obviously necessary the rows of pins shall be brought nearer together. For this purpose it is requisite the board A shall be constructed in sections, somewhat after the manner of a common extension dining-table. The row of pins to which the fixed bar is attached is therefore set in a de-

tachable piece, *f*, and other detachable pieces, *g h*, intervene between it and the main portion A of the board. The several pieces are all provided with dovetail grooves on the under side, to receive dovetail bars *l*, which are let into the main portion of the board. The several pieces *g h* will, therefore, slide on and off the bars *l*, and in this manner the piece *f*, in which the pins are inserted, may be placed the desired distance from the other row, to accommodate either the long or short rods.

Incidental to the above-described function of the dovetail bars *l* is that of imparting strength and rigidity to the board A, thus preventing warping or cracking of the same from the effect of the heat of the iron.

What I claim is—

1. A plaiting-board provided with rows of pins *a a*, and a removable bar connected with one of the rows, substantially as shown and described.

2. The detachable grooved bar *c* and fastening devices, in combination with the row of pins, substantially as specified.

3. A plaiting-board made in sections, which are detachable one from the other, substantially as shown and described.

4. The dovetail bars *l*, and removable sections, one of which latter is provided with a row of pins, in combination with the main section of the board, as shown and described.

EDWARD S. HARDING.

Witnesses:

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