2 Sheets—Sheet 1.

W. PAINTER.

PLAITING-MACHINE.

No. 193,029. Patented July 10, 1877.

Fig. 1

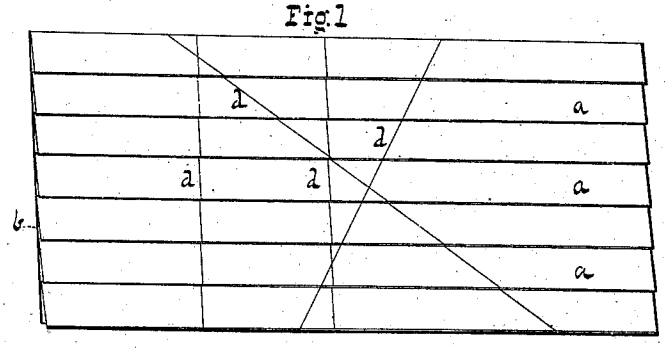


Fig. 2.

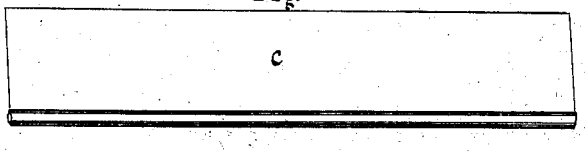


Fig. 3.

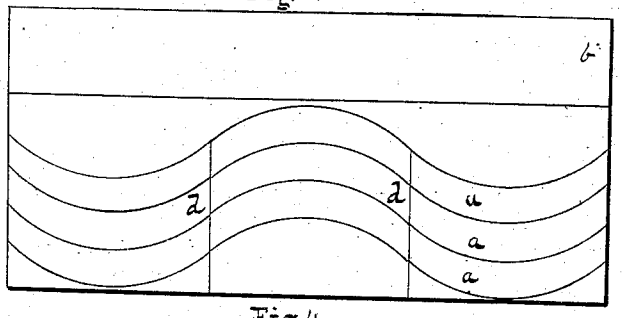


Fig. 4.

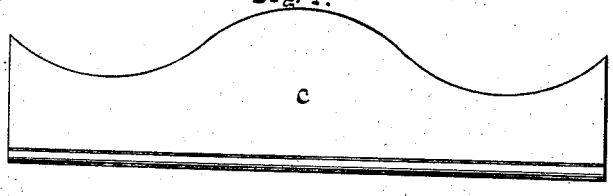


Fig. 5

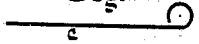
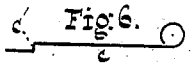


Fig. 6.



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2 Sheets—Sheet 2.

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Fig 7.

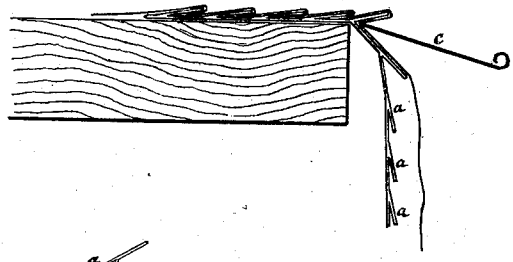


Fig 8.



Fig 9.

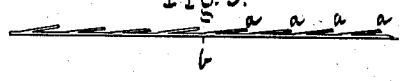


Fig 10.

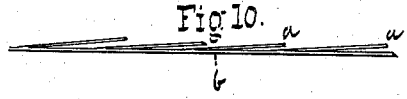
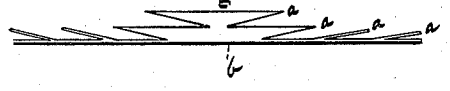


Fig 11.



Fig 12.



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UNITED STATES PATENT OFFICE.

WILLIAM PAINTER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO LEWIS R. KEIZER, OF SAME PLACE.

IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **193,029**, dated July 10, 1877; application filed June 12, 1877.

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Plaiters; and I do 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 my plaiter; Fig. 2, a plan view of the appropriate folder; Figs. 3 and 4, plan views of a modification of the plaiter and its folder; Figs. 5 and 6, sectional views of two forms of folder. Fig. 7 illustrates the plaiter in use. Fig. 8 shows the method of withdrawing the plaiter from the fabric. Figs. 9, 10, 11, and 12 represent longitudinal sectional views of various modifications of the plaiters shown in Figs. 1 and 3.

Two principal forms of devices designed to effect the plaiting of textile fabric have been heretofore employed, and are known, respectively, as "machine-plaiters" and "hand-plaiters." The former are cumbrous and expensive, and the latter consist, generally, of a simple board provided with a series of slats or needles for forming the plaits, and pins or similar devices for holding the needles in place.

Both forms are open to the objection that they are too costly, when the quantity and quality of the work which they are called upon to perform is considered, while the latter form is exceedingly slow and tedious in operation, almost its only advantage over hand-work consisting in the greater regularity of its plaits.

The machine-plaiter is capable of forming continuously but a single variety of work, and when it is desired to change the style or width of the tucks it is necessary to stop the machine and adjust it accordingly.

While the hand-plaiter is capable of forming all the varieties of plaits—box, side, diagonal, and cluster—a greater exercise of the inventive faculty is generally called for to properly adjust the needles than the inventor of the machine would lay claim to in its construction.

My plaiter is novel in principle, and is open to none of the above objections. It may be constructed at but a trifling cost, is not only capable of forming every variety of plaits possible upon other plaiters, but also other and new designs, which they cannot produce, and, as it is itself a pattern, a mistake in using it is impossible. It will form plaits, moreover, with all the regularity and accuracy of either the machine or hand plaiter, and with a rapidity rivaling the former, and far exceeding anything possible by the use of the latter.

The principle of my plaiter may be briefly stated: The device presents a pattern adapted to receive the material and mold it in conformity with its contour. No mental effort is necessary on the part of the user to design the work as it goes on, for the reason that the device itself is a design.

In construction, my plaiter consists of a sheet of suitable material (paper, such as used for express-tags, being preferred) bent or folded into the shape of the desired plaiting, as shown in Figs. 1, 3, 9, 10, 11, and 12 of the drawings.

The paper plaits are preferably glued or pasted together between the folds, and are similarly attached to a backing, *b*, which may be either paper or textile fabric. In lieu of the backing, a strip of paper or tape may be similarly attached at each edge. A folder, *c*, is used to press the fabric into the spaces between the leaves *a a*, the said folder consisting, preferably, of a piece of tin or other sheet metal. When it is desired to economize fabric, a folder having a shoulder, *c'*, is used, the shoulder bringing up against the edges of the leaves *a*, and thus preventing the insertion of the fabric to the full depth of the spaces between the leaves. The shoulder, instead of being formed by bending the folder twice at right angles, may be adjustably attached to the folder in any convenient manner.

The plaiter is ruled with guide-lines *d d*, to aid the user in laying the plaits. Some of these lines may be drawn diagonally, as shown, for use in forming diagonal plaiting, and should those upon the plaiter not have the desired slant, a pencil and ruler will readily supply the deficiency.

It is obvious that the edges of the plaits *a* may have any desired shape, a corrugated or

waving form being shown in Fig. 3. By using a corresponding folder, Fig. 4, a variety of new and pleasing designs may be produced.

In order to use the device, the cloth to be plaited is laid in proper position upon it, and both are allowed to depend from the edge of a table or suitable support, as shown in Fig. 7. The paper plait immediately over the edge of the table naturally opens, and the fabric is pressed into it by means of the folder. Each plait, as formed, is held in position by the natural closing tendency of the leaves, assisted by a slight pressure of the hand. The entire device is gradually moved upon the table, so as to constantly keep the line of operation just over its edge. When the plaiter is full the fabric is ironed over a damp cloth, as usual, in order to fix the plaits. When piled fabric, such as velvet, is used, the iron is preferably applied to the back of the plaiter. In order to remove the fabric from the device, the latter is turned over, as shown in Fig. 8, when the plaited fabric may be readily removed, as illustrated.

While I have described the device as constructed of paper, I do not limit myself thereto. Other material, such as sheet metal, will answer; but paper is preferable, on account of its cheapness and facility afforded in constructing the device. The gist of my invention consists, in fact, of a pattern-plait adapted to be used as described.

Other varieties of plaiting besides that of the pattern may be made upon a single plaiter by skipping one or more spaces, or by pressing the cloth but a short distance into them.

The plaits in the device may be made diagonal, of course, and such plaiters will be found most convenient for diagonal work, although such may also be made upon the ordinary plaiter by using the diagonal lines.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A plaiter consisting of a series of leaves attached to a flexible backing, constructed and arranged to operate substantially as described.

2. The combination, with the plaiter consisting of the leaves *a* and backing *b*, of a folder, *c*, all constructed to operate substantially as set forth.

3. A plaiter having its surface ruled with lines to serve as guides in laying the plaits, substantially as described.

4. A plaiter having a series of leaves adapted to receive and automatically retain the fabric as plaited, substantially as described.

5. A plaiter having a series of curved or waving leaves or formers, arranged to operate as set forth, and adapted to form corrugated or waving plaits, substantially as described.

6. The method herein described of forming plaits, the same consisting in pressing a textile fabric into the spaces between the leaves of a pattern-plait by means of a folder, withdrawing the same after the formation of each plait, and fixing or setting the plaits, substantially as described.

WILLIAM PAINTER.

Witnesses:
G. H. WILLIAMS,
W. A. BERTRAM.