2 Sheets—Sheet 1.

L. C. WEST.
Plaiting-Machine.

No. 205,775. Patented July 9, 1878.

Fig. 1.

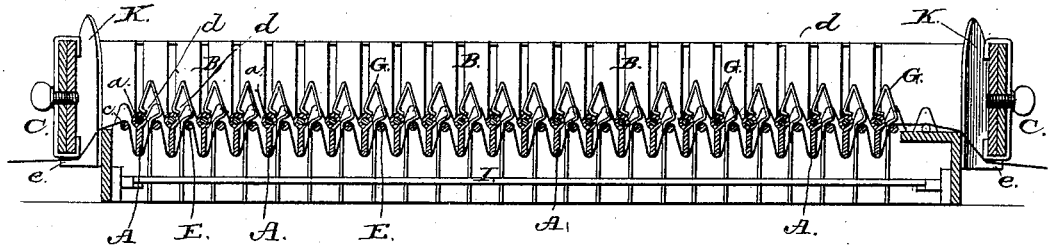
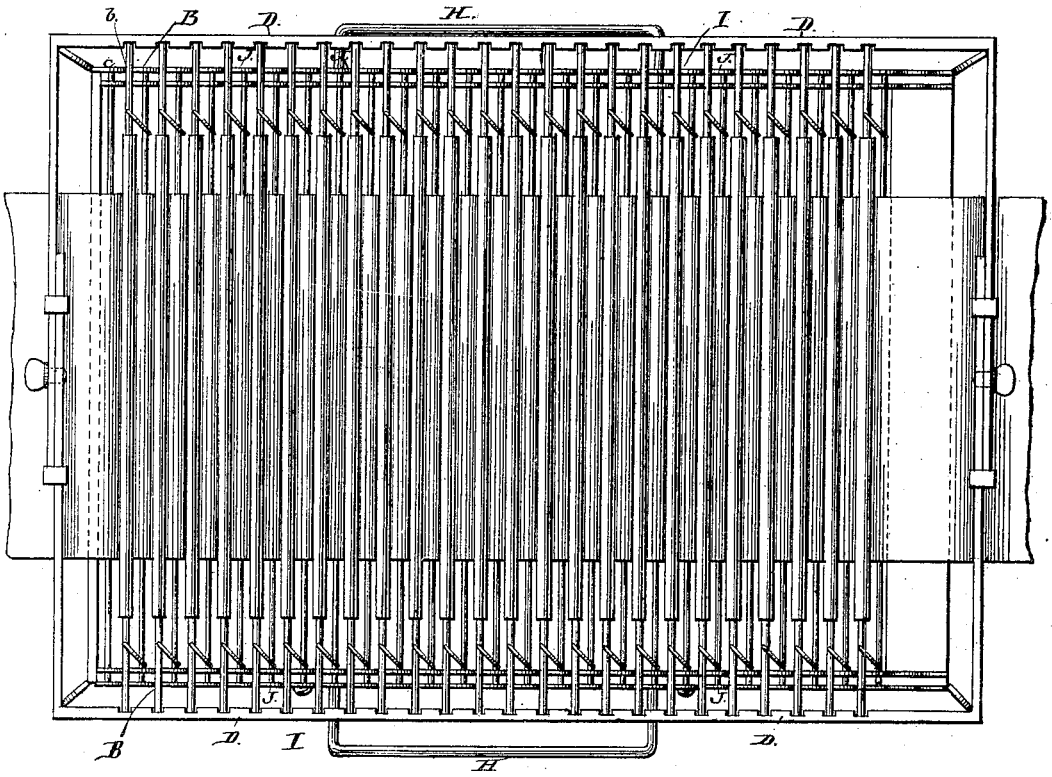


Fig. 2.



Attest:

B. B. Frazee

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Inventor:

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2 Sheets—Sheet 2.

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Fig. 3.

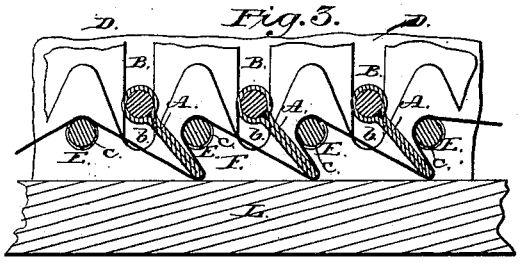


Fig. 4.

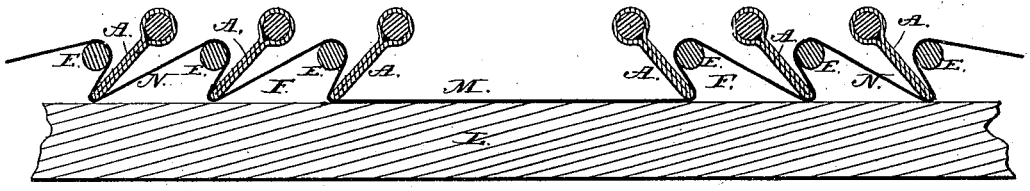
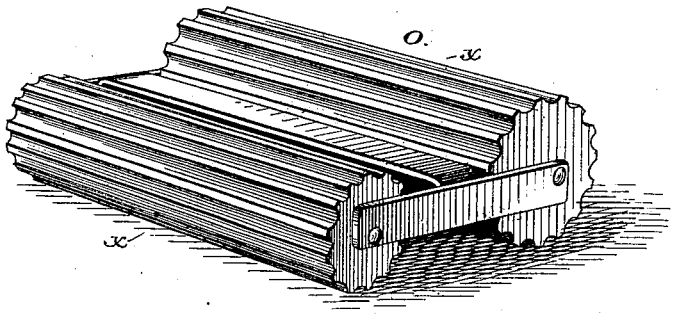


Fig. 5.



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UNITED STATES PATENT OFFICE.

LUCIUS C. WEST, OF KALAMAZOO, MICHIGAN.

IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **205,775**, dated July 9, 1878; application filed April 3, 1878.

To all whom it may concern:

Be it known that I, LUCIUS C. WEST, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Improvement in Machines for Plaiting Dress Goods, Muslins, and other Fabrics, my machine to be known as "West's Coup de Grace Plaiter;" and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The nature of my invention relates to plaiting-machines; and consists in the construction of the plaiting-blades A A, Figure 1, and a frame for holding the same while in use, Fig. 2. These blades are firmly secured to the blade-needles *a a* at an equal distance from the ends of each, and may consist of any number of sets of different sizes or widths, according to the caprice of the operator.

My judgment, founded upon experience, provides one set of three-eighth-inch width blades for all ordinary purposes, and another set of double this width for contingent uses. The purpose for which these blades are designed is to form the plaits by inserting the fabric between the plaiting-needles E E, and to hold the said plaits in place while being compressed.

The blade-frame, Fig. 2, has perpendicular elongated incisions B B cut through each side, into which the ends of the blade-needles *a a* are inserted, said incisions being of sufficient length to admit of the use of the widest blades. On the outer face of each side of this frame are guards, (illustrated at D,) with a segment cut away, showing incisions B B. The ends of the blade-needles *a a* hit against these guards when the frame is held out of a horizontal position, thereby preventing the blades A A from getting out of place.

The ends of this frame are so constructed at C as to admit of its being extended in width when it is desired to remove or adjust the blades.

My invention further consists in a base-frame, Fig. 3, for holding plaiting-needles E E while in use, having notches *b b* cut in the top of each side alternating with needle-holes *c c*, the base of said notches being rounded, and brought to a horizontal plane with the base of the needle-holes *c c*, to receive the blade-needles *a a* and admit of the blades A A, after having been inserted between the plaiting-needles E E, being easily laid to the right or left, or both directions, as the style of the plaits requires, as shown at F F in Fig. 4, said figure showing the machine bottom upward.

The base-frame, Fig. 3, is also provided with two rows of guide-springs, G G, the ends of which project a little way above the horizontal plane of the plaiting-needles E E, said guide-spring answering the triple purpose of guiding the blades A A between the needles E E, of holding them there by means of the shoulders *d d*, under which the blades pass, as seen at left of Fig. 1, and holding the blades, previous to their being inserted between the needles, a little above the fabric, thereby preventing a tension being formed. These springs are moved inwardly or the reverse, by means of handles H, which connect through the frame with bars I, into which the guide-springs G G are firmly secured, the ends of these bars being inserted into little slots, in which they easily move.

Guards J are also provided for preventing the plaiting-needles E E from dropping out of frame, one of said guards being adjustable, to facilitate the removal of said needles. At each corner of this frame are fixed perpendicular guides K K, which guide and hold the blade-frame in place when operating the machine. Said guides have shoulders *e e* provided, upon which the blade-frame rests.

Fig. 4, as hereinbefore stated, represents the machine bottom upward on the compressing-board L. The folds of fabric are here represented on the plaiting-blades A A, said blades being laid in opposite directions at F F from box-plait M and toward hollow plait N, ready for dampened cloth and compressing-iron.

My invention consists, still further, in providing a double roller, *o*, Fig. 5. This feature of my invention is to aid the operator in inserting the plaiting-blades A A between the plaiting-needles E E. These rollers have grooves traced lengthwise across them, and

are constructed of such a size that just as one blade is pressed in place the next is being pressed upon by a groove.

The utility and superiority of my invention over most all other machines rest in its capacity to perform a greater amount of work in a given time. The secret of this speed lies in the use of the plaiting-blades A A in conjunction one with another, which are pressed in place between the plaiting-needles by means of the roller O almost simultaneously, and in the fact of said plaiting-blades holding the plaits in place while being compressed. Its superiority further rests in its capacity to make two new styles of plaits, as well as all plain and more common forms known to the art. I call the said new styles the "Coup de grace puffed" and the "Coup de grace quilled" edge-plaits.

The machine may be constructed of any suitable material; but for cheapness it can be made, aside from the needles, of nearly all wire and tin.

To operate the machine, adjust the guide-springs G G, as in Figs. 1 and 3, by means of the handles H, and spread the fabric between them upon the plaiting-needles E E. Place the base-frame, Fig. 2, in which the blades have been adjusted, in accordance with the desired style or width of plait, upon the base-frame, Fig. 3, outside of guides K K, letting it rest upon shoulders *e e*, when the blades A A will all come in regular order between the guide-springs G G, Fig. 1. If narrow blades are being used, roll the small roller, in advance of the larger, transversely over the blades by pushing them with the palm of the hand. If double-width blades are used, of course the large roller moves in advance of the small one.

As the roller advances, the blades already pressed in place are held securely beneath the shoulders *d d* of the guide-springs G G; otherwise the tension brought to bear upon the fabric would raise them again.

When the blades A A are all in place between the plaiting-needles the machine is turned bottom upward upon the compressing-board L, Fig. 4. By moving the guide-springs G G out against the sides of base-frame, the blades are all set free with the fabric upon them. Now draw the fingers across said blades in whichever direction the plaits are to be laid, F F, and they will remain in said position ready for the dampened cloth and compressing-iron, to the great delight of the operator.

To remove the fabric from the machine after being compressed, turn the machine right side up, and raise the blade-frames by taking hold of the ends at C, observing to raise the end at which the plaiting was discontinued in advance of the other. The blades are thus all removed at once. To continue the operation, insert the first blade in the last plait made.

Box-plaits are made by leaving out as many blades as the width of the plaits require. So with all width plaits aside from the narrow, which require a full set of blades.

Hollow plaits are made by leaving out either blades or plaiting-needles sufficient to govern the width required.

To make the coup-de-grace quilled-edge plaits, lay the fabric on the plaiting-needle right side up.

To made the coup-de-grace puffed plaits, take out every other blade and lay the fabric on the plaiting-needles right side up.

To make common plain plaits, lay the fabric on the plaiting-needle wrong side up.

Exceedingly narrow plaits or "quilling" can be made by laying a small rod, about the size of a large knitting-needle, on the plaiting-needles E E between the sides of the base-frame and guide-springs G G, which prevents the plaiting-blades from being pressed so far through the needles E E, when the operation is concluded in the manner of making other plaits.

Handsome fluting can be made by proceeding as for quilling, with this exception, viz: the guide-springs are left in the position they were in when the blades were inserted, when the hot iron is set upon the dampened cloth, spread upon the edges of the blades, without laying said blades in either direction.

By making the larger of the two rollers O of some metal which would allow of its being heated, successful fluting of ruffles could be easily accomplished, though I do not claim a combined plaiter and fluter.

Having described my invention, what I claim as new, and desire to secure to me by Letters Patent of the United States, is—

1. In a plaiting-machine, the blade-frame with its incisions B B, extension ends C, and guards D, substantially as described.

2. The blades A A, with their needles *a a*, substantially as and for the purpose described.

3. The base-frame with notches *b b*, guards J, guide-springs G G, with their bars I, handles H, guides K K, with their shoulders *e e*, combined and arranged substantially as described, and for the purpose set forth.

4. The roller O, consisting of the connected corrugated rollers X X′, of varying size, and adapted to operate in combination with a plaiting-board, substantially as and for the purpose described.

LUCIUS C. WEST.

Witnesses:
B. B. FRAZEE,
A. P. SPRAGUE.