2 Sheets—Sheet 1.

L. B. BERRIEN.

PLAITING-MACHINE.

No. 191,825. Patented June 12, 1877.

Fig. 2.



Fig. 3.

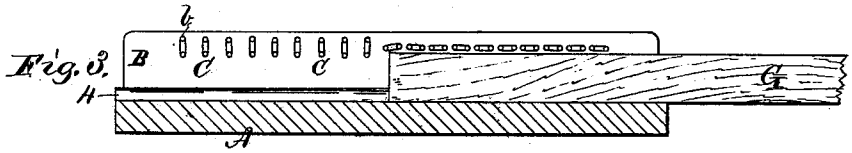


Fig. 4.

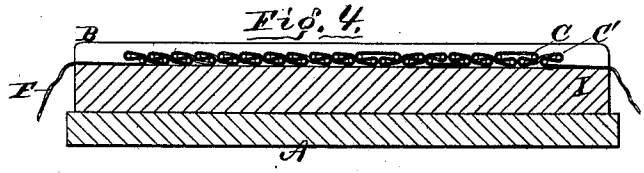
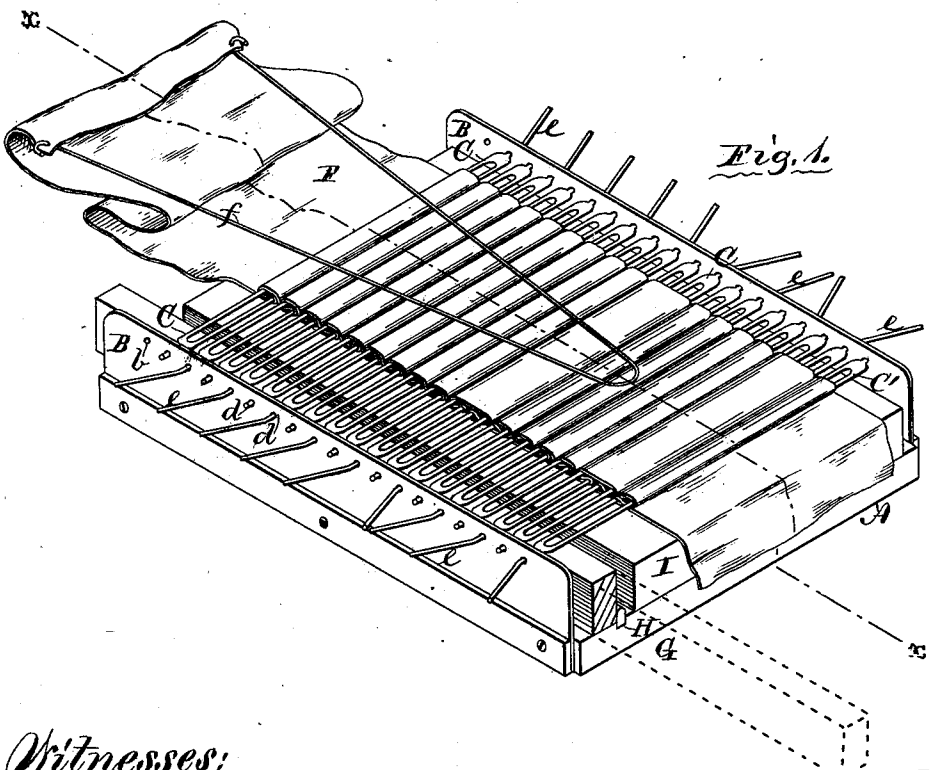


Fig. 1.



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2 Sheets—Sheet 2.

L. B. BERRIEN.

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Fig. 6.

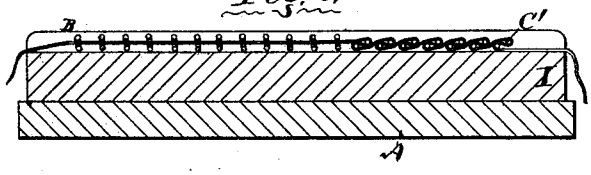


Fig. 5.

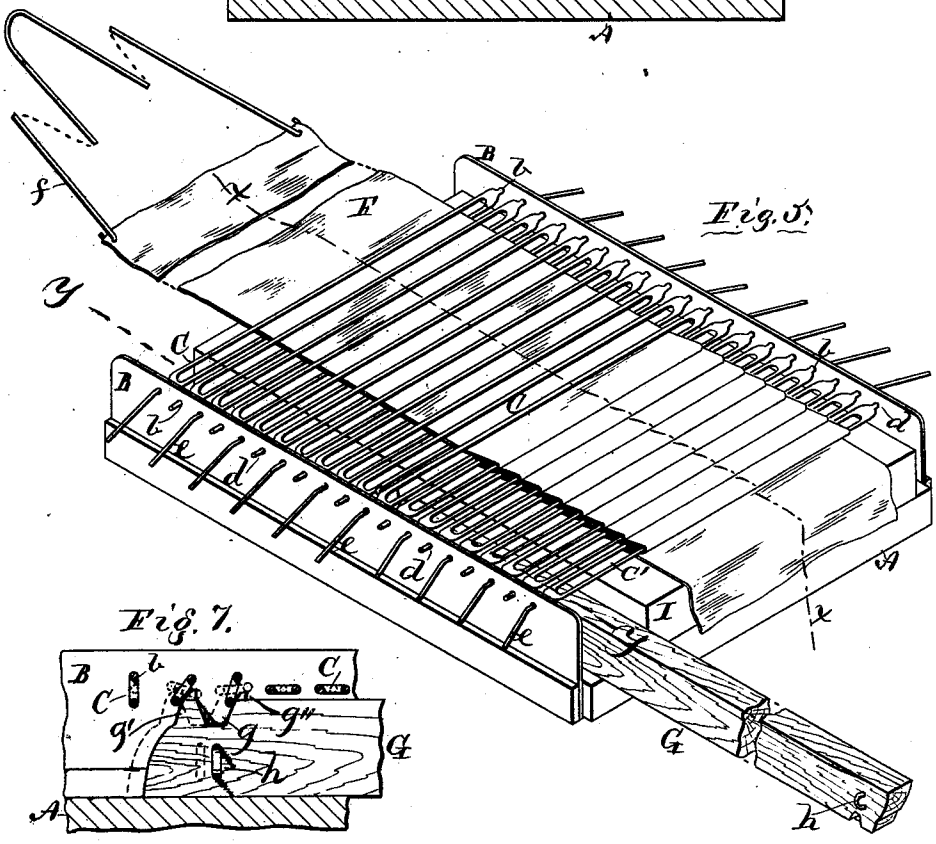


Fig. 7.

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UNITED STATES PATENT OFFICE.

LEONARD B. BERRIEN, OF GALESBURG, ILLINOIS.

IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **191,825**, dated June 12, 1877; application filed April 18, 1877.

To all whom it may concern:

Be it known that I, LEONARD B. BERRIEN, of Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Plaiting-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in plaiting-machines; and consists, first, in the construction of the bars for forming the plaits in the cloth, said construction consisting of slotted bars, through which the cloth may be drawn, and the bar then rotated to form the plait or fold; second, as a further improvement in construction, the slotted plaiting-bars are provided with handles or cranks, by means of which they may be operated by hand for forming plaits in cloth, and for arranging all of the plaiting-bars in similar vertical positions for inserting the cloth; third, in mounting the series of plaiting-bars in a frame in such manner that they may be operated by hand singly, or by a device provided for the purpose; fourth, in the combination of a locking-bar with the slotted plaiting-bars and frame, by means of which the plaiting-bars may be held in position as they are successively rotated and arranged by hand; fifth, in the combination of an actuating device with the slotted plaiting-bars, by means of which the plaiting-bars may be successively operated for forming folds or plaits in the cloth; sixth, in the peculiar construction of the bar for actuating the plaiting-bars, all as hereinafter fully described.

In the accompanying drawing, Figure 1 is a perspective view of a machine embodying my invention, and showing cloth folded into plaits therein, as when done by hand. Fig. 2 is a plan view of a single plaiting-bar. Fig. 3 is a sectional view. Fig. 4 is a sectional view in the line *x x* in Fig. 1. Fig. 5 is a perspective view, showing the method of rotating the plaiting-bars by an actuating device. Fig. 6 is a sectional view in Fig. 5 on line *x x*. Fig. 7 is a sectional view, in the line *y y* in Fig. 5.

Referring to the parts by letters, A represents the base or bottom board of the frame, to which the side frames B B are securely attached, and from which they project upward. The side frames are pierced with a series of holes, *b*. The plaiting-bars C are constructed as shown more plainly at Fig. 2, with a longitudinal slot, *c*, in each, and with journals *d* on each end, and a handle or crank, *e*, on one end.

The bars C are placed transversely of the board A, and with their journals *d* resting in the holes *b* in the side frames B, and their handles *e*, which extend outward of the frames B, are bent, as shown at Fig. 2, so that when all turned downward the plaiting-bars will all be arranged with their slots in an open horizontal line, as shown by the plaiting-bars at left-hand side of Figs. 3 and 5.

G is the locking and actuating bar, and is of a thickness nearly corresponding to the distance between the bars C when turned down, and the base A, as shown at right-hand half of Fig. 3. Near one end of the bar G is a notch or recess, *g*, on one side of which is a higher projecting finger, *g'*, and on its other side a lower projecting finger, *g''*, as shown plainly at Fig. 7. H is a ledge, which acts as a guide at one side of the bar G, and *h* is a projecting staple, which acts against one of the frames B as a guide at its other side when the bar G is used as an actuating device for the plaiting-bars, as hereinafter described.

For box-plaiting, and other styles in which the bars C must be operated by hand, I proceed as follows: While the plaiting-bars C are all in the positions shown by those at the left-hand side of Figs. 3 and 5, the strip of cloth F, which is to be operated upon, may be inserted in a straight line through the series of slots *c*, by means of a hook-rod, *f*, or other suitable device, and the cloth thus be brought into position in the plaiting-bars, as shown at left-hand sides or halves of same figures. While the cloth is in the last-named position, it will be evident that either bar C may be rotated by means of its crank *e*, to form a fold

or plait, as shown at Fig. 1, where box-plaiting, and plaits turned to the right hand and to the left hand, are shown. In making the last-named styles of plaiting, and, in fact, all styles, except one, I commence at the bar C′, at the right-hand side of the machine, and turn the bars C successively, to form the folds in the cloth. To hold the plaiting-bars after the plait is formed, I insert the bar G, with its plain end foremost, between the bars C and board A, and as each plaiting-bar C is rotated into the desired position, I push the end of the bar G forward and beneath it, to hold or lock it, as shown at Fig. 3.

To rotate or operate the bars C by means of the actuating-bar G, and form plaits in the cloth similarly folded, as shown at Figs. 5 and 6, I proceed as follows: The cloth is drawn within the slotted bars C, in the same manner as hereinbefore described, and with its surplus unfolded end projecting from the left-hand side of the machine. The bar G is now inserted between the bars C and the base-board A, with the end having the fingers g' g'' forward, and as the bar G is now pushed forward, the fingers g' will first rotate the plaiting-bars C through an arc of about one hundred and fifty degrees, and turn them successively back into the recess g, as shown by dotted lines at Fig. 7, where they are in position to be acted upon successively by the advancing finger g'', and thus rotated through an arc of about one hundred and twenty degrees, to complete the fold or plait in the cloth. The first plait formed at the left-hand side of the machine will secure the cloth at that end, and cause material to be drawn from the opposite side to form the plaits, as the bar G is advanced to actuate the bars C.

When the folds are completed, by hand or by the actuating device, the board I may be inserted, as shown at Fig. 1, and a warm iron and damp cloth used, in the ordinary manner, to set or fix the folds. The board I and bar G being then withdrawn, the plaited cloth may be drawn through to the right-hand side of the machine, to bring unplaited material within the slotted bars C, for further similar operations.

For arranging the bars C for the insertion of the cloth, the bar G may be pressed upon the cranks e, and turn them all uniformly into position.

The cranks e are arranged alternately at opposite sides of the machine, to give them operating space.

Various styles of plaiting may be made by removing occasional bars C and turning them in opposite directions, and otherwise.

Either bar C can be removed by springing a frame, B, outward slightly, and then first withdrawing the shorter journal e.

The device may be secured to the table in any ordinary manner.

I do not claim as my invention a number of straight wires pivoted to a hinged bar, and arranged to plait a fabric placed between them by turning the wires.

What I claim as new is—

1. In a plaiting-machine, the plaiting-bars constructed with a longitudinal slot, e, in each bar, substantially as and for the purpose specified.

2. Longitudinally-slotted plaiting-bars C, having a crank, e, on their ends, substantially as described, and for the purpose specified.

3. Longitudinally-slotted plaiting-bars C, having a journal, d, on each end, combined to operate with frame-bars B B and a base, A, substantially as and for the purpose specified.

4. The locking-bar G, arranged to operate with the slotted plaiting-bars C, base A, and bars B, in which the bars C are journaled, substantially as described, and for the purpose specified.

5. In combination with slotted plaiting-bars C and the frame in which they are mounted, an actuating-bar, G, for rotating them successively, substantially as and for the purpose specified.

6. The actuating-bar G, having fingers g' g'' and recess g at one end, arranged for operation with the pivoted slotted bars C, substantially as described, and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEONARD B. BERRIEN.

Witnesses:

J. B. REGNIER,

THOMAS MCKEE.