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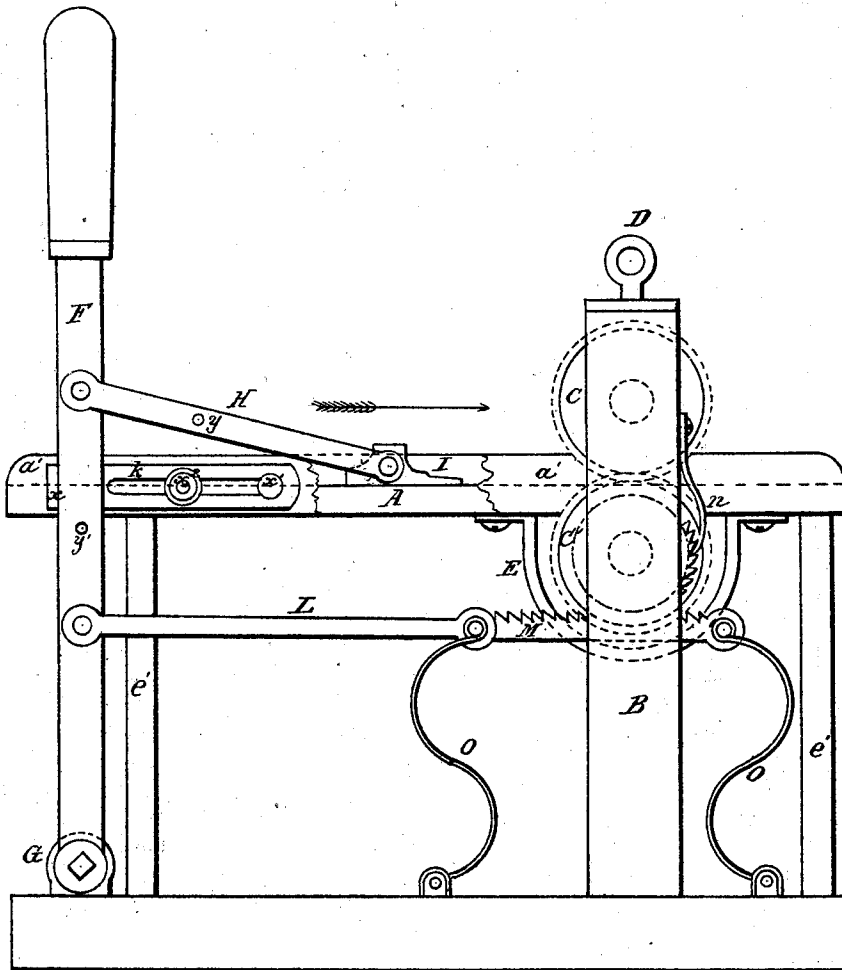
2 Sheets--Sheet 1.

WILLIAM MONT STORM.

Machine for Plaiting Cloth.

No. 122,137.

Patented Dec. 26, 1871.



Witnesses
Edward Halleck
A Mc Manning

Inventor
Wm Mont Storm

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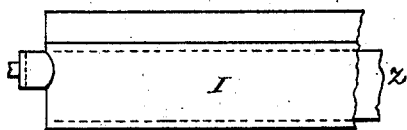
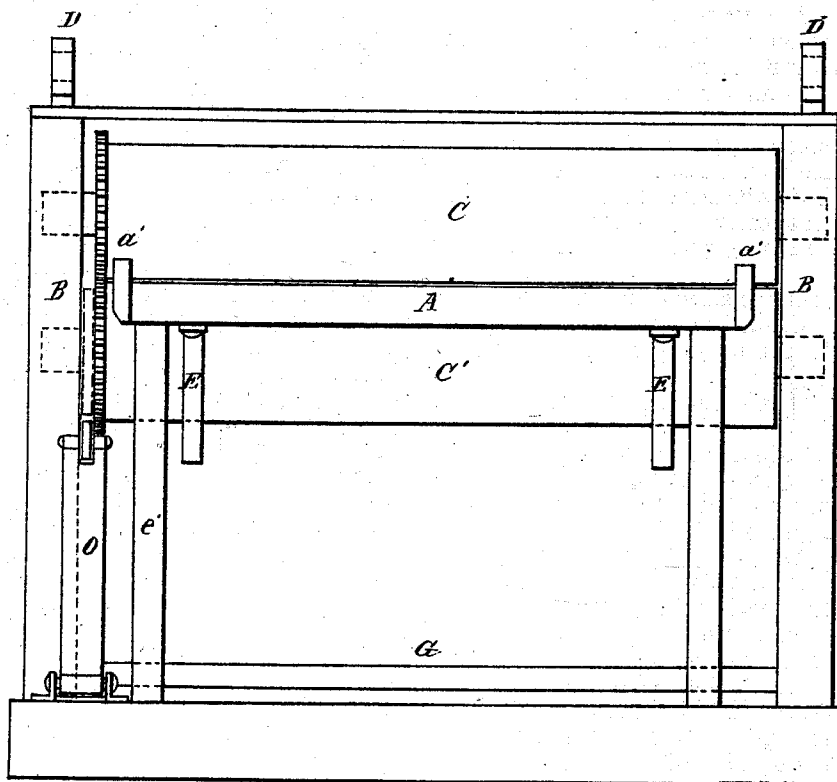
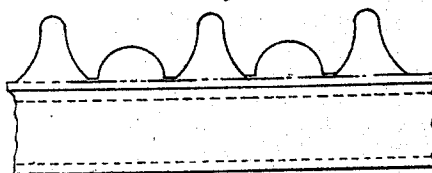


Fig. 1



Fig. 2



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UNITED STATES PATENT OFFICE.

WILLIAM MONT STORM, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR PLAITING CLOTH.

Specification forming part of Letters Patent No. 122,137, dated December 26, 1871.

To all whom it may concern:

Be it known that I, WILLIAM MONT STORM, of the city and State of New York, have invented a new and useful Machine for Plaiting, and also adapted for "gathering" and "puffing," or what I will call "festooning," divers textile fabrics, but principally such as are suitable to being more or less starched before or after being operated upon, and of which the following specification and accompanying drawing give a full and clear description.

Sheet 1 represents a longitudinal side view of the machine. Sheet 2 shows a front end view of the same, with the working levers and pawl *n* omitted.

Like letters of reference indicate like parts in both sheets.

A is a table or bed of smooth hard wood or of metal, having at each side a curb of similar material, *a'*. Between the uprights B of the machine are supported two rolls, C C', say of hard wood, their journals being raised to rise in "boxes," pressing against elastic bearings compressed, *per contra*, by set-screws D to any necessary extent, a common device unnecessary to show; C and C' roll in contact, except when material to be plaited is interposed. It would be better that these two rolls should be geared together, the exterior of the cog-teeth upon them being designated by the dotted circles (Sheet 1) around them, and the inner full-line circle, struck around the same center, indicating their own relative diameter. C rises perhaps one-sixty-fourth or one-thirty-second of an inch above the level of the table A. C cuts through A, which, at the point of juxtaposition with the rolls, is formed to suit their curvature with very slight clearance. To sustain the two parts of A in level with each other they are mutually supported by curved braces E spanning C', and also by posts *e'*. F is a hand-lever, by which the machine is operated, and whose fulcrum is on a cross-shaft, G, at whose opposite end is fixed another and parallel lever, but without a handle. From these two levers extend parallel connecting-rods H to a cross-bar or blade, I, (say of steel,) of peculiar construction, which is to feed the fabric to be plaited. A portion of I is shown in plan and cross-section Fig. 1, Sheet 2. K is a long thick steel loop on the side of A, having a lip at *x* projecting outward from the former, and serving as a stop to the backward motion of the

lever and a gauge to the width of the plait. When at its greatest reach it is stopped by a guide-pin, *x'*; at lesser reaches it is gripped and held by a nut on another fixed guide-pin, *x''*, projecting from the side of A.

The nature and purpose of other details of the machine will be best understood by the description of its operation.

Operation.

It will be understood that to make a plait requires a length of fabric of at least double its width, as it is of double thickness. To work the machine, raise the feeding-blade I, pass the fabric under it, lay it smooth and straight upon the table A, push its front edge forward and cause it to be nipped between the rolls C C'; draw the lever back to the stop *x*. Now, on pushing forward the lever, I will carry forward the cloth, I having secured across, beneath, and within it a strip, *z*, of India rubber, (preferably "scored" longitudinally,) close felt, satinnet, or other suitable material, to make it adhere to the fabric to be plaited. The front edge of I will thus raise an arch of fabric before it and "under-run" it, carrying the sharp fold made at the front edge of I into the grip of the rolls C C' a slight distance, and on retracting the lever the front edge of I will leave the "nip" of the folds between the rolls, while at the same time, during the backward movement of the lever, the rolls will turn and smoothly compress the plait just made. This movement of the rolls is effected as follows: Extending from the lever F is another connecting-rod, L, which joints to a ratchet-bar, M, taking, during its retrograde movement, into a ratchet-wheel fixed on the journal of C', and indicated by the red circle. Into this ratchet-wheel gears a spring-pawl, N, to prevent movement of the rolls in the opposite direction. The ratchet-bar M is pivoted on S-shaped springs O to permit the free passage past each other of the ratchet-teeth in one direction and cause them to clutch in the opposite, while keeping the ratchet-bar M horizontal. As before remarked, I must retrograde from the grip of the rolls a distance double that of the width of the intended plait, while the peripheries of the rolls must travel but half that distance—*i. e.*, the width of the plait itself when completed. For this reason the rod connecting I with the lever is connected to the latter at dou-

ble the distance from its fulcrum that the rod connecting the ratchet-bar with said lever or its counterpart is, as will be understood. From the levers to the connecting-rods H extend spiral springs (their opposite ends being hooked into holes *y y'*) to keep the folding-blade G down with sufficient pressure upon the material to be plaited. To effect "gathering," as at the top of a skirt, for example, the ends of the rolls opposite the gear should be supported above and below, respectively, so that the portion of the garment or fabric not being "gathered" could pass between them without being interrupted by any post embracing the journals of both rolls at that end; "gathers"—being here understood as narrow folds laid against each other, and not like plaits—would then be produced by detaching connecting-rod L from the lever and confining the latter by the adjustment of gauge K to nearly its minimum sweep, each gather being forced between the rolls by the feeding-blade and forced through by the next succeeding gather, and so on. It should have been stated that the forward movement of the lever is in all cases limited by striking against the fixed stud *x*¹. To make "puffs" or "festoons" in a light muslin skirt, for example, and in breadths, prior to its being stitched together for wear on each given

occasion, it is necessary to employ a feeding-blade whose front edge is toothed or "patterned" somewhat as shown, for example, by Fig. 2, Sheet 2. In lieu of the levers to actuate the machine there might be employed two wheels or disks on a cross-shaft near the front end and below the level of the top of the table, and from which wheel would extend the connecting-rods, one end of the shaft having a crank by which to rotate the disks and operate the machine, all as will be understood; but I prefer the arrangement shown.

Having now fully described the nature of my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. The single-hinged or swiveling reciprocating feeding-bar or blade I, in combination with the table A and the drawing-rolls C C', having yielding or elastic surfaces or bearings, combined and arranged in the manner and for the purpose specified.

2. In combination with the folding and feeding-blade, the cushion or pad *z*, arranged in the face thereof, for the purpose specified.

WM. MONT STORM.

Witnesses:

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