2 Sheets—Sheet 1.

J. W. COX.

PLAITING-MACHINE.

No. 185,671. Patented Dec. 26, 1876.

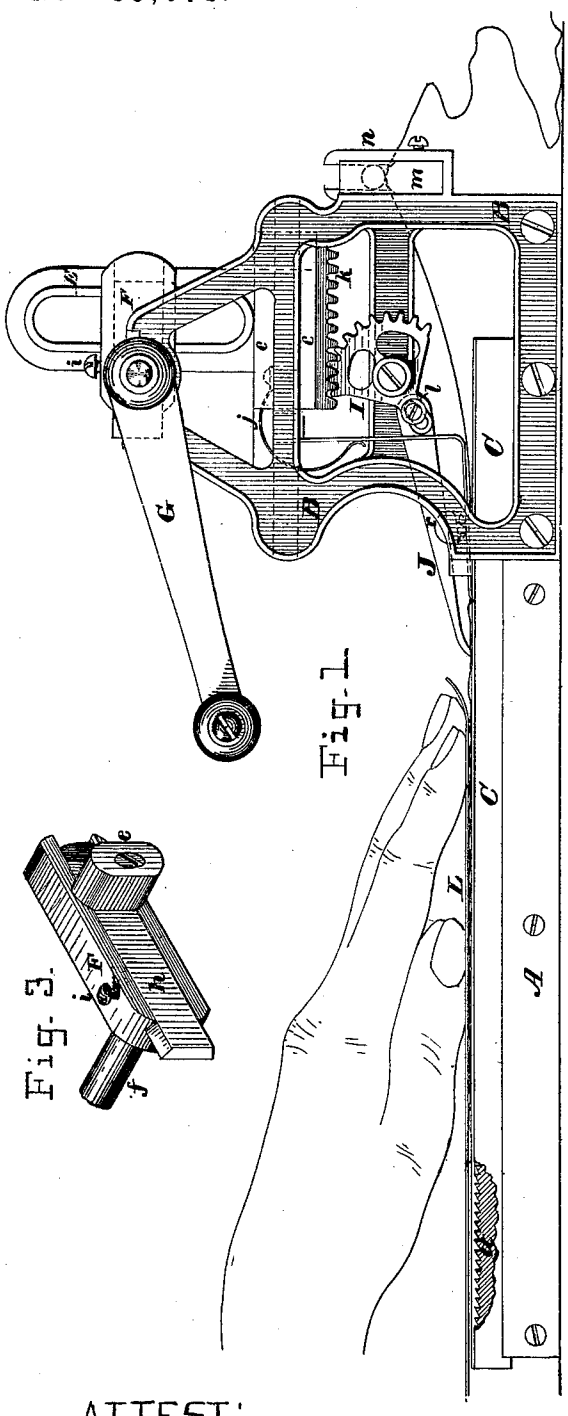

Fig. 1.

Fig. 3.

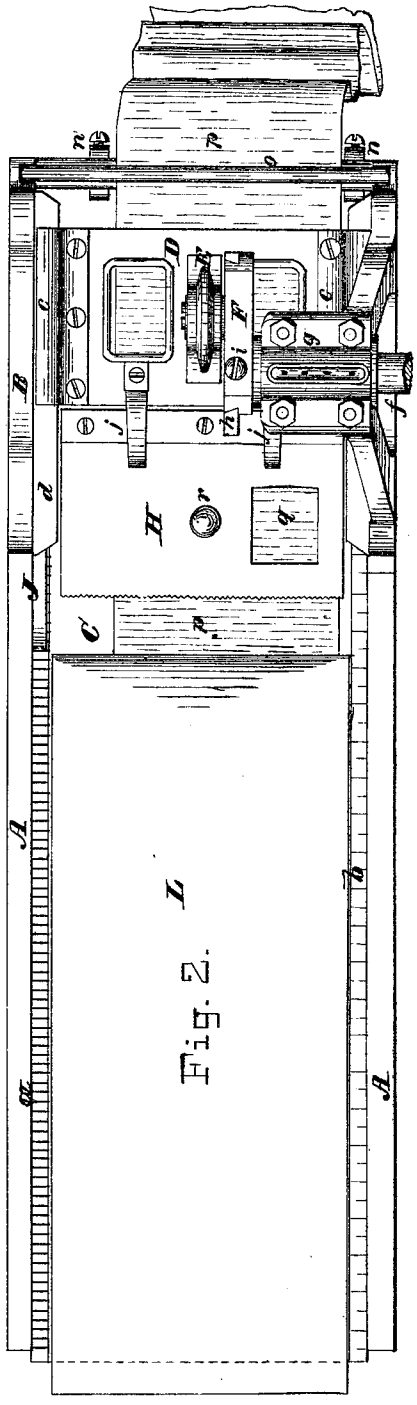

Fig. 2.

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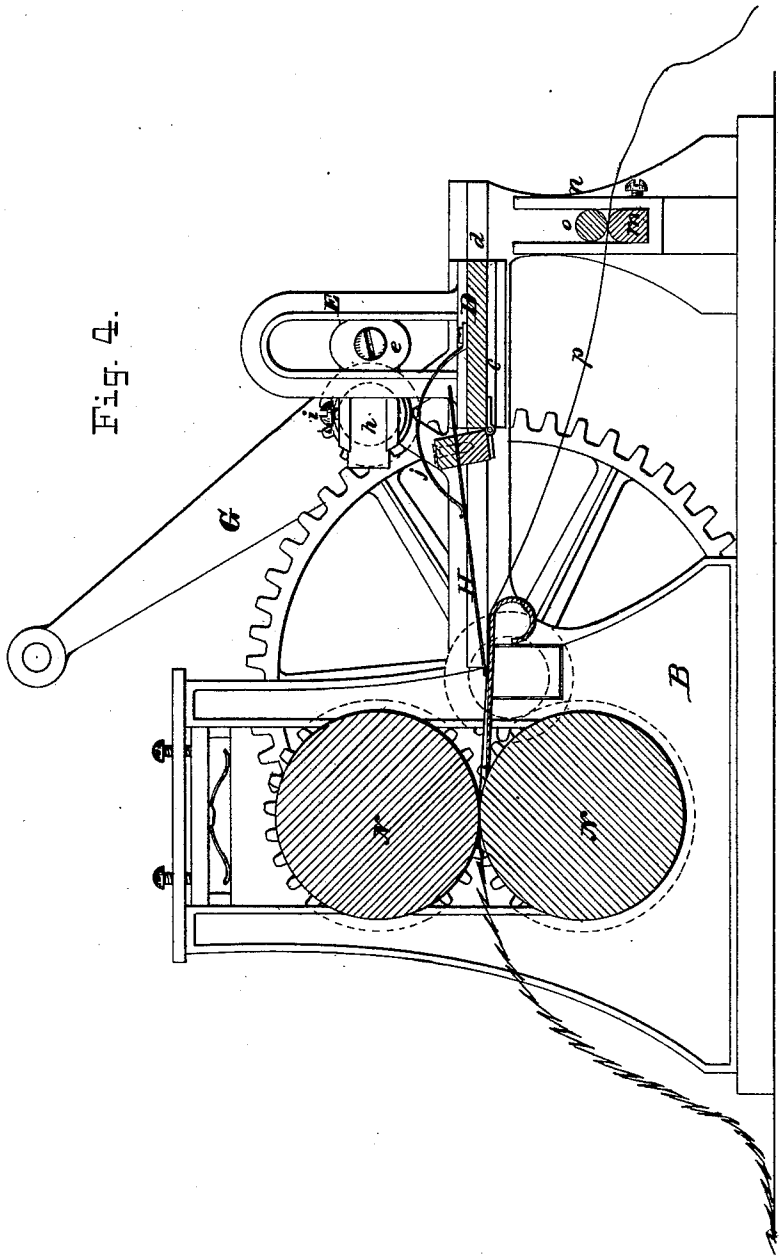
Fig. 4.



ATTEST:

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UNITED STATES PATENT OFFICE.

JAMES W. COX, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN PLAITING-MACHINES.

Specification forming part of Letters Patent No. **185,671**, dated December 26, 1876; application filed September 18, 1876.

To all whom it may concern:

Be it known that I, JAMES W. COX, of Paterson, in the county of Passaic and State of New Jersey, have invented certain Improvements in Plaiting-Machines, of which the following is a specification:

My improvements are especially adapted to machines intended for houshold use, and to be operated by hand; and the novel features and combinations will be fully described hereinafter.

In the drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan of the same. Fig. 3 is a detached perspective view of the adjustable crank. Fig. 4 is a vertical mid-section of a modified form of a machine provided with my improvements.

Referring to Figs. 1 and 2, A is a stationary bed, to which are secured the side frames B B. C is a traveling bed, arranged to rest on the bed A. This bed is provided with a ratchet, *a*, on one edge, and the other edge may be graduated, as at *b*. D is a reciprocating cross-head, provided with jaws *c c*, arranged to embrace guides *d d*, secured to the side frames. E is a vertically-slotted frame, secured to the cross-head, in which plays the sliding block *e*, Fig. 3, of the adjustable crank F. This latter is fixed to a shaft, *f*, which has a long bearing at *g* in the side frame, which shaft bears on its outer end an operating-crank, G.

It will be observed (see Fig. 3) that the sliding block *e* is fixed to a slide, *h*, which plays in a dovetail slot, or its equivalent, in the face of the crank F. This device enables the operator to shorten or lengthen the throw of the crank at will by adjusting the slide *h*, which may be fixed in the desired position by means of the set-screw *i*.

A turn of the operating-crank G will cause the cross-head D to travel back and forth on its guides, its travel being regulated by means of the adjustable crank F, which has just been described.

To the front edge of the cross-head is hinged a bar, bearing a serrated plaiting-blade, H, arranged to rest upon the traveling bed C, being held down by means of a suitable spring or springs, *j j*, as shown.

On the under side of the cross-head D, or on one of the jaws of the same, adjacent to the side frame B, is a rack, *k*, which engages a toothed segment, I. This segment turns on a stud or journal projecting from the side frame, and has an arm, *l*, which may be slotted, and to which is pivoted a pawl, J, the latter engaging the ratchet *a* on the traveling bed.

As the cross-head D moves back and forth, the segment I is caused to oscillate. The pawl J is advanced and retracted, and the bed C is moved forward intermittently. L is a pressure-plate, slightly curved upward at the end, and entirely disconnected from the machine except in its functions, which will be explained further on.

Across the back of the machine is fixed a rounded cross-bar, *m*, bearing two adjustable guides, *n n*. On this cross-bar rests loosely a roller or bar, *o*, its ends playing in vertical grooves in the frame.

Having thus set forth the mechanical construction of the machine, I will now describe its mode of operation.

The crank F having been adjusted to the proper throw for the desired width of plait, the strip of cloth *p* is passed between the properly-adjusted guides *n n* under the roller *o*, and thence forward under the serrated edge of the plaiting-blade H, the bed C being, at starting, pushed back toward the right in the figures as far as it can be without disengaging the pawl. Now place the pressure-plate L on the end of the strip *p*, substantially as in the figures, resting one hand upon it, and then turn the crank G with the other hand, in either direction.

If the blade H is at the forward end of its stroke, the first effect of the movement will be to draw it back over the strip *p*, which is clasped between the plate L and the bed C. As the backward movement of the blade H is taking place, the pawl J advances and pushes forward the bed C, carrying with it the cloth *p*, the plate L, and the hand of the operator resting thereon. The plaiting-blade now in turn advances and the pawl retracts, leaving the bed C stationary for the time. The serrated edge of the blade, as it starts to advance, bites into the cloth in the usual manner, and

proceeds to push forward enough for the plait. At this moment the plait L is slipped along by the hand resting on it far enough to catch the fold of the plait being pushed forward by the blade and nip it, so that the receding blade may not carry it back and thus undo its work. The graduations at *b* will assist the operator in moving the plate L just far enough to be most effective, and not too far.

The function of the presser-plate is to flatten the folds of the plaits and break the creases, as well as to take each successive plait from the blade as made.

The traveling bed C may be of any convenient length, and when pushed forward to its full length by the pawl, the latter can be lifted and the bed pushed back to the position it was in at starting without disarranging the goods being operated upon.

By adjusting the crank F long or short, the plaits are made wide or narrow. By adjusting the connection of the pawl J with the slotted arm *l* of the segment I so as to give more or less movement to the pawl, the plaits may be made to overlap or to be separated by a space. An opening, *q*, in the blade H permits access to the cloth beneath, and by means of a button, *r*, the edge of the blade may be lifted at any time.

The roller or bar *o* should be heavy enough to throw a moderate tension on the strip of passing goods, but not enough to impede the operation of the plaiting-blade.

In Fig. 4 I have shown the application of my adjustable crank to a plaiting-machine having rollers N N to receive and flatten the plaits. These rollers may have a continuous rotary motion imparted by gears, as shown, or be driven intermittently by means of a pawl and ratchet.

I am aware that in plaiting-machines the use of an adjustable sliding block to vary the throw of the operating-crank is not new, and such I do not claim.

I claim—

1. In a plaiting-machine, the adjustable crank for moving the cross-head, consisting of the crank proper, F, having a dovetailed slot or groove in its face, the slide *h*, arranged to play in said groove, the sliding block *e*, and the set-screw *i*, all arranged substantially as set forth.

2. The combination of the segment I, having a slotted arm, *l*, with the pawl J and rack *k*, when all arranged substantially as set forth.

3. The combination, in a plaiting-machine, of the traveling bed C, having a ratchet, *a*, the pawl J, the segment I, having an arm, *l*, the rack *k*, and the reciprocating cross-head D, when all arranged substantially as set forth.

4. The combination of the traveling bed C, having a ratchet, *a*, the pawl J, segment I, and rack *k*, cross-head D, plaiting-blade H, and springs *j j*, or their equivalents, when all arranged to operate as and for the purposes set forth.

5. The combination of the traveling bed C, having a ratchet, *a*, the presser-plate L, pawl J, segment I, and rack *k*, cross-head D, blade H, springs *j j*, slotted frame E, crank F, shaft *f*, and crank G, when all arranged substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES W. COX.

Witnesses:
HENRY CONNETT,
ARTHUR C. FRASER.