

(No Model.)

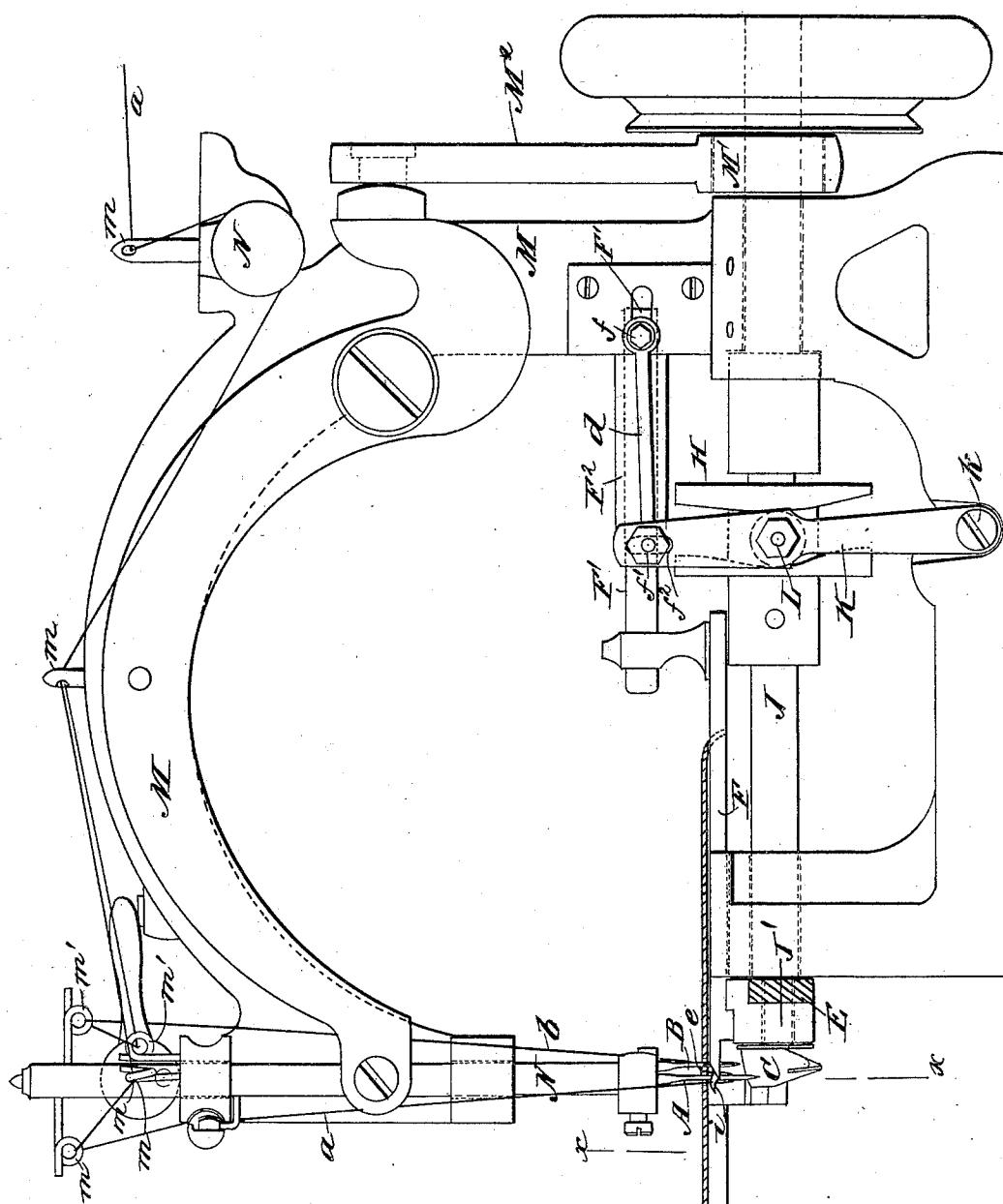
2 Sheets—Sheet 1.

W. C. FOSTER.

METHOD OF STITCHING FABRICS.

No. 397,495.

Patented Feb. 12, 1889.



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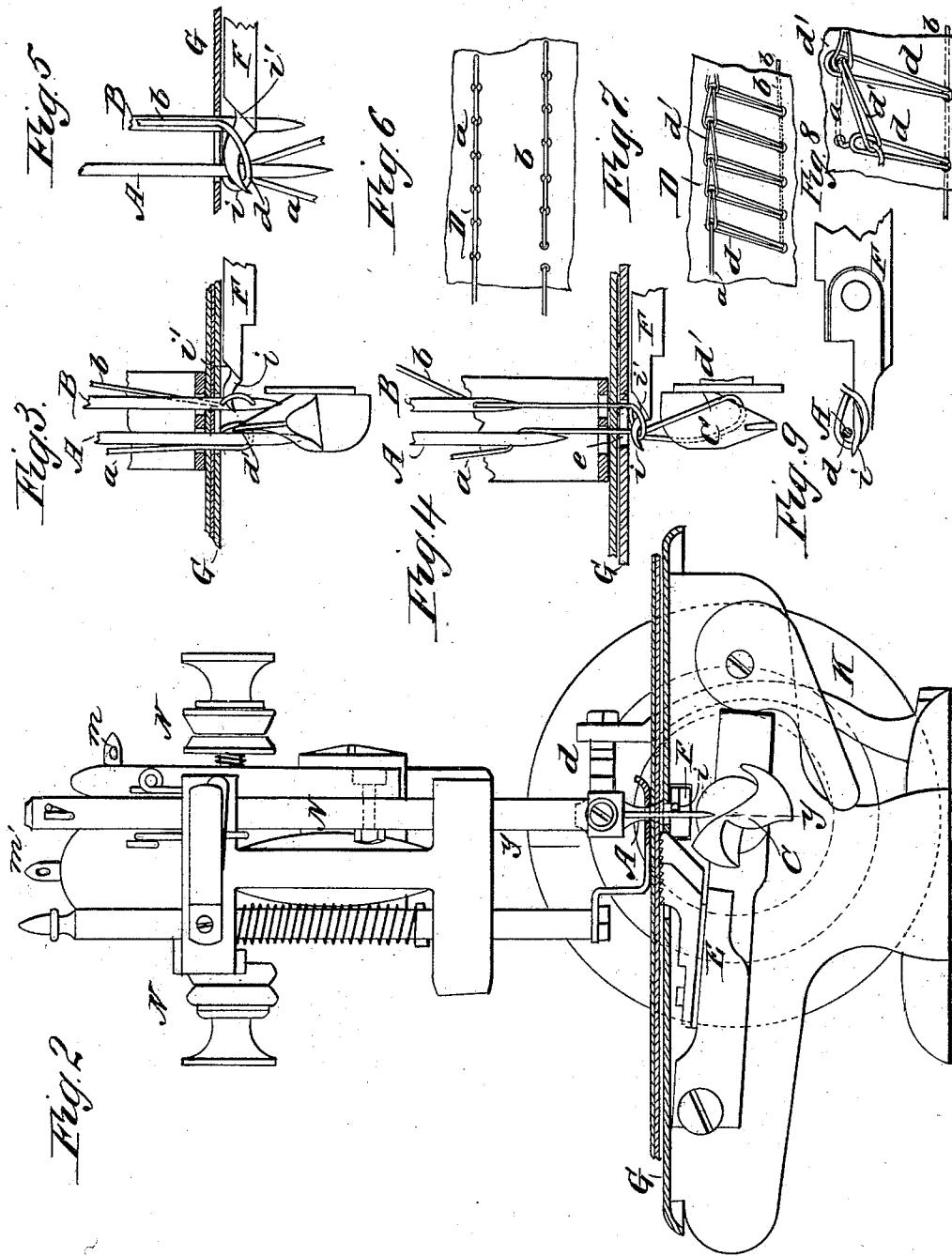
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WITNESSES:

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INVENTOR:

*W. C. Foster*  
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# UNITED STATES PATENT OFFICE.

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## METHOD OF STITCHING FABRICS.

SPECIFICATION forming part of Letters Patent No. 397,495, dated February 12, 1889.

Application filed October 25, 1887. Serial No. 253,295. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM CARR FOSTER, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Method of Stitching Fabrics, of which the following is a full, clear, and exact description.

My invention relates to a new method of forming a double-row seam or "whip-stitch," whereby the side loops are bound at the lock formed by the chain-stitch.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of an ordinary Willcox & Gibbs sewing-machine having my invention applied thereto. Fig. 2 is a sectional side elevation of the same, taken on the line  $x\ x$  of Fig. 1. Fig. 3 is a detailed sectional view on line  $y\ y$  of Fig. 2, needles in their lowermost position and the hooks just entering the loops. Fig. 4 is a similar view showing the needles elevated and the hooks retaining loops. Fig. 5 is a similar view showing the needles at their lowest position again. Fig. 6 shows the upper surface of the seam. Figs. 7 and 8 show the lower surface of the seam; and Fig. 9 is an enlarged view of the horizontally-reciprocating hook for retaining the loop, and illustrates the passing of one needle through the said loop in the descent of the needle.

In forming my new seam I employ two threads,  $a\ b$ . The thread  $a$  is formed into the ordinary chain-stitch made by the Willcox & Gibbs sewing-machine, while the thread  $b$  is passed through the fabric and carried to one side in the form of a loop and bound by surrounding one of the loops of the chain between the adjacent or connected loop and the fabric. In forming this style of seam or stitch I fit in the needle-bar  $N$  two needles,  $A\ B$ , for the threads  $a\ b$ , respectively. The needle  $A$  is set lower than the needle  $B$ , and its eye is at right angles to the line of the feed, while the eye of the needle  $B$  is set in line with the feed and is threaded from the back. The needle  $A$  acts in connection with the rotating hook  $C$

and feed  $E$  in the usual manner to form the 50 chain-stitch seam  $D$ .

$F$  is a horizontally-reciprocating bar held beneath the cloth-plate  $G$  and reciprocated by a cam,  $H$ , secured upon the main shaft  $J$  of the machine. The action of the cam  $H$  is transmitted to the hook-bar  $F$  by the lever  $K$ , fulcrumed at  $k$ , the stud  $L$ , secured to the said lever and entering the groove of the cam, and the pitman-rod  $d$ , connecting the upper end of the lever with the inner end of the rod  $F'$ , which is really a part of the bar  $F$ . This rod  $F'$  enters a sleeve or long bearing,  $F^2$ , made fast to the arm  $M$  of the sewing-machine, and the pitman  $d$  is connected to its inner end by a bolt,  $f$ . The bolt  $f'$ , which connects the pitman  $d$  to the lever  $K$ , passes through a slot,  $f^2$ , in the said lever, so that the outer end of the pitman may be raised and lowered to adjust the stroke of the bar  $F$ . The said bar  $F$  is provided with a hook,  $i$ , formed with a shoulder,  $i'$ , and the groove in the cam  $H$  is shaped to move the bar from a position where the hook  $i$  stands wholly to the right of the needle  $B$ , first to the position shown in Fig. 3, where the hook enters the loop formed by the thread  $b$  and dwells. Then the cam forces the bar  $F$  to the position shown in Figs. 1, 4, and 5, and then withdraws it to the starting-point. The first movement of the bar  $F$  is timed with the movement of the needle-bar  $N$  and the hook  $C$  80 in such manner that hook  $i$  engages the thread  $b$  just as its needle is lifted up through the fabric and just as the point of the hook  $C$  enters the loop of the thread  $a$ . The dwell of the bar  $F$  now causes the hook  $i$  to retain the 85 thread  $b$  below the fabric until the needles start to descend. Then the bar  $F$  moves forward to the position shown in Figs. 4 and 5, forming a loop,  $d$ , in the thread  $b$ , and at the same time carrying it by means of the shoulder  $i'$  to a point immediately below the needle  $A$ , and this is done just in time so that the needle  $A$  will pass through the said loop  $d$ , as illustrated in Figs. 5 and 9. The needle  $A$  having penetrated the loop  $d$ , the bar  $F$  is 95 withdrawn to its original position and the ascent of the needle  $A$  forms the usual loop,  $d'$ , in the thread  $a$ , which is taken up by the

point of the hook C below the loop *d*, as illustrated in Fig. 4. In this manner each chain or link of the chain-stitch seam D is connected or formed below the loops *d* and in or through 5 the same, so that the said loops *d* are held close to the under side of the fabric, and held also from lateral movement.

The cloth-plate G is formed with a slot, *e*, for the two needles A B, and the needle-bar is 10 reciprocated by the needle-arm M, eccentric M', and connecting-rod M<sup>2</sup> in the usual manner, and the feed E is operated by an eccentric, J', on the shaft J in the usual manner, and the machine is provided with a tension, 15 N, for each thread *a b*, and suitable guide-loops, *m* and *m'*, for each thread.

I lay no claim herein to the construction of the machine with and by which I carry into effect my new method of stitching fabrics, as various 20 constructions can be employed, but have claimed one form of machine for making the new seam in my application for Letters Patent filed April 14, 1888, Serial No. 270,633.

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

The method herein described of forming a seam of two threads in connection with a fabric, which consists, first, in passing two loops of thread through the fabric at a short distance apart, one to be formed into a chain-stitch, the other into a transverse loop, then carrying the transverse loop across the space between the loops at the under surface of the fabric and retaining it there, and then passing a second chain-stitch loop down through the fabric, and first through the transverse loop, and then through the previous chain-stitch loop, this operation being repeated to form the seam, the transverse loop occupying 35 a position between the chain-stitch loops and the fabric, substantially as described.

WILLIAM CARR FOSTER.

Witnesses:  
EUGENE CHEVALLIER,  
EMILE DESCHAMPS.