

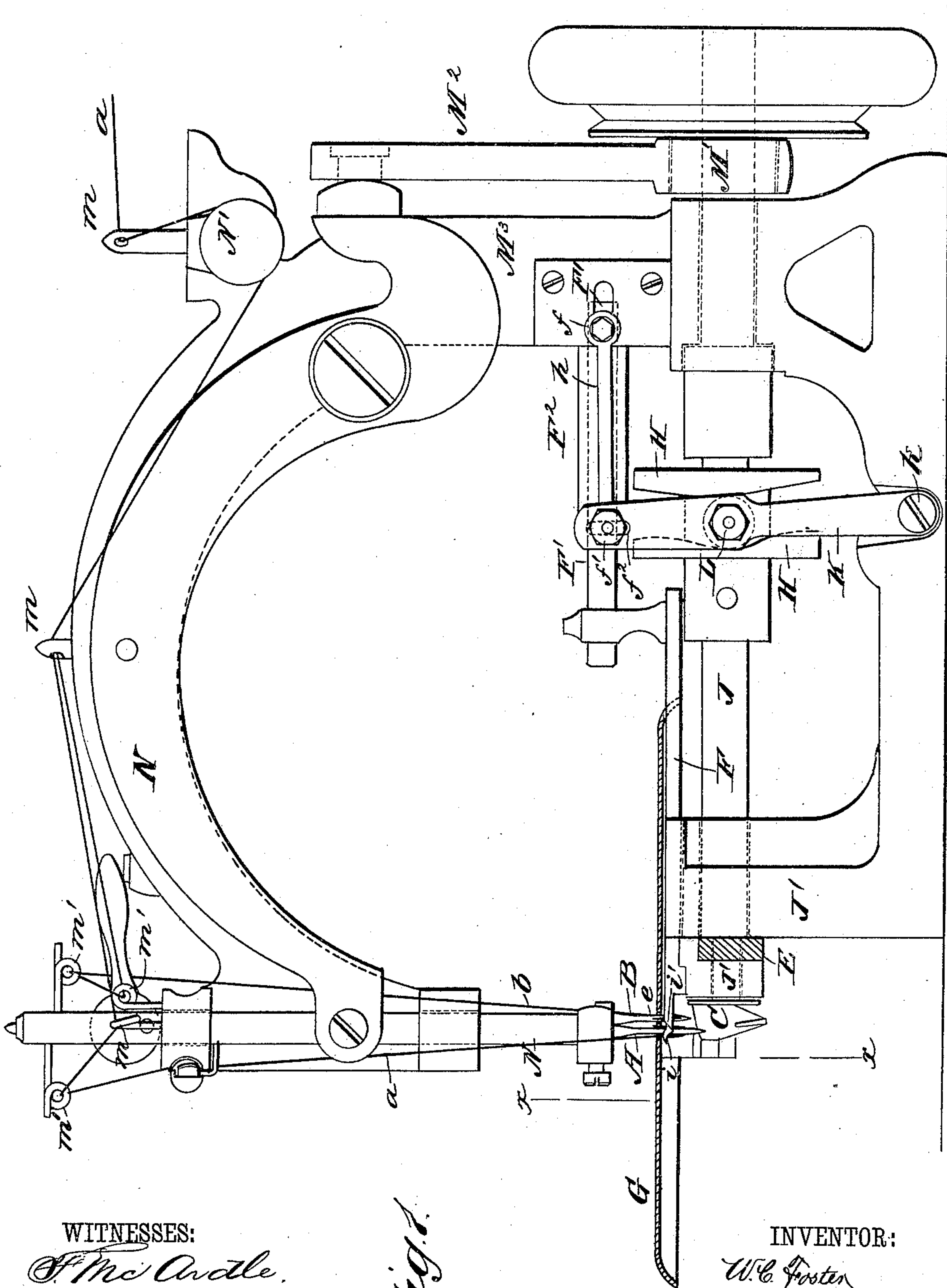
(No Model.)

2 Sheets—Sheet 1.

W. C. FOSTER.
SEWING MACHINE.

No. 397,496.

Patented Feb. 12, 1889.



WITNESSES:

J. Mc Ardle.
C. Sedgwick

Fig. 1

INVENTOR:

W. C. Foster
BY *Munn & Co.*

ATTORNEYS.

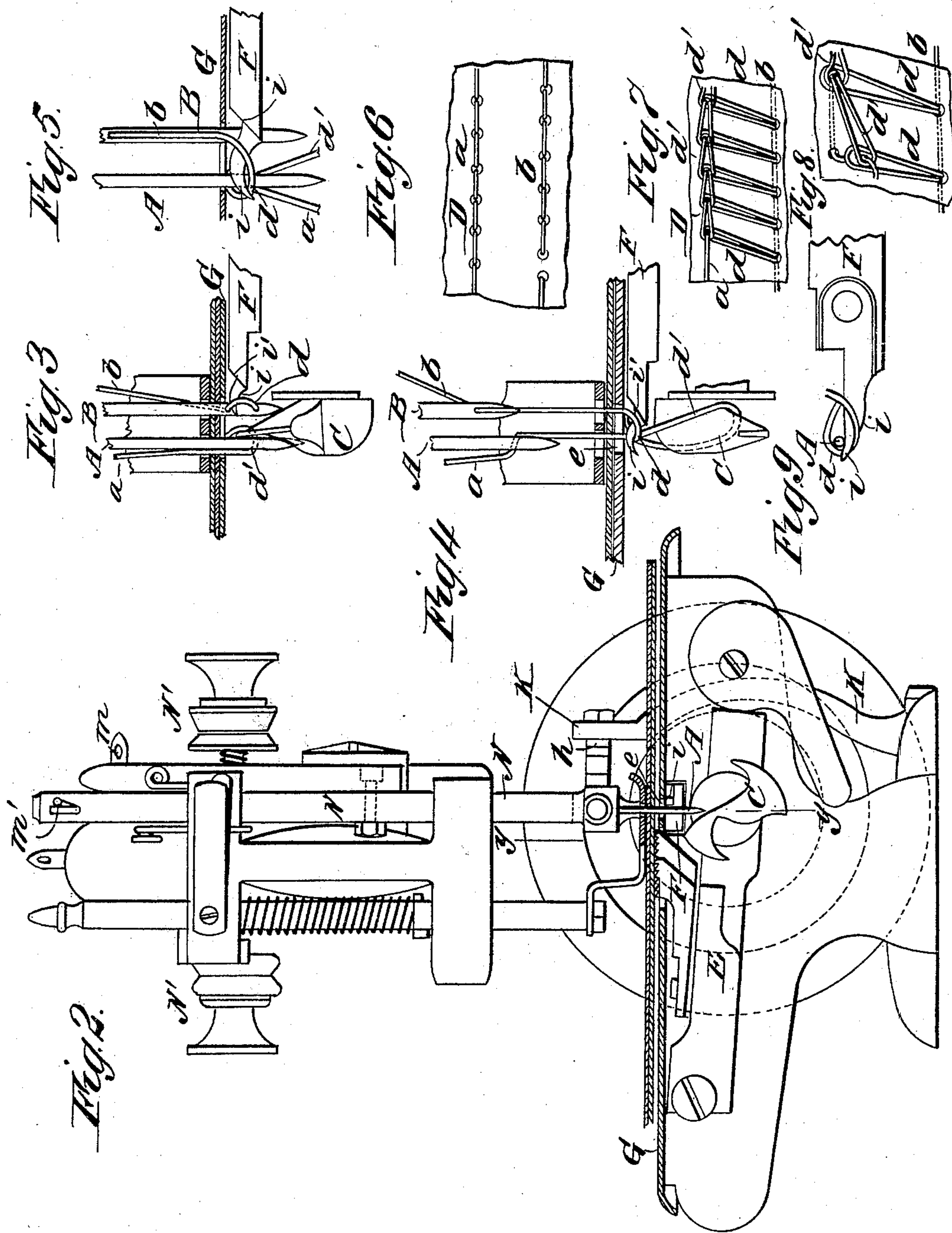
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UNITED STATES PATENT OFFICE.

WILLIAM CARR FOSTER, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO MARI
A. CUMING, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,496, dated February 12, 1889.

Application filed April 14, 1888. Serial No. 270,633. (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
5 Improved Sewing-Machine, of which the following is a full, clear, and exact description.

My invention relates to a sewing-machine for forming a double-row seam or "whip-stitch," wherein the side loops are bound at
10 the lock formed by the chain-stitch; and the invention consists, principally, of a hook and means for reciprocating it, whereby each side loop or stitch is shifted laterally to have the chain-stitch loop thrust through it.

15 The invention also consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

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
25 is a sectional side elevation of the same, taken on the line *xx* of Fig. 1. Fig. 3 is a detailed sectional view on line *yy* of Fig. 2, showing the needles in their lowermost position and the hooks just entering the loops. Fig. 4 is a
30 similar view showing the needles elevated and the hooks retaining the 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
35 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.

40 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
45 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
50 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
55 hook *C* and feed *E*, in the usual manner, to form the 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
60 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
65 pitman-rod *h*, 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, *F²*, made fast to the arm *M³* of the sewing-machine, and the
70 pitman *d* is connected to its inner end by a bolt, *f*. The bolt *f'*, which connects the pitman *h* to the lever *K*, passes through a slot, *f²*, in the said lever, so that the outer end of the pitman may be raised and lowered to adjust
75 the stroke of the bar *FF'*. 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
80 *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
85 with the movement of the needle-bar *N* and the hook *C* 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*.
90 The dwell of the bar *F* now causes the hook *i* to retain the 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
95 *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.
100 The needle *A* having penetrated the loop *d*, the bar *F* is 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
5 each chain or link of the chain-stitch seam D is connected or formed below the loops d and in or through the same, so that the said loops d are held close to the under side of the fabric and held also from lateral movement.
10 The cloth-plate G is formed with a slot, e , for the two needles A B, and the needle-bar is reciprocated by the needle-arm M, eccentric M' , and connecting-rod M^2 in the usual manner, and the feed E is operated by an eccentric, J' , on the shaft J in the usual manner,
15 and the machine is provided with a tension, N' , for each thread $a b$ and suitable guide-loops, m and m' , for each thread.

Reference is hereby made to my application
20 for Letters Patent filed October 25, 1887, and

numbered 253,295, wherein I have claimed the special method of forming the seam employing the mechanism claimed herein.

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

The needle-bar N, provided with two needles, and the cloth-plate G, having the needle hole or slot e for both needles, in combination with stitch-forming hook C, the bar F, placed
30 beneath the cloth-plate in line with the needles, and means, substantially as described, for reciprocating said bar F, the same being formed or provided with a hook or point, i , to enter the loop, and with the shoulder i' , to
35 shift the loop, substantially as described.

WILLIAM CARR FOSTER.

Witnesses:

EUGENE CHEVALLIER,
HENRY SIEBERT.