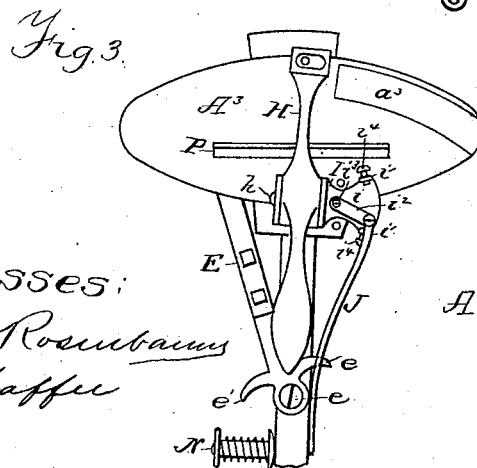
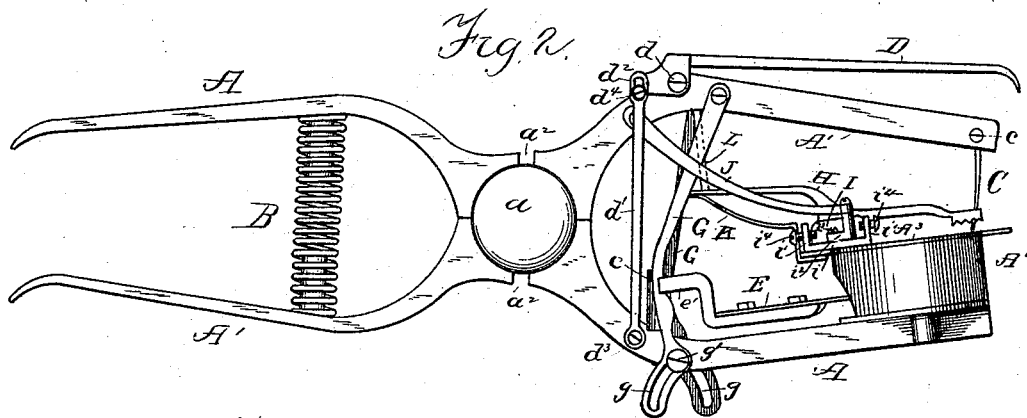
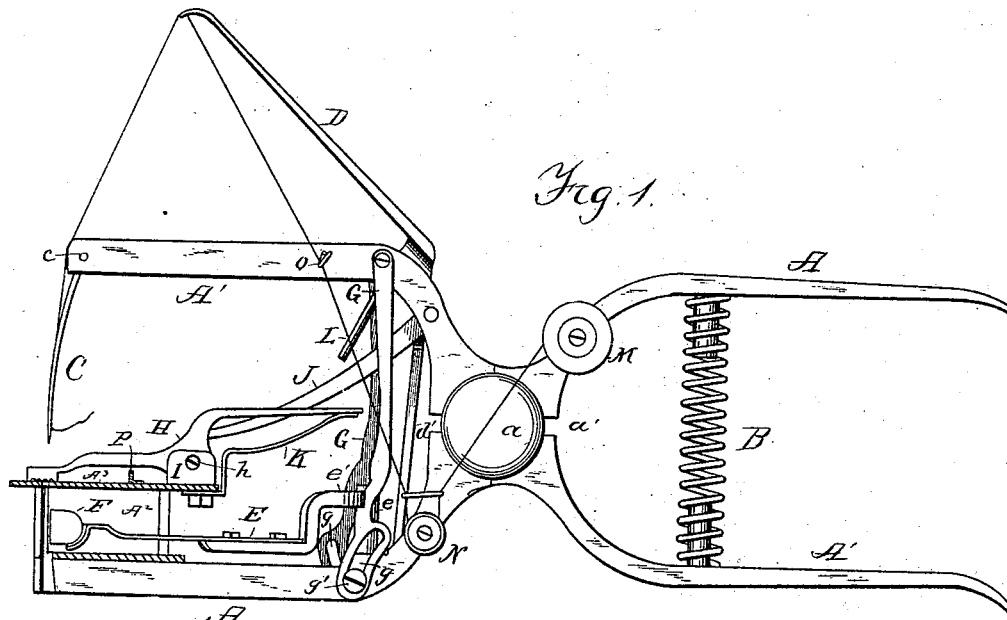


(No Model.)

A. M. BARBER.
SEWING MACHINE.

No. 306,713.

Patented Oct. 21, 1884.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADIN M. BARBER, OF JERSEY CITY, NEW JERSEY.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,713, dated October 21, 1884.

Application filed March 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADIN M. BARBER, of Jersey City, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of my invention is the production of a simple and efficient lock-stitch sewing-machine which may be held in the hand of the operator, and which is of such construction that the stitch-forming and feeding mechanisms will be automatically operated from the movements of the handles by which it is held.

In the drawings, Figure 1 is a side elevation of my machine with the housing forming the work-plate and the shuttle-race in section and the needle elevated. Fig. 2 is a view from the side opposite to that seen in Fig. 1, with the needle depressed to its lowest point. Fig. 3 is a partial plan view with the needle-carrying arm removed.

A and A' indicate two levers pivoted near their centers and halved or let into each other at the place of intersection, somewhat like a pair of ordinary pinchers. These levers are held together by a bolt or pivot, *a*, having large flanges or heads at both ends, one of the said flanges or heads being screwed onto the bolt. The large flanges or heads serve as guides to steady the levers A and A' and keep them in alignment with each other when in operation. The crossed levers A and A' are slightly cut-away near the point of intersection, the cut-away portions forming recesses *a'* or *a''* between the vertical and horizontal shoulders of the levers. These recesses permit the levers to move on each other to a limited extent, or until the shoulders adjacent to the recesses come in contact, the vertical shoulders coming together when the needle is raised to its highest point, as shown in Fig. 1, and the horizontal shoulders being in contact when the needle is entirely down, as shown in Fig. 2. Between the handles of the levers is placed a spring, B, for forcing said handles apart.

C is an ordinary curved eye-pointed needle secured to the forward end of the lever A' preferably by a set-screw, *c*, as shown.

D is the take-up lever, having a thread-eye at its forward end. Said take-up lever is secured by a pivot-screw, *d*, to the lever A', and is connected by a link, *d'*, with the lever A, the link being attached to the take-up lever and lever A by screws *d''* *d'''*. The upper end of the link *d'* at its point of connection with the screw *d''* is provided with a slot, *d'''*, which permits of a limited movement of the levers A and A' as they begin to approach each other, and also when they commence their return movement, without causing any movement of the take-up lever on its pivot. The purpose of this construction is to permit the take-up lever to remain stationary relative to the needle until the point of the latter has entered the work, thus holding the thread taut, and preventing any slack from getting in the way of the needle. As the needle continues to descend, the take-up turns on its pivot, its forward end approaching the needle, thus yielding the thread for the requirements of the stitch. After the needle has descended to its lowest point, and has commenced to rise, the take-up lever will momentarily remain stationary relative to the needle while the shuttle is passing through the loop of needle-thread, after which the take-up will be turned on its pivot by the link *d'*, and its forward end will rise quickly and tighten the stitch.

E is the shuttle-lever, vibrating on a pivot, *e*, secured to the lever A, and provided with laterally-projecting ears or arms *e'* *e''*. The shuttle-lever E is preferably formed of two parts, one of which is adjustable relative to the other by means of slots and set-screws, as shown; said lever having at its forward end a shuttle-carrier of suitable form to receive a shuttle, F, which may be of any well-known construction. The shuttle F vibrates in a housing, A², supported on the lever A, the front wall of said housing forming the shuttle-race.

A³ is the work-plate covering the housing and having a curved slide, *a''*, which may be removed for the insertion or removal of the shuttle.

To the lever A' are pivotally attached two links, G G, formed with cam-slots *g g* at their lower ends, and screw-pins *g'* *g''* attached to the lever A are arranged in said slots and serve to vibrate said links on their pivots when levers A and A' are operated. The links G G

are arranged adjacent to the arms $e' e'$ of the shuttle-lever, and as the cam-slot g of one link is inclined in a direction opposite to the cam-slot of the other link, it follows that as the levers A and A' approach each other one of the said links will be forced into positive contact with one of the arms e' , thus swinging the shuttle-lever on its pivot in one direction, and as the levers A and A' recede from each other the other link will be forced against the other arm e' , thereby returning the shuttle-carrier to its first position.

H is the feeding-lever, which also serves the purpose of a presser-foot, said lever having a slot at its forward end for the passage of the needle, and a serrated or roughened under surface at its forward end to insure proper engagement with the work. The lever H vibrates vertically on a horizontal pivot, h , passing through ears of a vertically-pivoted bracket, I , having a lateral extension, i , provided with ears $i' i'$, between which is arranged the free end of a small lever, i^2 , swinging horizontally on a vertical pivot, i^3 , attached to the bracket I , said lever being connected to a link, J , with the lever A' . The ears $i' i'$ are preferably provided with adjusting-screws $i^4 i^4$, with which the free end of the lever i^2 will come in contact as it swings back and forth, and as the space between the ends of the said screws is diminished by turning them in toward each other the horizontal movements of the bracket I , and consequently of the lever H , carried thereby, will be increased, and vice versa. A spring, K , secured to the working-plate A^3 , presses upward against the rear end of the lever H , forcing the forward end of said lever against the work. A pin, L , projecting downward from the lever A' , comes in contact with the rear end of the feed-lever H when the lever A' is depressed, thus forcing the rear end of the feed-lever downward and raising its forward end from the work. The needle-thread is carried by a spool, M , from which it passes through a tension device, N , and a guide-eye, O , on the lever A' to the eye in the end of the take-up lever, and thence to the needle. P is a work guide or gage secured to the work-plate A^3 .

The operation of my machine will be readily understood from the foregoing. The needle and shuttle having been properly threaded in the usual manner, and the work being placed beneath the feeding presser-foot, the handles of the levers A and A' will be grasped by the operator and repeatedly compressed together, their return movements being effected by the spring B . As the needle descends, the shuttle-lever and shuttle will be vibrated by the links $G G$, as heretofore described, to pass the shuttle through the loops of the needle-thread. After the point of the needle has entered the work, the pin L , impinging against the rear end of the feed-lever H , will raise the forward end of the said lever and lift the latter from the work, and just as the feed-lever has been so lifted the link J will swing the lever i^2

against the forward adjusting-screw, i^4 , thus swinging the bracket I and the feed-lever H horizontally, the front end of said lever moving toward the left, Fig. 3. As the needle rises and the pin L leaves the rear end of the feed-lever, the forward end of said lever is forced upon the work by the spring K , and after the needle has entirely left the work the return movement of the lever A' and link J will swing the lever i^2 into contact with the rear screw, i^4 , swinging the bracket I on its pivot, and causing the forward end of the feed-lever to move to the right, Fig. 3, thus feeding the work forward for a new stitch. In the meantime the take-up will have operated to yield the thread to the needle as the latter moved downward and to tighten and complete the stitch as the needle ascended, as hereinbefore fully described. Thus it will be obvious that the stitches will be perfectly formed and the work properly fed by an effective four-motioned feed, the work being held stationary by the needle when the feeding presser-foot is lifted for the return movement.

Having thus described my invention, what I claim is—

1. The combination, with two hand-levers adapted to be grasped by the operator, of a needle carried by one of the said hand-levers, a shuttle-race and a shuttle-lever carried by the other of the said hand-levers, and mechanism connected with the said hand-levers for operating said shuttle-lever, substantially as described.

2. The combination, with two hand-levers adapted to be grasped by the operator, of a needle carried by one of the said hand-levers, a feeding device supported upon the other of the said hand-levers, and mechanism for imparting a four-motioned movement to said feeding device to advance the work when the needle is out of the same, substantially as described.

3. The combination, with two hand-levers adapted to be grasped by the operator, of a needle and a take-up carried by one of the said hand-levers, a shuttle-race and a shuttle-lever carried by the other of the said hand-levers, and mechanism connected with the said hand-levers for operating said take-up and shuttle-levers, substantially as described.

4. The combination of the levers A and A' , spring B , housing A^3 , and shuttle-lever E , supported on the lever A , with mechanism for operating said shuttle-lever from the lever A' , as set forth.

5. The combination, with the levers A and A' and spring B , of the shuttle-lever E , having the arms $e' e'$, the links $G G$, having the slots $g g$, and the guiding-pins $g' g'$, as described.

6. The combination, with the levers A and A' , of the take-up lever D , pivoted to the lever A' , and means for operating said take-up lever intermittingly from the lever A , substantially as described.

7. The combination, with the levers A and A', of the take-up lever D and link d', as set forth.

5 8. The combination, with the hand-levers A and A', of the feed-lever H and mechanism connected with said hand-levers for imparting a four-motioned movement to said feed-lever, as set forth.

10 9. The combination, with the hand-levers A and A', of the feed-lever H, mechanism connected with the said hand-levers for imparting a four-motioned movement to the said feed-lever, and means for regulating the throw of the said feed-lever, as set forth.

15 10. The combination, with the hand-levers A and A', of the feed-lever H, pivoted bracket I,

having extension i, provided with ears i' i'', the lever i'', the link J, and the spring K, as set forth.

11. The combination, with the hand levers A 20 and A', of the lever H, pivoted bracket I, having extension i, provided with ears i' i'', the adjusting-screws i' i'', the lever i'', the link J, and the spring K, as set forth.

In testimony that I claim the foregoing I 25 hereunto affix my signature in the presence of two witnesses.

ADIN M. BARBER.

Witnesses:

WM. A. ROSENBAUM,
V. D. STOCKBRIDGE.