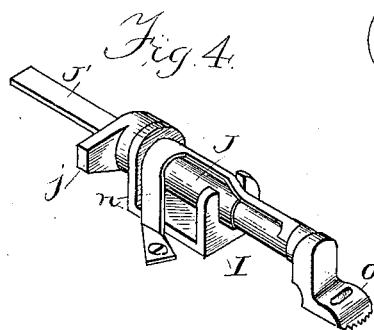
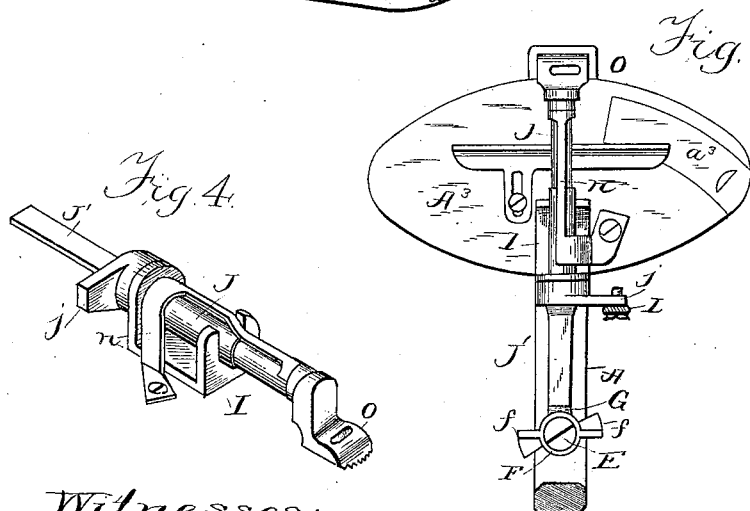
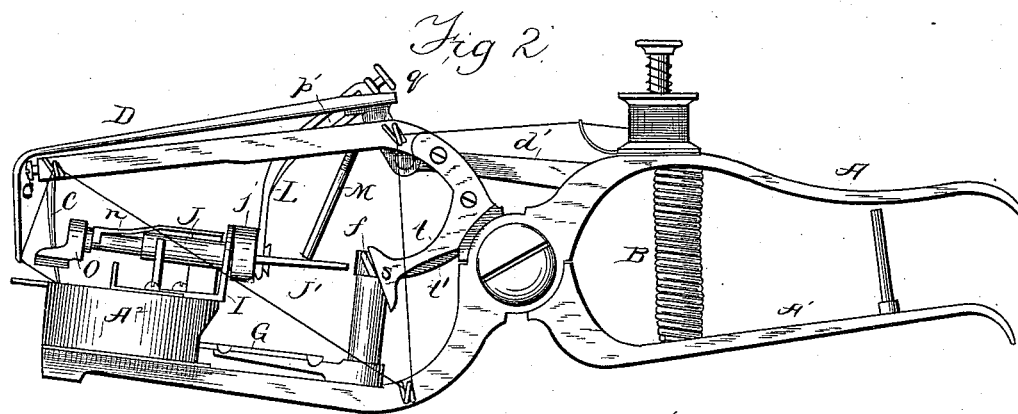
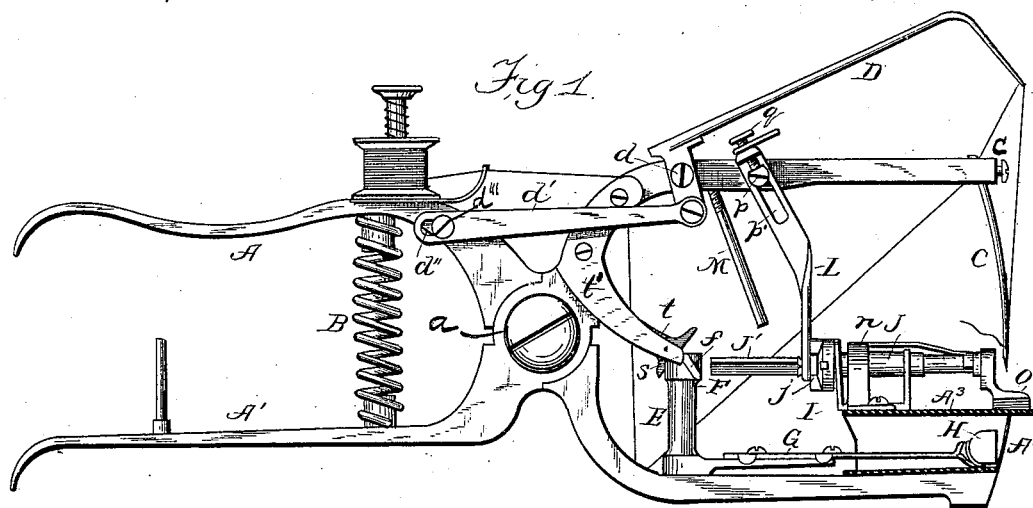


(No Model.)

A. M. BARBER.
HAND SEWING MACHINE.

No. 306,996.

Patented Oct. 21, 1884.



Witnesses;

Wm. A. Rosenbaum
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UNITED STATES PATENT OFFICE.

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

HAND SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,996, dated October 21, 1884.

Application filed September 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADIN M. BARBER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Hand Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to sewing-machines operated directly by hand, and is an improvement on an invention for which application No. 123,617 was filed by me in the United States Patent Office, March 10, 1884.

In the drawings, Figure 1 is a side elevation of my machine with the needle elevated and the housing forming the work-plate and the shuttle-race in section. Fig. 2 is a view from the side opposite to that seen in Fig. 1, showing the needle depressed to its lowest point. Fig. 3 is a partial plan view, the needle-carrying arm being removed. Fig. 4 is a perspective showing in detail the feed-dog or spacer and its immediate connections.

A and A' are two levers pivoted to each other at *a* after the manner of ordinary pinchers, or in any other convenient manner. These levers are normally held apart by a spring, B, between their handles.

A' is the needle-carrying lever, the curved needle C being secured to its forward end by the set-screw *c*, as shown. The take-up lever D is also attached to the lever A', being pivoted to the same at *d*. It is connected by a link, *d'*, with the lever A. The take-up lever D being thus pivotally connected with both levers A and A', it is evident that any change of relative position between these two levers would naturally affect the position of the take-up lever. It is desirable, however, that the take-up lever should remain stationary with respect to the lever A' at two different times in the operation of the machine, once before the needle has entered the work, to prevent any slack from getting in the way of the needle, and once to allow the shuttle to pass through the loop of the needle-thread. I secure this function for my take-up lever by making a slot, *d''*, in the link *d'* at its point of attachment to the lever A, whereby at the be-

ginning of the approach and separation of the levers A and A' some motion is lost in carrying the set-screw *c* from one end of the slot *d''* to the other, and the take-up lever is allowed to remain stationary. The lever A carries a stud or post, E, upon which a sleeve, F, is secured, having flukes or flanges *f*. To the sleeve F is attached by suitable means the shuttle-lever G, which lever is preferably made in two parts, as shown, so as to be longitudinally adjustable. H is the shuttle carried by the lever G. A housing, A², is supported on the lever A, and its front wall forms the shuttle-race. A work-plate, A³, covers the housing, and has a curved slide, *a*³, which may be removed for the insertion or removal of the shuttle.

The means for operating the shuttle-lever, besides those already mentioned, are two arms, *t t'*, attached one to each side of the lever A', and so arranged that their cam-faced points or toes are located one behind each fluke or flange of the sleeve F. By this construction, when the two levers A and A' are caused to approach each other in the operation of the machine, the point *s* of the arm *t* will press forward one of the flukes *f* of the sleeve F, and cause the shuttle-lever G to be moved in one direction, and when the levers are released and are then separated by the action of the spring B the point *s* of the arm *t'* will act similarly on the other fluke *f* of the sleeve F and turn the lever G in the opposite direction. The paths of movement of the arms *t t'* are such that while both are in constant contact with the flukes *f* they do not work against each other.

It remains now to describe my feeding mechanism, which is constructed as follows: In a frame, I, attached to the working-plate, is mounted a shaft, J, to which a crank, *j*, is secured. One of the bearings of the shaft J is a yoke or crotch, as shown in Fig. 4. Extending from the crank to the lever A', as shown, is a link, L, which is pivoted to the crank and secured to the lever by a slot and set-screw. A rod or pin, M, attached to the lever A', is so arranged as to strike against and depress an extension, J', of the shaft J, and thereby raise the opposite end of the shaft, together with the attached feed-dog or spacer O. A spring, *n*, normally presses the feed-

dog or spacer O against the fabric to be operated on.

The operation of the feeding mechanism is as follows: On the approach of the levers A A', when the spring B is compressed, the screw *p* moves downward in the slot *p'*, but does not reach the bottom thereof until after the rod or pin M strikes against the extension J' of the shaft J and raises the feed-dog or spacer O. The movement being continued, the screw *p* strikes the bottom of the slot and the link L is depressed, carrying with it the crank *j*, and thus swinging the shaft J in its bearings. The feed-dog or spacer, having been raised, however, before the shaft is swung, does not operate to move the fabric backward. In the reverse movement of the levers the pin or rod M is first removed from the extension J' of the shaft J, and afterward the shaft J is swung while the feed-dog is resting on the fabric. An adjusting-screw, *q*, serves to regulate the operative length of the slot *p'*, and thereby the length of the feed-dog and of the stitch.

Having thus fully described my invention, I claim—

1. The combination, in a hand sewing device, with the operating levers, one of which is provided with arms *t t'*, of the horizontally-vibrating shuttle-lever provided with the flukes or cams *f f*.

2. The combination, in a hand sewing device, of the levers A A', one of the same being provided with cam-faced arms *t t'*, the horizontally-vibrating shuttle-lever having the

flukes or cams *f f*, and the shuttle, substantially as set forth.

3. In a hand sewing device, the combination, with the hand-levers A A', of a rock-shaft carrying the feed-dog, and mechanism, as extension J', rod M, and link L, for tilting the feed-shaft, and for imparting an oscillating motion thereto, substantially as described.

4. In a hand sewing device, the combination of the levers A A', the feed-dog and its supporting rock-shaft, provided with the rear extension, J', and crank-arm, the link L, the rod, and the spring, substantially as described.

5. In a hand sewing device, the combination, with the operating-levers A A', and an oscillating feed-shaft provided with a crank-arm, of the slotted operating-link L, connecting said crank-arm with one of the operating-levers, and means for regulating the length of stitch by changing the operative length of the slot in said link, substantially as described.

6. In a hand sewing device, the combination, with the operating-levers A A', and an oscillating feed-shaft provided with a crank-arm, of the slotted operating-link L, provided with set-screw *q*, for regulating the length of stitch, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADIN M. BARBER.

Witnesses:

STEPHEN O'CONNOR,

ELMER A. BEAMAN.