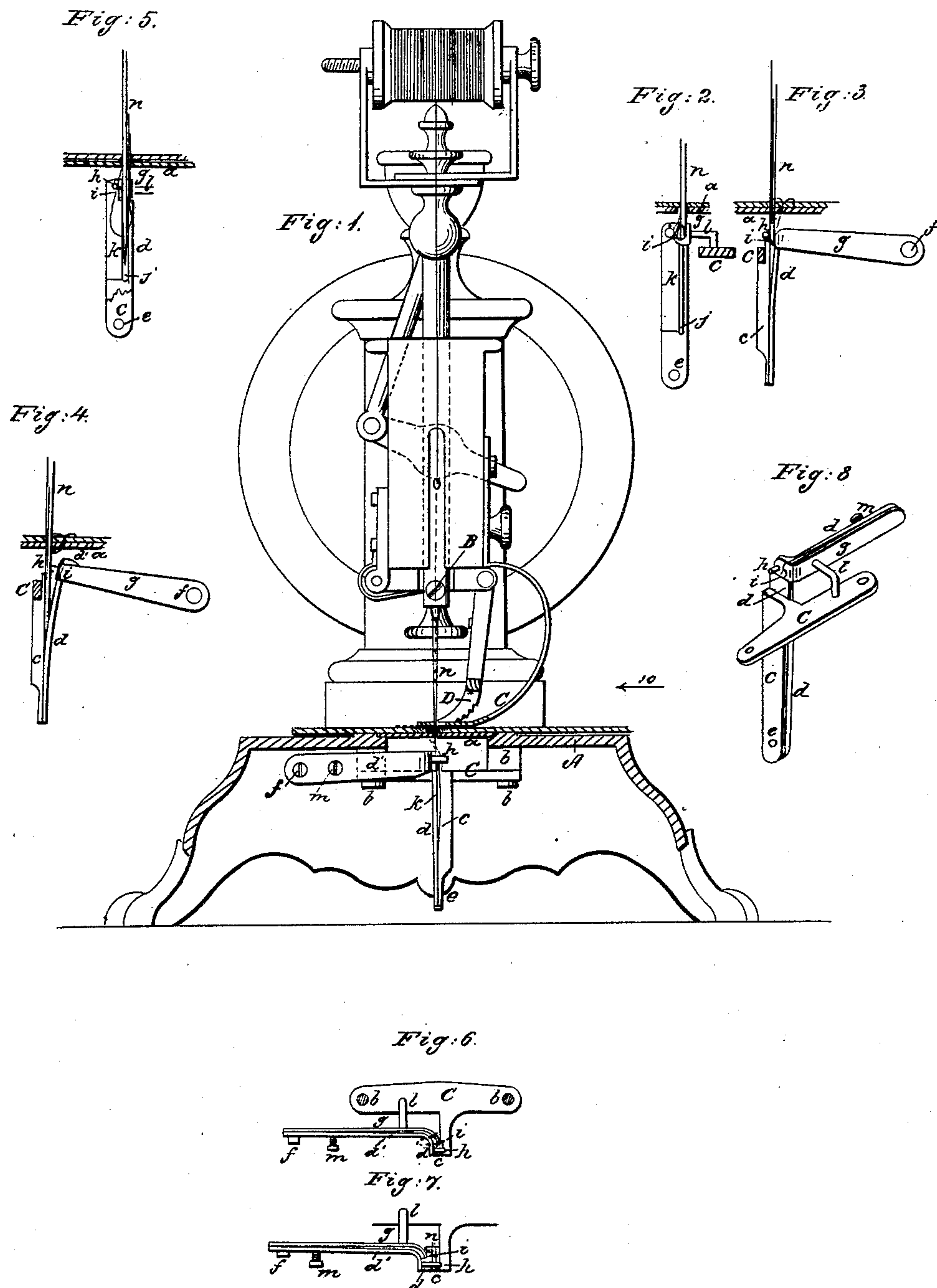


G. W. HUBBARD.  
Sewing Machine.

No. 21,537.

Patented Sept. 14, 1858.



# UNITED STATES PATENT OFFICE.

G. W. HUBBARD, OF MERIDEN, CONN., ASSIGNOR TO HIMSELF, WALTER HUBBARD, W. L. BRADLEY, AND N. L. BRADLEY, ALL OF SAME PLACE.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 21,537, dated September 14, 1858.

*To all whom it may concern:*

Be it known that I, GEORGE W. HUBBARD, of Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of a machine to which my improvement is applied, showing it with the front part of the table cut away, and the pressure-pad E, feeding-dog D, and feed-plate *a* in section to expose the needle and the looper to view. Fig. 2 exhibits the needle and a section of the looper, taken at right angles to the plane of Fig. 1, and seen looking in the direction of the arrow 10 in Fig. 1. Fig. 3 is a back view of the needle and looper, with the needle in a position corresponding with Fig. 2. Fig. 4 is back view of the same, exhibiting the needle in a different position to Fig. 3. Fig. 5 is a sectional view of a similar character to Fig. 3, but exhibiting the needle in a position corresponding with Fig. 4. Fig. 6 is a plan or top view of the looper, exhibiting it in a condition corresponding with Fig. 1. Fig. 7 is a similar view, exhibiting it in a condition corresponding with Figs. 4 and 5. Fig. 8 is a perspective view of the looper alone, looking toward its back side.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a looper of novel construction operated by the "eye-pointed" needle, and operating in combination therewith, in the manner hereinafter specified, to sew what is known as the "chain-stitch" with a single thread.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the table. *a* is the stationary feed-plate, upon which the cloth or other material is placed to be sewed, and through a hole in which the needle passes.

B is the needle-bar, working vertically in a stationary guide in a well-known manner, and carrying the needle *n*, which is of the kind generally known as the "eye-pointed" needle, is grooved on its back side, and has its eye ar-

ranged nearly at right angles to the direction of the feed.

C is a plate constituting the stock of the looper, secured by screws *b b* to two projections on the bottom of the table. From this plate depends a rigid and stationary plate, *c*, which occupies such a position parallel with the needle, and on that side thereof toward which the material is fed, that the needle will pass close to it; and to the lower end of this plate *c* is attached, by a rivet, *e*, or other suitable means, an elastic angle-piece, *d d'*, the lower vertical portion, *d*, of which is capable of springing close up to the plate *c*, and the upper horizontal portion, *d'*, of which stands parallel with the direction of the feed on that side of the needle from which the feed motion carries the material. The portion *d'* of the angle-piece *d d'* has attached to its extremity, by a rivet, *f*, or other suitable means, a flat piece, *g*, of steel or other elastic metal, the extremity of which is curved and beveled, and formed with a hook, *i*, as shown in Figs. 6, 7, and 8, the said hook being arranged just in front of the needle and close above the top of the plate *c*, and the beveled part of the elastic hook-piece *g*, above and behind the hook, being so arranged that the needle in its descent will act as a wedge upon it and force the angle-piece *d d'* and attached elastic hook-piece *g* away from the piece *c*, as shown in Fig. 4.

The inner faces of the two plates *c* and *d* are slightly grooved to guide the needle, as shown at *j* in Figs. 2 and 5, and in front of this groove the said plates are slightly recessed, as shown at *k k* in Figs. 2 and 5, and also in Fig. 1, in the latter of which figures the back parts of the plates are supposed to be close together. Near the top of the front upright portion, *d*, of the angle-piece *d d'* there is secured a pin, *h*, which passes over the top of or through a hole in the piece *c*, the duty of which pin is to guide the loop, as will be hereinafter explained.

Behind the hook-piece *g* there is attached to the looper-stock C a stationary guide-pin, *l*, against the end of which the hook-piece *g* works, and a set-screw, *m*, is applied through the plate *d'* to press against the elastic hook-piece *g* to adjust the hook in proper relation to the needle, that the point of the needle, in its descent, may pass close behind the hook and



pass into a loop that has been retained on the said hook, the beveled form of the hook-piece at the back of the hook being such as to permit the needle to pass without difficulty between the said hook and one side of the loop that has been retained by the hook.

The operation of the looper in sewing is as follows: The needle, having the thread (shown in red color) passing through its eye from the back side, or the side on which the hook *i* is arranged, descends behind the said hook *i*, between plate *c* and part *d* of the plate *d'*, and in so doing it springs the part *d* away from the stationary plate *c*, and before it finishes its descent it, by the said action on the part *d*, draws the hook-piece *g* and hook from in front of the needle, in the manner illustrated in Fig. 4. As the needle rises again and the thread below the material slackens on the ungrooved side of the needle, which is in front, the slack is guided in the manner illustrated in Fig. 5, by the pin *h* and by the faces of the plates *c d*, into the recess *k*, where there is plenty of room for it, even after the plates have closed together. During the rise of the needle and the closing up of the plate *d* to the plate *c* by its own elasticity the hook-piece *i* returns in front of the needle, and thus passes between the needle and the slack of the thread, as shown in Fig. 5, so that as the slack is drawn up by the continued ascent of the needle it, being prevented from escaping from the hook by the plates *c d*, is caught by the hook and retained thereon in the form of a loop, as illustrated in Figs. 1, 2,

3, and 6. The feed taking place while the needle is out of the cloth or other material draws the loop into such a position (illustrated in Figs. 1, 2, and 3) that the needle in its next descent passes through and carries the thread through it before descending low enough to draw the hook *i* out by its previously-described action on the plate *d*, as illustrated in Fig. 4. The continued descent of the needle after the hook *i* is drawn out of the loop tightens the said loop, and as the needle ascends another loop is formed in the same manner as the first one, and left by the needle, after the latter is withdrawn from the first loop and from the material protruding through the first loop, and held by the hook *i* in a position for the needle to pass through and carry a thread through it in the same manner as through the first loop, and repeat its operation, which repetition may be continued to produce a seam of any length.

I do not claim the operation of the looper by means of the needle, as this was patented by T. J. W. Robertson, May 22, 1855; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The looper composed of the fixed plate *c*, the elastic plate *d d'*, and the hook *i*, applied to be operated by and to operate in combination with the needle, substantially as herein specified.

GEO. W. HUBBARD.

Witnesses:

GEORGE W. SMITH,  
ORVILLE H. PLATT.