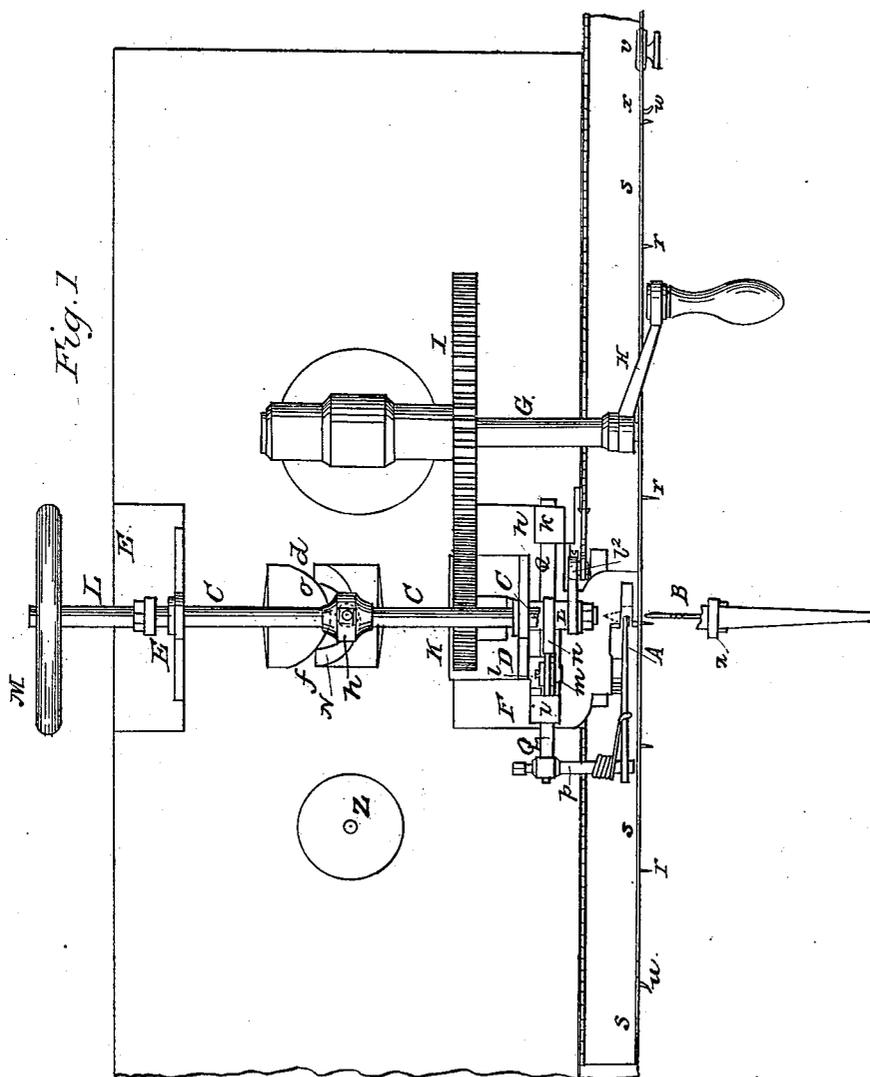


J. S. CONANT.
Sewing Machine.

3 Sheets—Sheet 1.

No. 6,437.

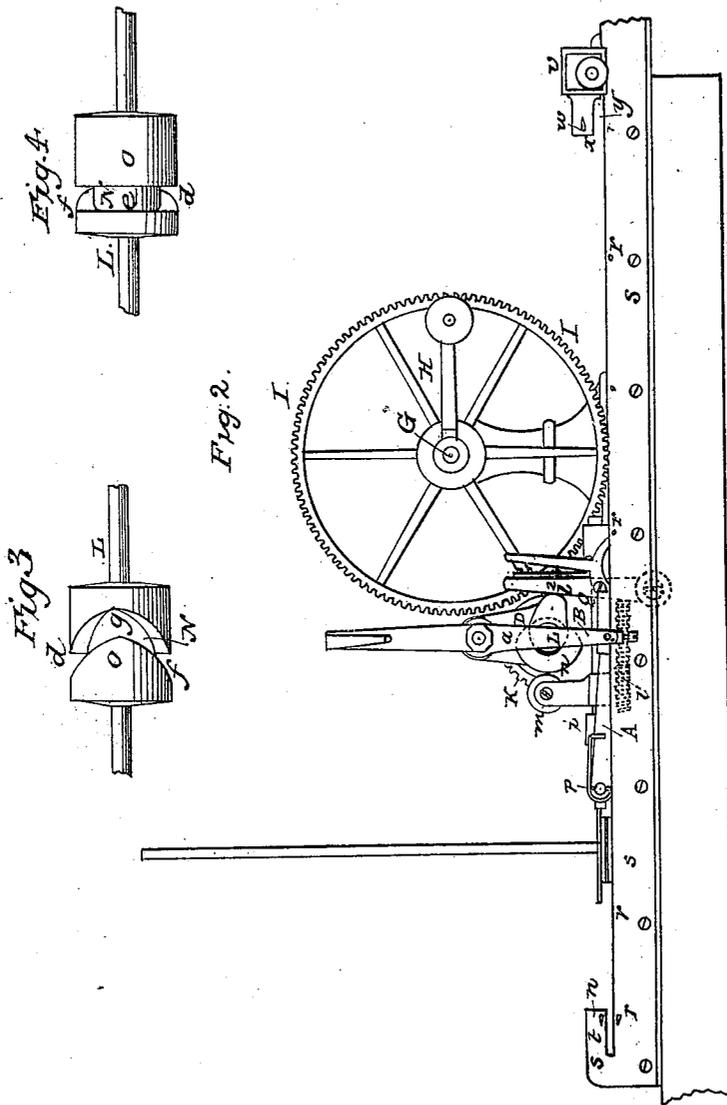
Patented May 8, 1849.



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UNITED STATES PATENT OFFICE.

JOTHAM S. CONANT, OF DRACUT, MASSACHUSETTS.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 6,437, dated May 8, 1849.

To all whom it may concern:

Be it known that I, JOTHAM S. CONANT, of Dracut, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Sewing Cloth; and I do hereby declare that the same are fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a top view of my improved sewing-machine. Fig. 2 is a front elevation of it. Fig. 3 is a top view of the needle-cam. Fig. 4 is a bottom view of it. Fig. 5 is a side view of it. Fig. 6 is a longitudinal and vertical section of the hook-slide and cam, the same being made so as to exhibit the spring for drawing the hook forward. Fig. 7 is an end elevation of the machine.

My improved machine forms or makes what is termed the "chain-stitch" sewing, and effecting the same by the united actions of a hook and a needle, as does the machine well known as the "Morey machine," invented wholly or partially by Charles Morey, my machine being an improvement thereon.

In the drawings above mentioned, A denotes the hook, and B the needle, the slide-shaft C of the latter being represented in Fig. 1 as broken away, in order to exhibit the needle, which is situated directly underneath it. The needle is attached to a vertical arm, *a*, which extends down from the slide-shaft C, the slide-shaft being arranged as seen in Fig. 1, and made to be supported by and to slide through two standards, D F, which project up from a horizontal bed-plate, F.

G is the driving-shaft; H, the turning-crank thereof; I, a gear-wheel on the driving-shaft, and which engages with a pinion, K, on the cam-shaft L, which is disposed below and parallel with the slide-shaft C, as seen in Fig. 7, and has a small fly-wheel, M, affixed on some convenient part of it.

In the Morey and other machines which make the chain-stitch sewing the needle is kept in constant reciprocating rectilinear motion while the stitches are being formed or made in the cloth. In my machine the needle is suffered to pass through the cloth, and re-

mains entirely at rest while the hook is in the act of passing across it for the purpose of forming a loop. If the needle is kept in motion while the hook is in act of seizing the thread lying on the top of the needle, there is great liability of an occasional or frequent failure of the hook to catch the thread. By causing the needle to remain at rest while the hook is being retracted the hook never or seldom fails to seize the thread. For this purpose I make the part *def* of the cam-groove N of the cam-cylinder O to extend partially around the circumference of the cylinder O in a plane at right angles to the axis of the cylinder. The remaining parts of the groove—viz., *dg* and *gf*—are helically curved in such manner as to impart to the slide-shaft C, while the projection *h* is moving through them, a reciprocating rectilinear movement in direction of its length, and so as to cause the needle to enter and depart from the cloth. In other words, the cam-groove around the entire cylinder is so constructed as first to cause the needle to pass into and through the cloth, next to remain at rest while the hook is being retracted or carried back over it, and finally to be drawn out of the cloth.

The hook is fixed or jointed to an arm, P, which projects from a horizontal slide-bar, Q, arranged as seen in Figs. 1, 2, and 6 of the drawings. The said slide-bar moves or slides longitudinally in bearings *i k*, and has an arm, *l*, projecting upward from it, and carrying a friction-roller, *m*. A cam, *n*, fixed on the cam-shaft, operates against the said friction-roller so as to force back the same and the hook. A helical spring, *l'*, is placed underneath the slide-bar Q, and is attached at one end to the bar or to the arm *l*, and at its other end to the bed-plate F, or to the lower part of a lever, *l'*, attached to said plate.

By the above it will be seen that the spring is employed to advance the hook, the cam being applied for the purpose of retracting it. In other machines of this kind the spring retracts the hook, while the cam advances it. It is often the case that the thread is uneven or thicker in some parts than others, or has some small knots, bunches, or matter in it, which causes it to require a considerable increase of power to draw it through the cloth. Thus it

will be seen that the power required to draw the thread through the cloth varies, or is more at some times than it is at others, and it is found by experience that it is often so great as to entirely overcome the retractive power of the spring, and thereby prevent the formation of the loop. By employing the cam to produce the movement of the hook required to draw the thread through the cloth during the formation of the loop, we make use of a power which is certain and positive in its operation; and by applying the spring to simply advance the hook we put a constant or unvariable duty upon it—one which it can readily and easily perform, the retractive power of it being only such as may be necessary to produce the advancement of the hook.

The cloth-bar, or that which sustains the cloth during the operation of forming the stitches, is seen at S. The machinery which produces the regular intermittent longitudinal movement of it does not essentially differ from that used in the Morey machine, or that machine for which an application for a patent has been lately made in the name of Charles Morey and Joseph B. Johnson. From the front face of the cloth-bar a series of points or short pointed wires, *r r r*, is made to project, the said arms being placed at regular intervals apart. These wires serve to hold the two pieces of cloth while they are being sewed together, they being stretched thereon, and with their edges extending about three-eighths of an inch above and parallel with the line or series of pointed wires. Near one end of the cloth-bar an arm, S, projects upward from it, and is bent over for about an inch parallel to the top of the bar, and so that there may be a space, *t*, of about one-eighth of an inch in vertical width between the arm and the bar. A small hooked or pointed wire, *u*, is made to project from the arm S and directly over the first wire of the series *r r r*, &c. A slide or small carriage, *v*, is so fitted or applied to the cloth-bar that it may be moved along on the top of the bar and be firmly clamped to the bar in any desirable position between the arm S and that extremity of the bar which is at the greatest distance from the said arm S. A small pointed wire, *w*, is made to project from the front face of an arm, *x*, which ex-

tends from the slider, the said wire being at the same distance above the line of the points *r r* as is the wire *u*, above mentioned. When cloth is applied to the bar S, its ends are respectively first fixed on the points or wires *u* and *w*. The slider is next drawn back on the bar until the cloth is sufficiently straightened or stretched out. This being done, the slider is clamped in place to the bar and the cloth pressed upon the points *r r*, which are between it and the arm S. The line of sewing or stitches is produced midway between the range of points or wires *r r* and a line drawn through the points or wires *u* and *w*. By means of the stationary point *u* and the movable point *w* and its slider and clamping contrivance I am enabled not only to strain the cloth to a proper tension, whatever may be its width, but to keep or preserve that part of it which is above the range of the points *r r* in proper place, or keep it from falling over laterally during the performance of sewing a seam. It will also be seen that whatever portion of the cloth may extend beyond any one of the points or come between any two of them will be held up in proper place by the pointed wire of the slider. A space, *y*, like the space *t*, is made between the arm of the slider and the top edge of the cloth bar or holder, the said spaces *t* and *y* being for the purpose of allowing the needle to operate on the whole width of the cloth. The vertical rod Z is for the purpose of supporting the thread-bobbin.

Having thus described my improved sewing-machine, what I claim therein as new and of my invention is as follows:

The stationary point *u*, (or any equivalent contrivance for supporting one end of the cloth,) and movable or adjustable clamping-slider and point *w*, in combination with the line or series of points or wires *r r r*, &c., the whole being arranged and applied together substantially in the manner and for the purpose as above specified.

In testimony whereof I have hereto set my signature this 27th day of December, A. D. 1848.

JOTHAM S. CONANT.

Witnesses:

R. H. EDDY,
H. EDWARDS.