E. CLARK.

Sewing Machine.

No. 26,336. Patented Dec. 6, 1859.

FIG. 1

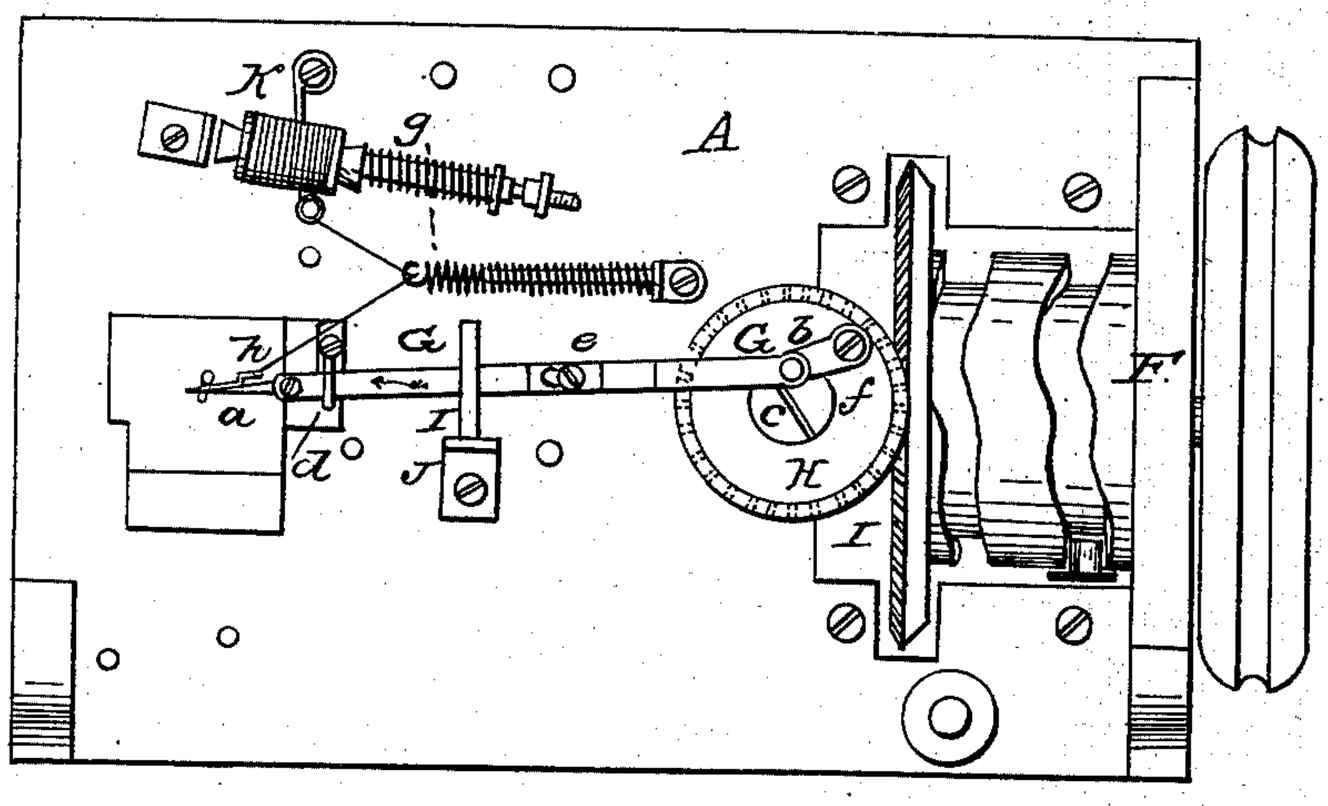


FIG. 3

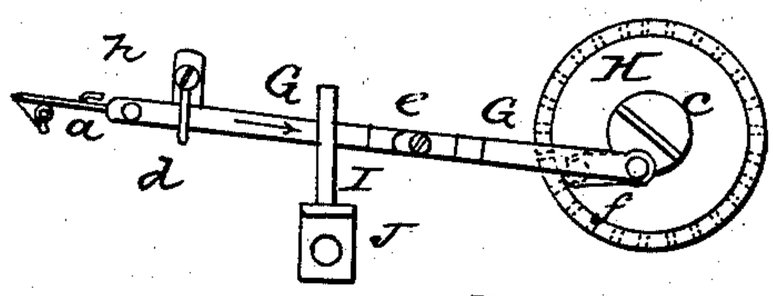
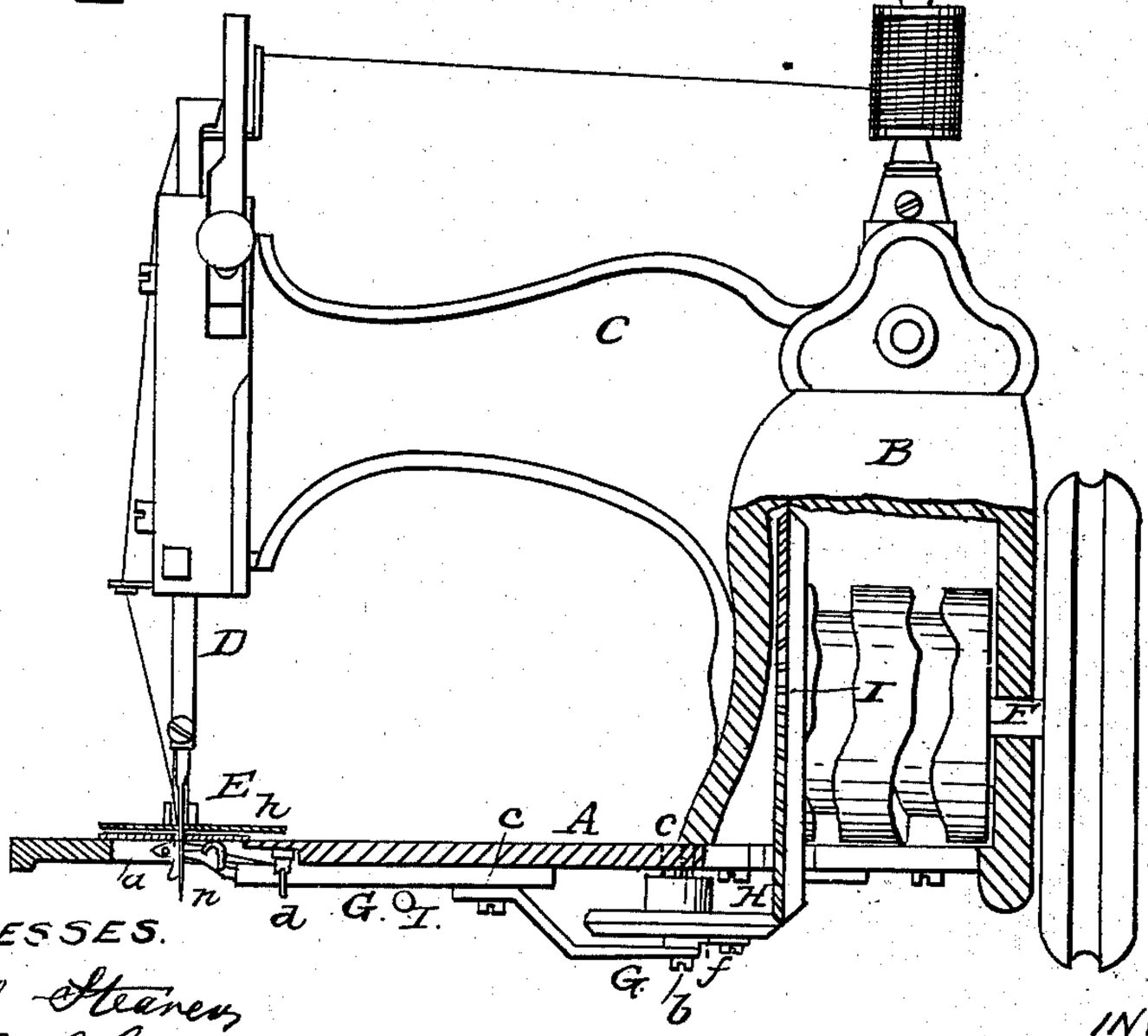


FIG. 2



WITNESSES.

Daniel Stearns

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EDWIN CLARK, OF WINDSOR, VERMONT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **26,336**, dated December 6, 1859.

To all whom it may concern:

Be it known that I, EDWIN CLARK, of Windsor, in the county of Windsor and State of Vermont, 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, forming part of this specification, in which—

Figure 1 is an inverted plan of a machine with my improvements. Fig. 2 is a vertical section of the same. Fig. 3 is an inverted plan of part of the machine in a different position to that indicated in Fig. 1.

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

My invention relates to that class of sewing-machines which make what is known as the "double-looped" stitch.

It consists in a novel and very simple mode of operating the under needle, whereby the stitch-making operation is rendered more certain than in many other machines for making the same kind of stitch.

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

The bed-plate A, pillar B, stationary arm C, main shaft F, upper needle-bar, D, and its perforating-needle *n*, and the feeder E, and their appendages are all applied, combined, and operated in the same manner as in many other sewing-machines, as will be understood by persons familiar with such machines without further explanation.

a is the under needle, having its working part straight, and having an eye near its point, and resembling the under needle of many other machines.

G is a horizontal bar, to one end of which the under needle, *a*, is firmly secured, and whose other end is connected with a crank-pin or eccentric wrist, *b*, carried by a horizontal bevel-gear, H, which is arranged to rotate upon a fixed vertical pin or axle, *c*, secured in the bed-plate A. At a short distance from the needle the said bar G passes through a guide, *d*, that is firmly secured to the bottom of the bed-plate, and the sides of the said guide are so rounded or beveled as to permit the lateral oscillating motion of the said bar that is produced by the rotation of the crank-pin or wrist *b*.

I is a guide-pin secured in a hanger, J, that is bolted to the bottom of the bed-plate for assisting in the support of the bar G. The bar G is represented in the drawings as being made in two pieces, bolted together at *e*, for the purpose of varying the effective length of the bar to adjust the needle, and the crank-pin or wrist *b* is represented as attached to the gear H by an adjustable plate, *f*, which permits its position to be changed to vary the stroke of the needle; but the bar G may be made in one piece, and the crank-pin or wrist be permanently secured in the gear H or other equivalent rotating body by which it is carried. The bevel-gear H derives rotary motion from a bevel-gear, I, on the main shaft F. The under needle, *a*, is supplied with thread from a spool, R, arranged in a well-known manner below the bed-plate, and the said thread is conducted to the said needle by means of an elastic guide, *g*, attached to the bed-plate, and a guide, *h*, attached to the shank of the needle itself. For the sake of distinction the thread from the perforating-needle *n* is shown in the drawings in red colors, and that from the lower needle, *a*, in blue. The under needle, *a*, derives from the crank-pin or wrist, under the control of the guide *d*, through which the bar G works, an elliptical motion around the path of the perforating-needle, advancing on one side of that path to enter and carry its own thread into the loop of the thread of that needle, and retiring on the opposite side of said path to receive that needle and its thread within the loop of its own thread. Fig. 1 shows the under needle, *a*, advancing into the loop of the thread of the perforating-needle *n*, and Fig. 2 shows the needle *a* retiring and the needle *n* descending into the triangular opening formed between the loop of the said needle *n*, that is on the said needle *a*, and the thread of the said needle *a*. The continued retiring movement of the needle *a* forms a loop of its thread around the needle *n*. The guide *d*, it will be observed, forms a double fulcrum for the bar G, the latter bearing alternately upon the sides of the guide in describing the ellipse before described.

The above-described movement of the needle *a*, produced by the crank under the control of the guide *d*, possesses the advantage of being more positive and reliable in its operation and less liable to get out of order, and prevents the under needle interfering with the perforating-

needle, as, if properly adjusted, the former needle need never touch the perforating-needle, and therefore all liability of the needles fouling and bending each other is entirely obviated.

I do not claim giving the under needle an elliptical movement by which it is made to advance on one side of the path of the perforating-needle and retire on the other side thereof; but

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

The combination of a bar, G, which has its front end or needle, *a*, controlled by a double fulcrum-guide, *d*, so as to describe an ellipse, and its rear end attached to a rotating disk or crank-pin, with a perforating-needle, *n*, as herein shown and described.

EDWIN CLARK.

Witnesses:
DANIEL STEARNS,
GEO. W. WHITTLE.