

O. C. KERR.
Sewing Machine.

No. 77,889.

Patented May 12, 1868.

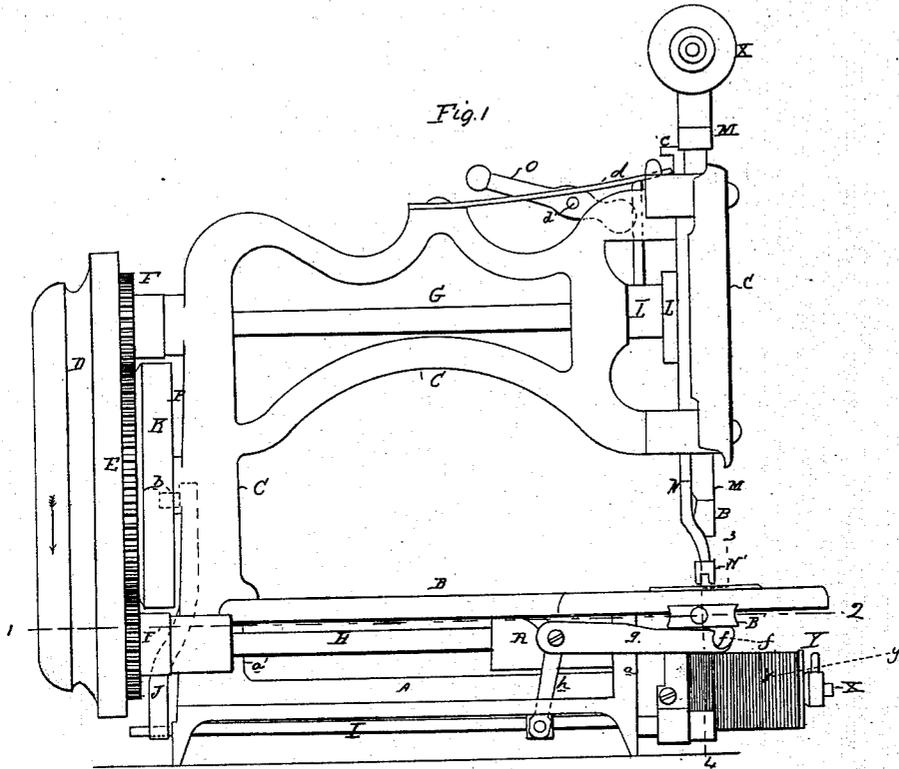


Fig 2

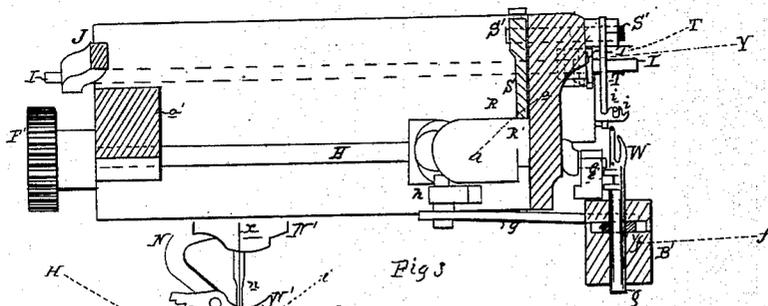
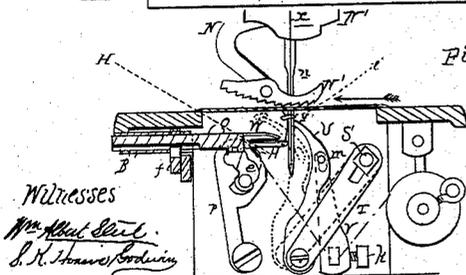


Fig 3



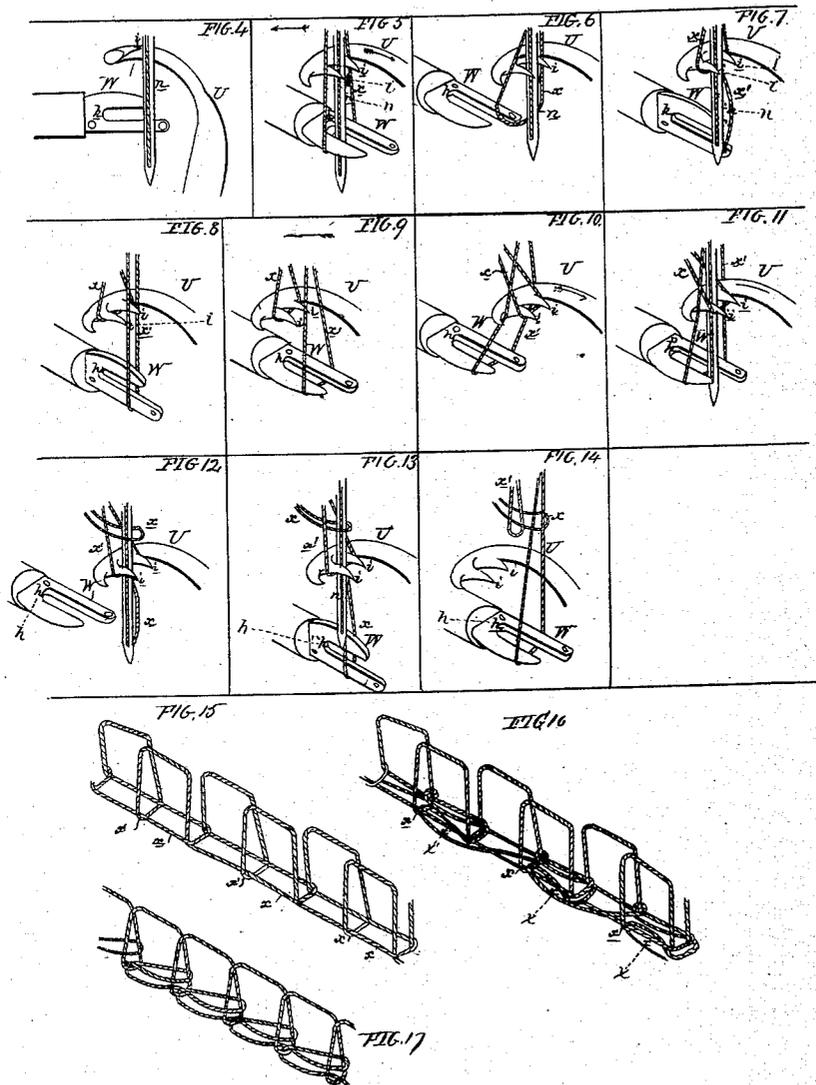
Witnesses
 Wm. Albert Smith
 S. H. Johnson

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 By his Attor
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Witnesses } *Wm. Albert Steel*
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OSCAR C. KERR, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 77,889, dated May 12, 1868; antedated May 4, 1868.

IMPROVEMENT IN SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, OSCAR C. KERR, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of certain sewing-mechanism, constructed, arranged, and operating in the peculiar manner fully described hereafter, so as to produce stitches of a novel character.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 (sheet 1) is a side elevation of my improved sewing-machine.

Figure 2, a sectional plan on the line 1-2, fig. 1.

Figure 3, a sectional elevation on the line 3-4, fig. 1.

Figures 4 to 14 (sheet 2) are diagrams illustrating the manner in which the stitch is made.

Figure 15, a view illustrating the stitch produced when one thread is used; and

Figures 16 and 17, views illustrating the stitches produced when two threads are used.

A is the base-plate, B the work-plate, and C the overhanging arm of the machine, and on a pin at the rear of the arm C turns a driving-wheel, D, a cog-wheel, E, at the side of which gears with pinions F F', the former being secured to an upper driving-shaft, G, turning in the arm C, and the latter to a shaft, H, turning in projections *a a'* on the base-plate.

Beneath this base-plate A extends a shaft, I, at the rear end of which is secured an arm, J; a pin, *b*, projecting from the latter into a groove in a cam-wheel, K, secured to the side of the cog-wheel E.

To the front end of the shaft G are secured two cams L L'; a pin projecting from the latter into a horizontal slot in a needle-bar, M, which slides in the front end of the arm C, and has at its lower end an eye-pointed needle, *n*; and on a rod, at the upper end of the needle-bar, turns a bobbin, *x*, containing the upper thread.

In the arm C, at the rear of the bar M, vibrates a lever, N, to the lower end of which is secured a serrated presser-foot, N', and into an opening in the lever projects the cam L', by which the lever is so operated that an intermittent motion in the direction of the arrow (fig. 3) will be imparted to a fabric confined between the presser-foot and the work-plate.

To the arm C is secured a spring-plate, *d*, one end of which projects beneath a lip, *e*, on the lever N, and to the side of the arm C is hung a lever, O, a pin, *d'*, on which projects beneath the plate *d*, and, when the lever O is elevated, bears against and raises the said plate, and with it the lever N and its presser-foot.

To the front side of the projection *a* is hung a lever, P, into a slot in which projects a pin, *e*, on the crank-end of the shaft H, and at the upper end of the lever is a pin, *e'*, which fits between two projections on a rod, Q, sliding in a detachable block, B', secured to the under side of the plate B. At the inner end of the rod Q is a forked "loop-holder," W, one prong or arm of which is longer than the other, and has in it two perforations, for a purpose described hereafter.

The rod Q passes through an arm, *f*, which vibrates in an opening in the block B', a projection on the arm extending into a longitudinal groove in the rod, so that, although the latter can slide freely in the said arm, one cannot turn independently of the other.

To the arm *f* is connected one end of a rod, *g*, the opposite end of which is jointed to a lever, *h*, hung to the base-plate of the machine, a pin at the side of the said lever projecting into a groove in a cam, R, on the driving-shaft H.

A portion of the cam R is cut away so as to form a second cam, R', against which bears an arm, S, secured to a shaft, S', the latter extending through the projection *a*, and to the front end of the said shaft is secured the upper end of an arm, T.

To the lower end of the arm T is jointed the lower end of a lever or loop-carrier, U, at the upper end of which are two projections *i i*, and into a slot in the said loop-carrier projects a pin, *m*, on an arm, V, secured by a set-screw, *k*, to the front end of the shaft I, so as to be adjustable thereon.

On a rod, X', secured at one end to the work-plate B, turns a bobbin, Y, carrying the lower thread *y*. When the driving-wheel D is turned in the direction of its arrow, a reciprocating vertical motion will be imparted to the needle-bar. A vibrating motion will be imparted to the lever P, and also to the arm *f*, and the rod Q will be carried back and forth in the direction of its length, and will also be turned a quarter of a revolution and back at each motion. A vibrating motion will be imparted to each of the arms T and V, and the loop-carrier U will be moved back and forth towards the needle, and will also reciprocate vertically to a slight extent.

Three different stitches, illustrated in figs. 15, 16, and 17, may be produced by the above-described machine. When a stitch, similar to that shown in fig. 15, is to be made, the upper thread *x* is passed through the eye of the needle *n*, and the parts of the machine are arranged as shown in fig. 3, the needle, loop-carrier, and holder are brought to the relative positions shown in fig. 4, when the operation will be as follows:

The needle will first rise, and the loop-holder will pass through the loop of thread *x* at the back of the needle, which continues its ascent while the loop-holder turns to the horizontal position shown in fig. 5, thus distending the loop while the needle rises above the fabric.

The fabric now moves the length of one stitch in the direction of its arrow, (fig. 3,) the loop-carrier U moves forward in the direction of its arrow, (fig. 5,) so that the projections *i i* pass into the loop *x*, while the needle again descends through the fabric in front of the loop, and between the prongs of the loop-holder W.

The loop-holder now recedes from the needle, disengaging itself from the loop, which, as the needle continues its descent, is drawn up round the projections *i i*, (fig. 6.) The needle then again commences to ascend, the loop-holder is turned to a vertical position, and moved forward so as to penetrate the new loop, *x'*, of thread at the rear of the needle, (fig. 7.)

As the needle passes upward and from contact with the fabric, the loop *x'*, left upon the holder W, (fig. 8,) is distended by the latter, which turns to a horizontal position, as shown in fig. 9, after which the fabric moves in the direction of the arrow (fig. 9) the length of one stitch, and the carrier U moves in the direction of its arrow, (fig. 10,) so that the projections *i i*, with the loop *x* upon them, are carried through the loop *x'*.

The needle now descends between the projections *i i*, through the loop *x*, and in front of the loop *x'*, as shown in fig. 11, after which the carrier U moves back and upwards so that the projections *i i* are withdrawn from the loop *x*. The carrier then moves forward and downward, the projections *i i* passing into the loop *x'*, while the holder W recedes from this loop, which is drawn round the projections, as shown in fig. 12.

The holder now again assumes a vertical position, passes into a new loop, *x*, at the rear of the needle, (fig. 13,) the latter ascends, and the carrier U recedes from the loop *x*, which is then drawn close to the under side of the cloth and round the central part of the loop *x'*, while the latter encloses the new loop *x*, which is distended by the holder W (fig. 14) prior to the projections *i i* passing into the same, as shown in fig. 5; after which, the above-described operations are repeated, producing a stitch similar to that shown in fig. 15.

When a more ornamental stitch is to be made, the lower thread *y* is passed through the perforations in the loop-holder W, the machine is operated as above described, when a loop of thread, *y*, will be carried through each of the loops *x'*, and round one part of the latter, as the holder penetrates the said loop, and the succeeding loop *x* will be carried through the loop of under thread as the needle descends, a stitch, similar to that illustrated in fig. 16, being thus produced.

Another stitch may be formed by moving back the arm V (the set-screw *k* being first loosened) until the projection *m* is free from contact with the loop-carrier, and then adjusting the carrier to the position shown in fig. 3, red lines, out of the way of the threads. The lower thread is then passed through the eyes of the holder, and the machine is set in operation, when the holder, with its loop of under thread, will be passed through a loop of needle-thread, and the needle, at its next descent, will pass through the loop carried by the holder. The holder is then withdrawn through the loop of needle-thread, leaving a loop of thread, *y*, in the same, and moves forward into a new loop at the side of the needle; the stitch thus formed being represented in fig. 17.

Although I have illustrated in fig. 15 a peculiar form of stitch, and have described the manner in which it may be produced, I do not here claim the same, as it will form the subject of another application for a patent.

Without confining myself to the precise construction and arrangement of parts herein described, I claim as my invention, and desire to secure by Letters Patent—

1. A loop-carrier, U, constructed substantially as described, and operating in conjunction with an eye-pointed needle and a loop-holder, W, to produce, from the needle-thread, the stitch, fig. 15, in the manner set forth.

2. A needle, *n*, and loop-holder W, in combination with an adjustable loop-holder, U, the whole being constructed and operating substantially as and for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

OSCAR C. KERR.

Witnesses:

CHARLES E. FOSTER,
W. J. R. DELANY.