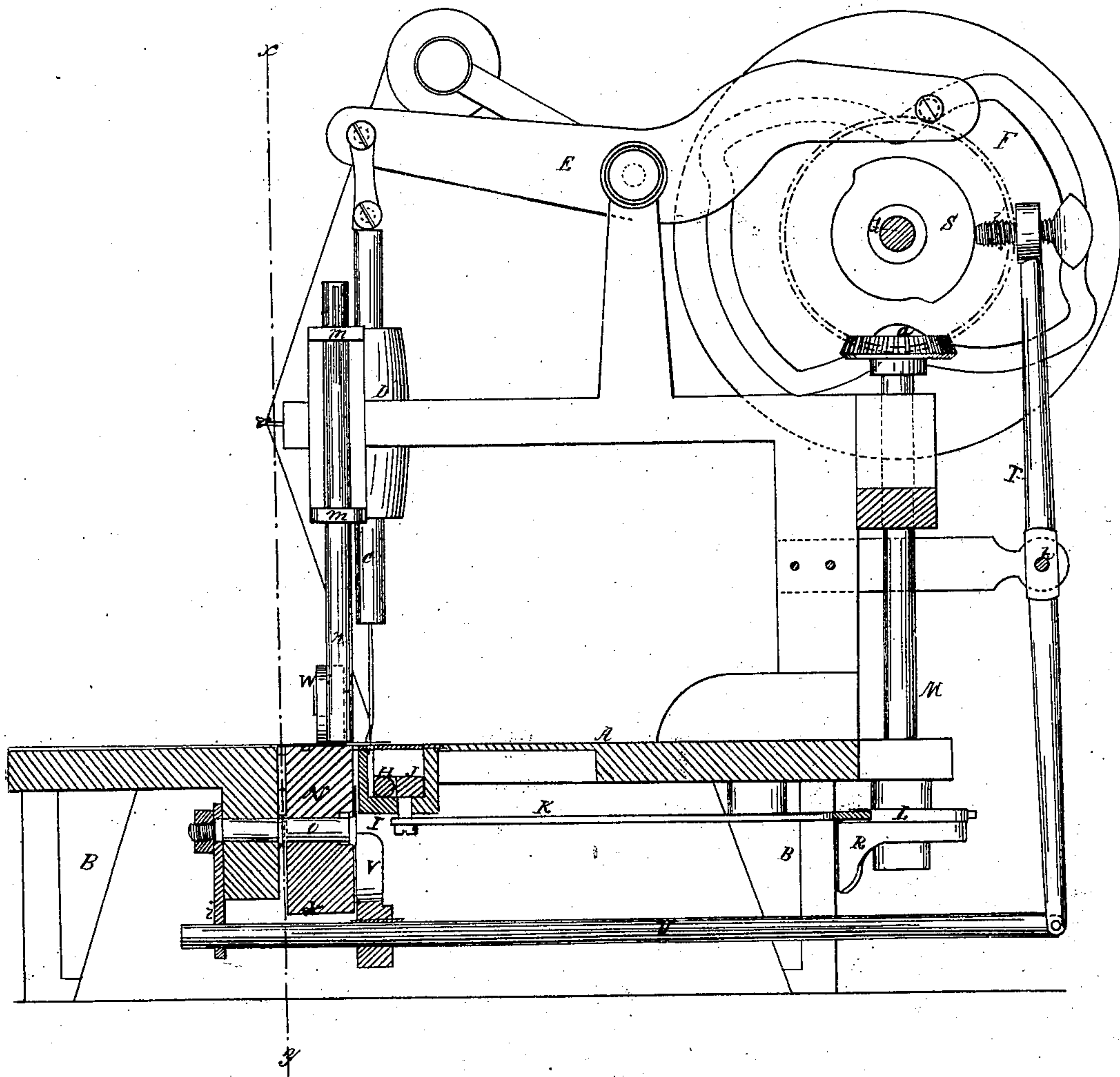


C. MILLER.  
SEWING MACHINE.

Patented Mar. 7, 1854.

No. 10,609.

*Fig. 1*

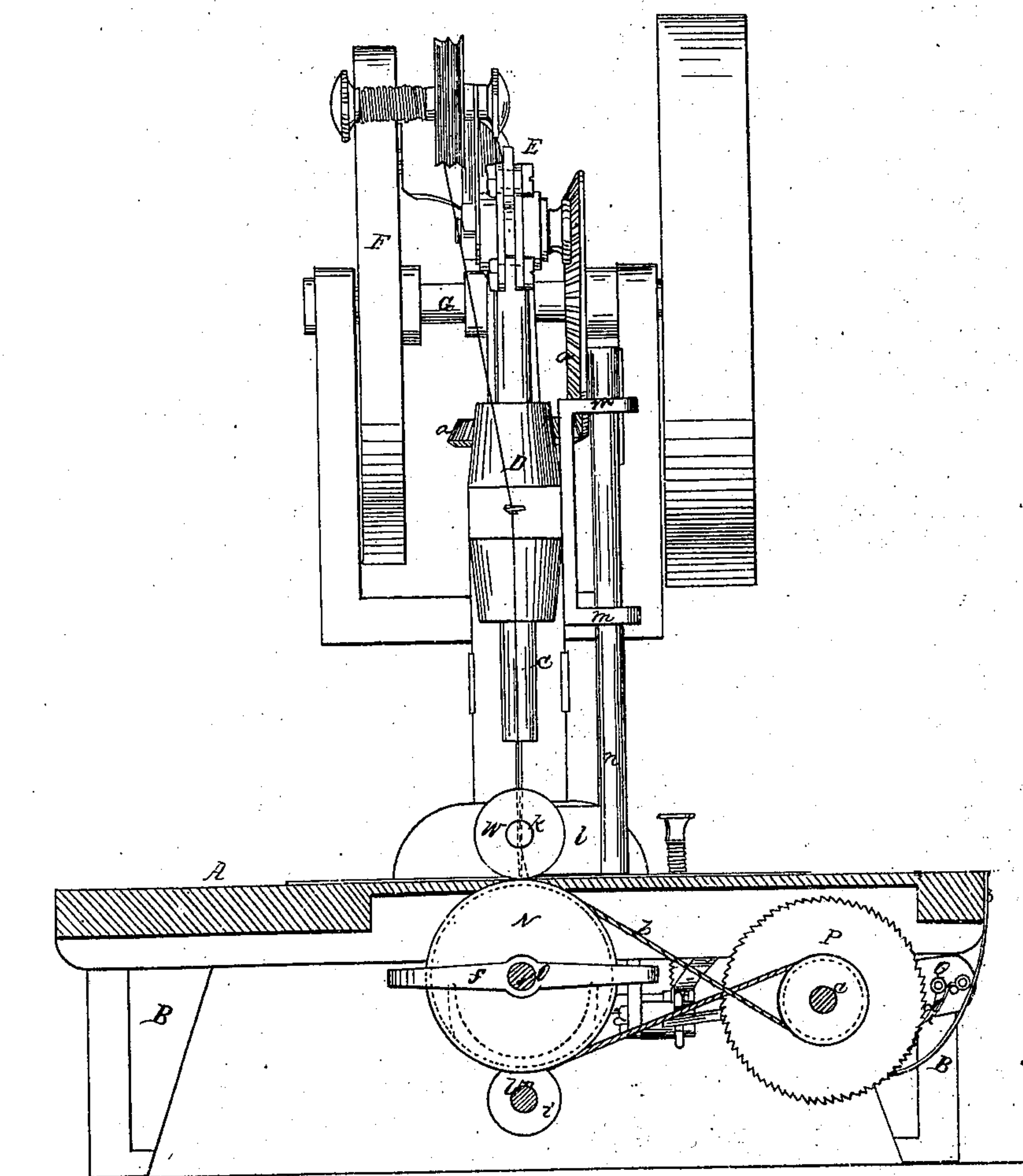


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Fig. 2





# UNITED STATES PATENT OFFICE.

CHARLES MILLER, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 10,609, dated March 7, 1854.

*To all whom it may concern:*

Be it known that I, CHARLES MILLER, of the city and county of St. Louis, and State of Missouri, have invented certain new and useful Improvements 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 a vertical section, taken nearly in the center, of a machine having my improvements applied. Fig. 2 is another vertical section of the same in the line *x y* of Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

The sewing-machine to which these improvements relate is of that description in which the stitches are formed by the interlacing of two threads, one of which is passed through the cloth and left protruding in the form of a loop, and the other is carried by a shuttle through the said loop.

My invention relates to the adaptation of the cloth or other material to be sewed to receive what are termed the "button-hole stitch," the "whip-stitch," and the "herring-bone stitch;" and it consists in giving the cloth or material to be sewed a movement laterally to the direction of the seam and in opposite directions, alternately, between every two stitches, in addition to the movement commonly given in the direction of the seam. The button-hole stitch and whip-stitch are both made in the same way—by taking one stitch through the cloth and the next over the edge—the only difference being that in making the button-hole stitch the movement in the direction of the seam requires to be much less than in making the whip-stitch, being properly only the distance of one thickness of thread. The herring-bone stitch is made by taking all the stitches through.

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

The working parts of the machine represented in the accompanying drawings are all carried by a bed-plate, A, supported on standards B B. The needle is carried by a vertical slide-rod, C, which is fitted to a suitable guide-stock, D, and attached to a beam, E, which

receives an oscillating motion through a cam, F, on the driving-shaft G, and thus communicates a reciprocating motion to the slide-rod and needle. The shuttle H is fitted to a picker-box, J, which works in a raceway, I, sunk in the bed-plate, receiving motion through a picker-staff, K, which is caused to vibrate horizontally below the bed-plate by means of an eccentric, L, on a vertical shaft, M, which is driven by a pair of bevel-wheels, *a a*, from the driving-shaft. The cloth or material to be sewed is fed by a drum, N, which is fitted to turn loosely on a fixed axle, O, below the bed-plate, the upper part of the periphery of the said drum standing slightly above the upper face of the bed-plate, which has a suitable opening to admit it. The feed-drum receives motion upon its axis at proper intervals—that is, between every two stitches—by means of a band, *b*, which passes round it from the hub of a ratchet-wheel, P, which is fitted to turn freely on a fixed stud, *c*, the said ratchet-wheel being actuated by a click, *d*, on a lever, Q, whose fulcrum is on the stud *c*, and which is acted upon at the proper intervals by a lever, (not shown,) which receives motion through a cam, R, at the bottom of the vertical shaft M. The above parts do not differ materially from corresponding parts in other sewing-machines; and therefore they are only described as far as is necessary to elucidate the present improvements.

The feed-drum N is so fitted to its axle that it is capable of moving a short distance in the direction of its axis. At the back end of the axle there is a shoulder, *e*, to prevent the drum from being pushed off, and in front of the drum a spring, *f*, is applied, which has a tendency to push the drum back against the shoulder *e*. Upon the driving-shaft there is a cam, S, whose periphery is in the form of two nearly semicircular arcs of different radii, united at both ends by steps, and this cam acts upon the end of a screw, *j*, in the upper end of a lever, T, of the first order, whose fulcrum is a pin, *h*, in an arm standing out from the back of the framing. To the lower end of this lever T is attached a rod, U, which passes nearly horizontally under the center of the bed and axis of the feed-drum through a guide, *i*, and carries a fork, V, which bears against the back side of the feeding-drum. When the driving-



shaft is rotating, the larger and smaller radii of the cam are alternately in operation on the screw *j*. While the screw bears upon the larger arc of the cam, the drum is pushed forward on its axle by the fork *V*; but when it bears on the smaller arc the drum is moved backward by the spring *f*, the latter moving forth and back in the direction of its axis, as the screw *j* ascends and descends the steps on the cam, and being retained in either its backward or forward position long enough to allow the stitch to be made. These changes in the position of the drum take place at about the same time as its rotary movements for the feeding of the cloth, or during the time that the needle is not in the cloth. The friction-roller *W*, which holds the cloth down firmly on the feed-drum, turns freely on a stud, *k*, which is fixed in a check, *l*, at the lower end of a vertical rod, *n*, which slides up and down, but does not turn in, guides *m m* on one side of the framing of the machine. No spring or weight is shown for holding the roller down upon the cloth, as its own weight, with that of the rod *l*, may be sufficient.

In sewing the button-hole or whip stitch, the cloth is laid on the bed-plate with its edge or the edge of the hole at a right angle to the

axis of the feed-drum, and in such position that when the feed-drum is in its most forward position on the axis the needle will pass close to the said edge without entering the cloth. The machine being set in motion will cause the needle to pass through the cloth and over the edge alternately, and the shuttle to pass its thread through the successive loops. In this way the stitches are made in the cloth and over the edge in regular succession. In working button-holes, a cord is laid round the edges. In sewing the herring bone stitch, the cloth is laid so that the needle always passes through the cloth, but makes two parallel rows of perforations, entering in one and the other row, alternately.

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

Giving the cloth or material being sewed a movement laterally to the direction of the seam, between the successive stitches or interlacings of the needle and shuttle threads, substantially as set forth, for the purpose of receiving different kinds of stitches or seams.

CHARLES MILLER.

Witnesses:

LEONARD GREGG,  
JOHN MARSH.