(No Model.)

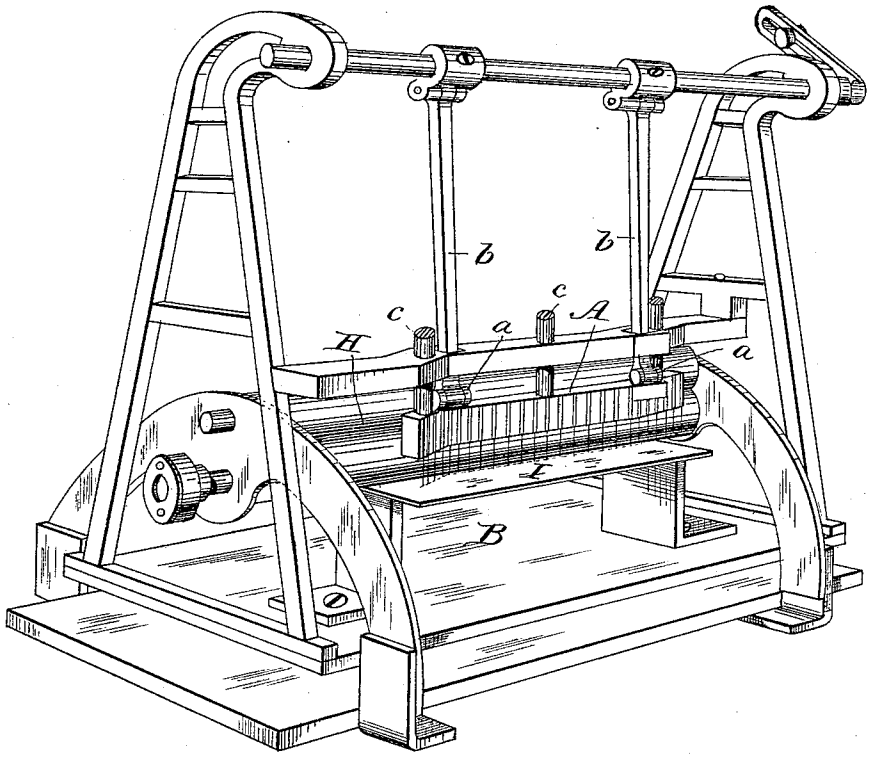
3 Sheets—Sheet 1.

A. HILDT.

QUILTING MACHINE.

No. 338,525. Patented Mar. 23, 1886.

Fig. 1.



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Inventor:

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(No Model.) 3 Sheets—Sheet 2.

A. HILDT.

QUILTING MACHINE.

No. 338,525. Patented Mar. 23, 1886.

Fig. 2.

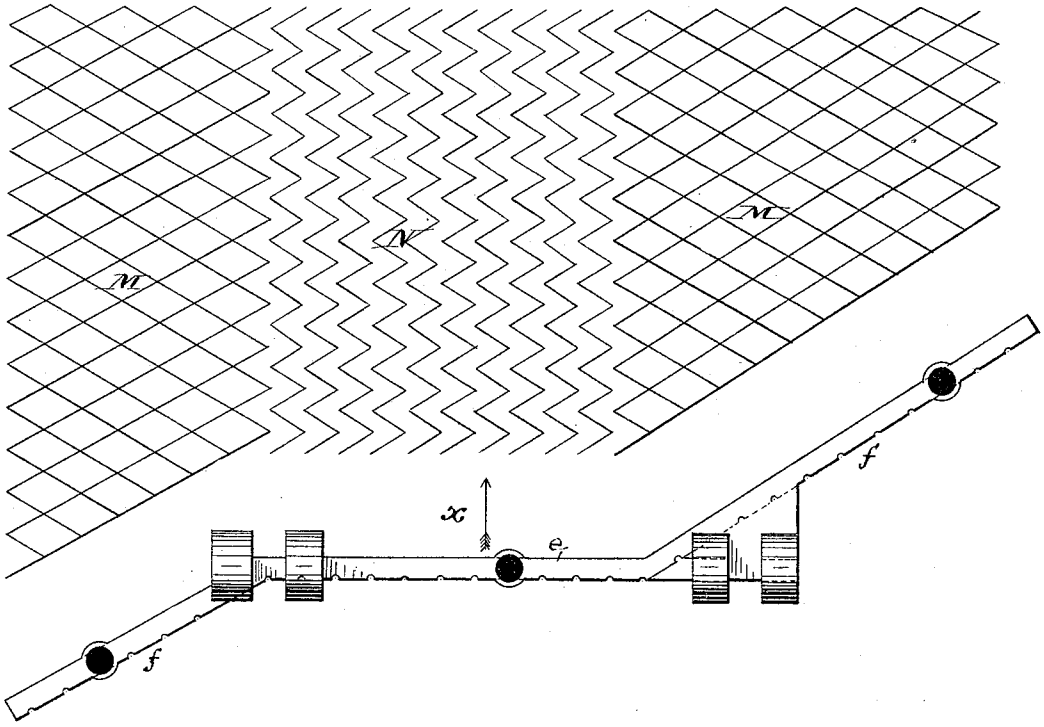
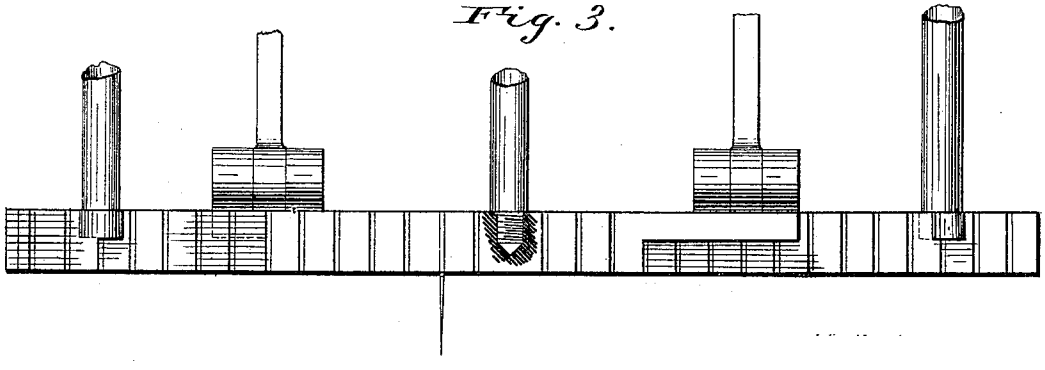


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

A. HILDT.

QUILTING MACHINE.

No. 338,525. Patented Mar. 23, 1886.

Fig. 4.

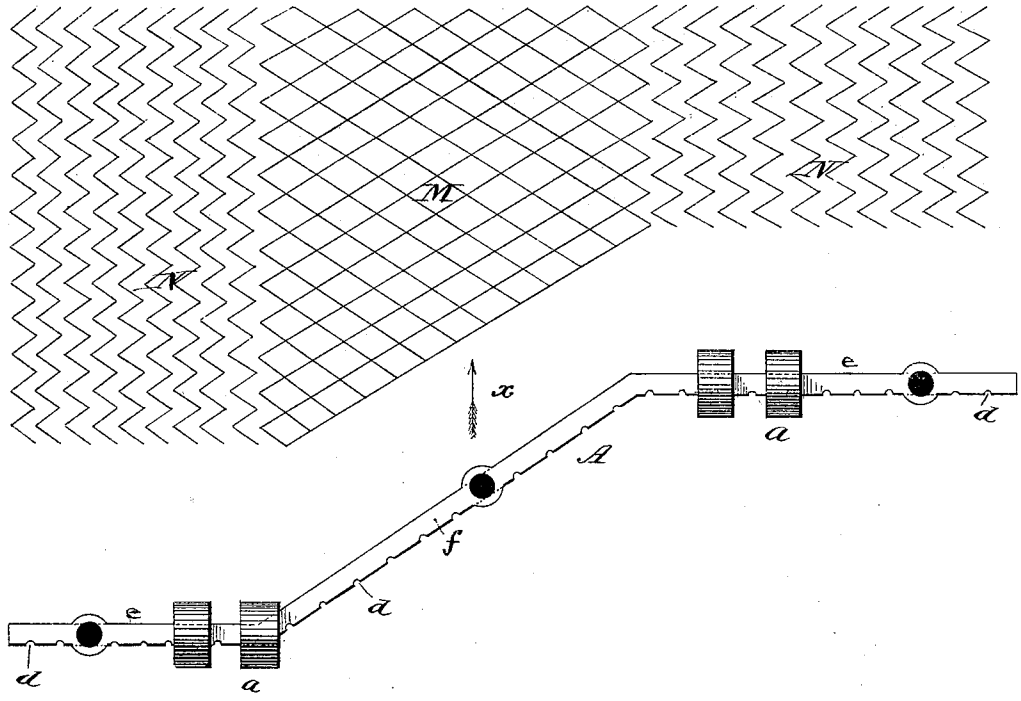
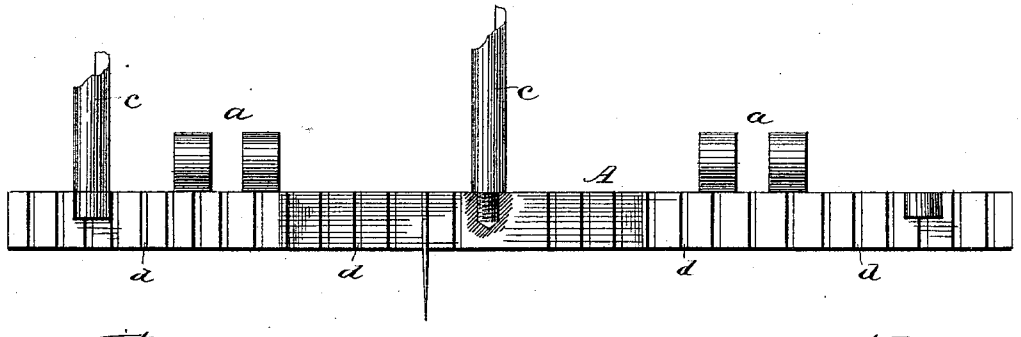


Fig. 5.



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UNITED STATES PATENT OFFICE.

AUGUST HILDT, OF NEW YORK, N. Y., ASSIGNOR TO L. DRYFOOS & CO., OF SAME PLACE.

QUILTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 338,525, dated March 23, 1886.

Application filed October 21, 1885. Serial No. 180,531. (No model.)

To all whom it may concern:

Be it known that I, AUGUST HILDT, of the city, county, and State of New York, have invented certain new and useful Improvements in that class of sewing-machines known as "Quilting-Machines," of which the following is a specification.

My invention has relation to that class of quilting-machines in which a stitch-forming mechanism, one of the elements of which is a reciprocatory needle-bar carrying a row of needles extending crosswise of the goods, is combined with feed mechanism for imparting forward movement to the goods, and mechanism by which the sewing mechanism and goods are caused to reciprocate laterally or transversely of the line of feed with respect to one another.

The invention is designed to provide for the formation, by a single needle-bar, of a quilting-pattern in which a series of zigzag lines will alternate with a series of diamonds.

Under my improvement that part of the needle-bar carrying the needles by which the diamond portions of the pattern are to be formed extends diagonally across the machine in such manner that its needles will be in a line coincident or parallel with the line which is the resultant of the forward feed motion of the goods and lateral movement in one or the other direction of the needle-carriage, while the other portion of the bar extends crosswise at right angles to feed movement of the goods. By this form and arrangement of the needle-bar I can, with the needles in its diagonal part, make diamond-quilting, while at the same time the needles in its other part will stitch in zigzag parallel lines only, the two being alternated in any desired combination by making the needle-bar in selected parts straight and in other selected parts inclined.

The nature of my invention and the manner in which the same is or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of so much of a quilting-machine as necessary for the purpose of explaining my improvement thereon. Fig. 2 is a plan view on enlarged scale of one form of needle-bar embodying my invention, together with a diagrammatic representation of the quilting-pattern formed thereby. Fig. 3 is a side elevation of the same on that side or face in which are formed the grooves for the reception of the needles. Figs. 4 and 5 are views, corresponding, respectively, to Figs. 2 and 3, of a different form of needle-bar.

In the quilting-machine shown in Fig. 1 there is a sewing-carriage, B, which reciprocates laterally or crosswise of the goods and which carries my improved needle-bar A. The latter makes part of a stitch-forming mechanism mounted in the carriage, and reciprocates up and down in suitable guides in the sewing-carriage, and it also carries the row of needles, which are secured, as usual, in grooves or sockets formed for their reception in the needle-bar. The sewing-table or cloth-plate is indicated at I. The forward feed of the goods is effected in this instance by feed-rolls H, to which an intermittent movement of rotation is imparted during the intervals between the stitches. The step-by-step movements of the needle-carriage, by which its lateral reciprocation is effected, also take place during the intervals between the stitches synchronously with the feed movement of the goods, the result being of course that the needles and goods move diagonally with respect to one another, the diagonal being the resultant of the two movements referred to—viz., the feed movement of the goods and the lateral movement of the needle-carriage.

I have omitted from the drawings the stitch-forming mechanisms and the devices for actuating the needle-bar, the needle-carriage, and the feed-rolls. All of these devices and their mode of operation are well known to those skilled in the art, and are fully illustrated and described in Letters Patent of the United States No. 159,884, of February 16, 1875; No. 190,184, of May 1, 1877, (subsequently twice reissued,) and No. 196,863, of November 6, 1877, to which reference is hereby made. They therefore require no illustration or description here.

The particular machine used in the drawings to illustrate my invention is that described and shown in Letters Patent No. 190,184. The intermittently-rotating feed-rolls H, I have represented as cylindrical, while

in the illustration in the patent referred to they are conical. It is manifest, however, that they may be either conical or cylindrical at will, according as it is desired to quilt "conical" goods or straight goods.

I come now to that part of the machine in which my invention is embodied—viz., the needle-bar A, the peculiarity of said bar residing in this, that it is composed in part of a portion, *e*, which is at right angles with the line of feed, and in part of a portion, *f*, which is diagonal or inclined to that line. The bar, as shown in Figs. 2 to 5, is provided with eyes *a*, that form bearings for reception of the joint-pins of the connecting-rods or pitmen *b*, by which vertical reciprocatory movement is, as usual, imparted to said bar. It also has upright rods *c*, which form guides for assuring it in position during its up and down movements, and is provided with grooves *d*, in which needles are fastened in any known or suitable way. In Figs. 2 and 3 the central portion of the needle-bar is at right angles to the line of feed, (indicated by the arrow *x* in Fig. 2,) while the ends of the bar are inclined so as to stand diagonally to that line, the inclination of each portion being on a line coincident or parallel with a line which is the resultant of the combined feed movement of the goods and lateral movement of the needle-carriage, thus causing the needles included in any one diagonally-inclined portion of the needle-bar to stitch in the same line with one another when the needle-carriage moves laterally in one direction, and in parallel lines with one another when the needle-carriage moves laterally in the opposite direction. In this way these needles, when the machine is in operation, form a diamond-quilting pattern, as indicated at M M, Fig. 2, while the needles on the central portion of the bar, inasmuch as they stand in a row at right angles to the lines of feed of the goods, will simply form the zigzag pattern N.

In the needle-bar shown in Figs. 4 and 5 the arrangement is reversed, the diagonal portion *f* being in the center, while the portions *e* that are straight or at right angles to the line of feed are at the ends. The result of this is that the diamond portion M of the quilting is brought in the center, while the end portions of the same are composed of zigzag pattern N.

The foregoing are but two of many modifications and variations of the invention. As great or as small a portion of the needle-bar as desired can be made diagonal, this depending upon the relative amounts of zigzags and diamonds required in the pattern.

It is of course well known to those acquainted with the art to which my invention pertains that sometimes the goods are laterally reciprocated instead of the needle-carriage, and I desire to be understood as including this obvious modification in my claim.

Having described my invention and the manner in which the same is or may be carried into effect, I state that I do not claim two needle-bars in a quilting-machine arranged at an angle with each other and with the line of feed or line of movement of the fabric; but

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

The combination, with the feed mechanism and the laterally-reciprocating needle-carriage, of a needle-bar carried by and moving with said carriage extending crosswise of the line of feed and having the portion *e* of its length at right angles to the line of feed, and the other portion, *f*, diagonal or inclined thereto, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 23d day of September, 1885.

AUGUST HILDT.

Witnesses:

FRANK H. LANE,

WM. F. LETT.