F. L. PALMER.

SEWING-MACHINE FOR QUILTING.

No. 185,954. Patented Jan. 2, 1877.

Fig. 1.

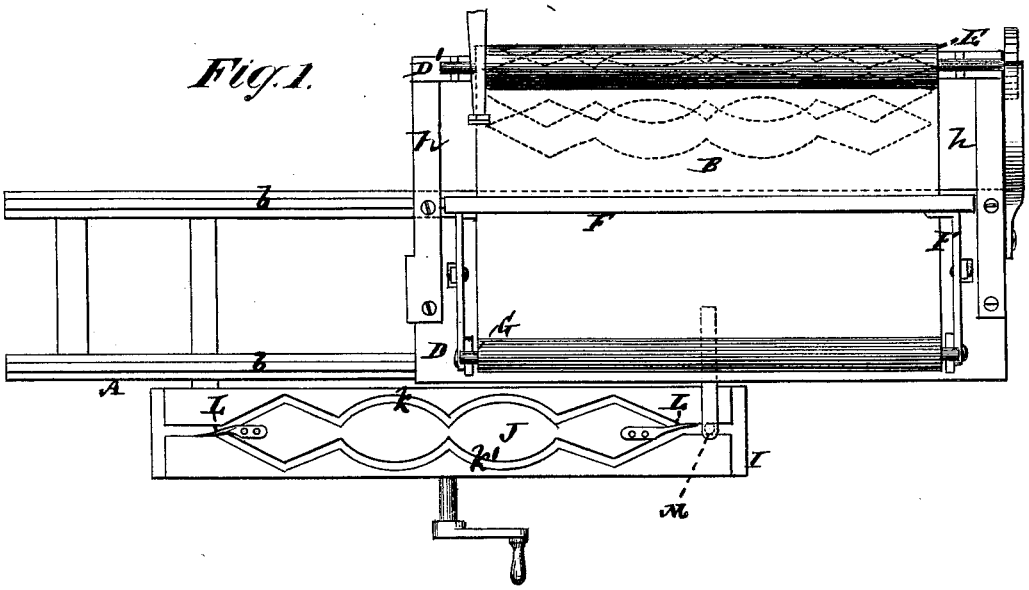


Fig. 2.

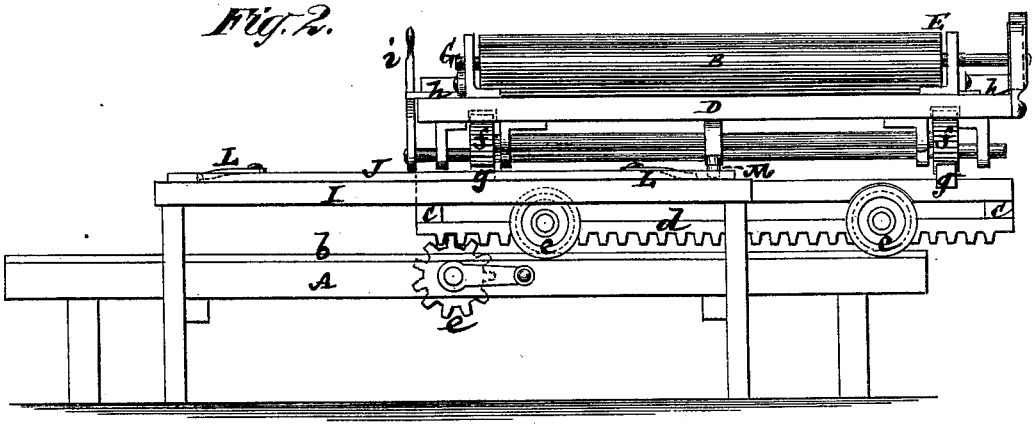
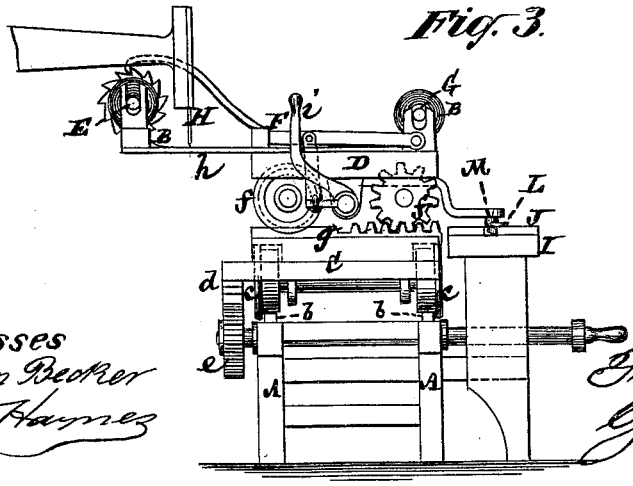


Fig. 3.



Witnesses
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# UNITED STATES PATENT OFFICE.

FRANK L. PALMER, OF MONTVILLE, CONNECTICUT.

## IMPROVEMENT IN SEWING-MACHINES FOR QUILTING.

Specification forming part of Letters Patent No. **185,954**, dated January 2, 1877; application filed June 2, 1876.

*To all whom it may concern:*

Be it known that I, FRANK L. PALMER, of Montville, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Quilting-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 drawing, which forms part of this specification.

This invention relates to quilting frames or machines, in which the sewing or quilting of the fabric is made in lines or rows of stitching running transversely of its width or passage through the machine; and consists in various novel combinations of parts, including upper and lower carriages, reciprocating in transverse relation with each other, a cloth-beam carried by the upper carriage in suitable relation with the needle of an attached sewing-machine, and one or more patterns or formers constructed and applied to produce a continuous stitching in consecutive lines running across the fabric in opposite directions alternately, whereby the rows of stitching are closed at their ends without stopping the work, and may be made to interlace with one another; also, a single needle may be made to do the work of two or more needles.

In the accompanying drawing, Figure 1 represents a plan of a quilting-machine, in part, constructed to operate in accordance with my invention. Fig. 2 is a front elevation of the same, and Fig. 3 an end view thereof.

A is a fixed table or frame, on which are secured parallel rails *b b*, arranged to extend crosswise of the machine relatively to the feed of the fabric B to be quilted. C is a lower carriage fitted to reciprocate, by means of wheels *c c* on the rails *b b*. The devices for thus reciprocating the carriage C may consist of a rack, *d*, on said carriage, and a pinion, *e*, to which a reciprocating rotary motion is communicated by any suitable means. Mounted on this carriage C is an upper carriage, D, fitted with under end wheels or pinions *f f*, arranged to provide for the reciprocating travel of the upper carriage on ways, rails, or racks *g g*, secured to the top of the lower carriage C in transverse relation with the latter, whereby provision is made for the reciprocating travel of the upper carriage transversely to the motion of the lower carriage. E is the cloth-beam over which the fabric B as quilted is passed, or by which the fabric is taken up when said beam is constructed as a take-up roll, controlled as regards its movement by a pawl and ratchet, or otherwise. This beam E is mounted on and along a back rail, D′, attached by side arms *h h* to the upper carriage D, and the latter has mounted on it in front a swinging frame, F, arranged to bear or hold down on the fabric B while being quilted, but capable of being raised by a lever, *i*, and appropriate connections when it is required to feed or draw on the fabric to make a new row of stitching.

A roll, G, may, if desired, be arranged along the front of the upper carriage D, to supply the fabric to be quilted as fast as required.

The beam E is arranged back of the needle H of the sewing-machine used in doing the work, which machine may have a central fixed relation in rear of the quilting-frame, but with its goose-neck, which carries the needle-bar, arranged to extend over the beam E. Any suitable shuttle sewing-machine may be used.

Arranged along and in front of the main or stationary frame A is a stationary pattern table or stand, I, on which is secured any suitable double or reverse pattern, J, corresponding with the design to be quilted. This pattern may be formed of a slotted or grooved plate, the slots or openings *k k′*, in which determine the design to be quilted. These slots or openings are closed at their ends, also intermediately of their length, if desired, by spring or other switches L L, which provide for a traveling guide or finger, as hereinafter described, to pass or cross over from either one slot into the other.

M is the guide or finger above referred to, and which is here shown to consist of a bent bar attached to the upper carriage D, so as to project centrally from it in front, and having a pin or projection at its forward end, arranged to fit easily within either of the slots *k k′* of the pattern.

Now, supposing the machine to be set in operation, it will be evident that as the lower carriage C is reciprocated or moved from side to side along and on the rails *b b* it carries

with it the upper carriage D and fabric B, thereby giving to the latter a cross-traverse back and forth under the sewing-needle H to the full extent of the width of the fabric, or thereabout. While this motion is taking place, however, the upper carriage D has also an independent movement given to it—that is, back and forth—on the ways *g g* in transverse relation with the traverse of the lower carriage C. This is done by the fit of the guide or finger M of the carriage D in the slots *k k'* of the pattern J, and such in-and-out motion of the upper carriage lengthwise of the fabric will vary with the design of the pattern, and such motion, conjointly with the motion of the lower carriage, will cause the fabric B to be quilted or stitched in transverse rows, as desired, and as determined or controlled by the pattern.

The pattern J may be varied to quilt numerous and totally different designs, embracing either straight or curved rows of stitching, and either parallel, meeting one another at intermediate points, or crossing one another, as desired, but with this peculiarity, that the stitching is continuous in consecutive lines, running across the fabric in opposite directions alternately, and such lines or rows of stitching are closed at their ends, and when meeting or crossing one another intermediately of their length are also caused to interlace with one another. This is done without stopping the work by the passage of the guide or finger M of the upper carriage through the switches L of the pattern, combined with the movement of the carriages C and D, as described. By such continuous stitching in consecutive lines running across the fabric in opposite directions alternately, I do away with that tendency to unravel or exposure of cut loops at the ends of the rows of stitching, which is incidental to each of said rows, being made independent of the other. Furthermore, a single sewing-needle may, by this arrangement, be made to do the work of two or more needles.

The fabric being quilted may be drawn from off or over the roller G, to arrange each duplicate or return rows of stitching at any desired distance apart, and to vary the design by changing the distance apart of the consecutive rows of stitches. The fabric B may be of two thicknesses with interposed wadding, as in other quilted work.

I claim—

1. In a quilting-machine, the combination of a work-carriage, a pattern, guide, or finger, and a double pattern composed of two independent, but connected, guide slots or tracks, the whole arranged substantially as herein described, whereby the said pattern, guide, or finger may pass from one slot or track to the other, for the purpose herein set forth.

2. The combination of the pattern J, provided with one or more switches, L, the guide or finger M, the carriages C and D, arranged to reciprocate in transverse relation with each other, and the cloth-beam E, arranged in proper relation to the needle of an attached sewing-machine, substantially as shown and described.

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