

A. BECK.
Quilting Machine.

No. 196,863.

Patented Nov. 6, 1877.

Fig. 1.

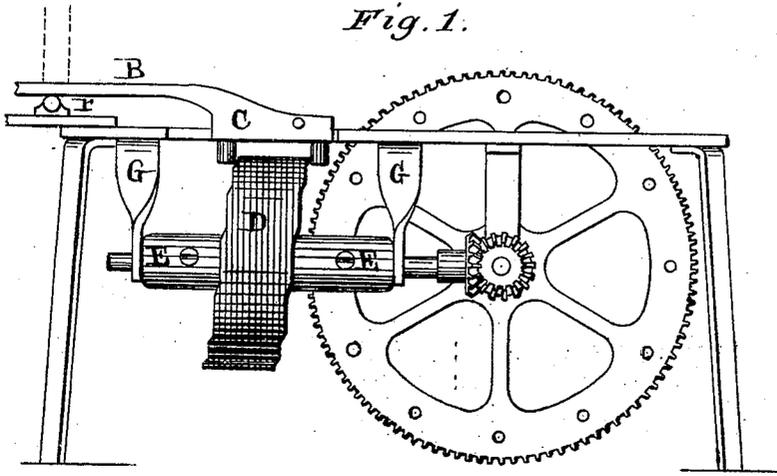
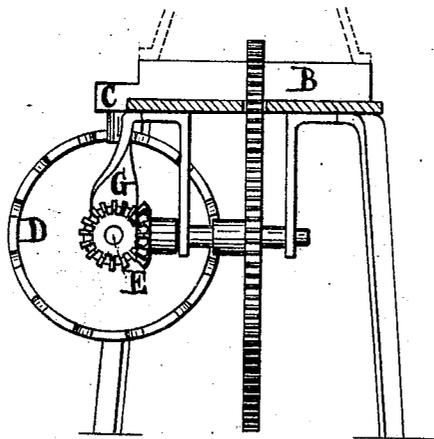


Fig. 2.



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his atty.

UNITED STATES PATENT OFFICE.

AUGUST BECK, OF NEW YORK, N. Y., ASSIGNOR TO LOUIS DRYFOOS, OF
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IMPROVEMENT IN QUILTING-MACHINES.

Specification forming part of Letters Patent No. **196,863**, dated November 6, 1877; application filed
June 27, 1877.

To all whom it may concern:

Be it known that I, AUGUST BECK, of the city, county, and State of New York, have invented certain new and useful Improvements in Quilting-Machines, of which the following is a full, clear, and exact description.

I have heretofore obtained Letters Patent of the United States for various improvements in quilting-machines, which patents were dated, respectively, February 16, 1875, and May 1, 1877.

My present improvements relate to machinery such as is described in said Letters Patent, and have particular reference to the mechanism by which the movable sewing-frame is actuated.

In my patented machines difficulty was experienced in the use of friction-clutches, which, while complicated, cumbersome, expensive, and liable to get out of order, were in their operation irregular, and, therefore, rendered the movements of the frame, and consequently the formation of the required quilting design or pattern, unreliable.

My present invention has for its object the remedying of these defects—viz., to simplify the machine, rendering the same more compact and much less expensive, and to obviate its getting out of order. The vibratory movement of the sewing-frame in my improved machine being effected by positive motion, the work will be more regular and perfect.

In the drawings I have omitted to show all parts of my machine which are not the subject-matter of this patent. Thus, the sewing-mechanism is entirely left out, and Figures 1 and 2 only represent, in side and front elevation, the mechanism by which movement is given to the laterally-reciprocating sewing-frame.

In said figures, B is the base-plate of the sewing-frame, which is mounted on rollers *r*, and is extended to form, or is rigidly connected with, a carrier, C, which is arranged to receive its reciprocating movement from a cam-wheel, D, and to transmit the same to the sewing-frame.

The cam-wheel is of peculiar construction, consisting of a cylinder united by a disk or spokes to the hub or axle E, which is supported in hangers or brackets G fast to the under side

of the frame. The cylinder or flange is cut out in a manner to correspond to the pattern of the sewing to be executed, or to the motions to be imparted to the sewing-frame.

In the example shown in the drawing, the cylinder is constructed to make a zigzag seam. To this end it is divided along its rim into, say, eighteen equal parts, for eighteen stitches for each complete revolution of the wheel, or each element of the zigzag pattern.

Nine parts, therefore, are cut on the cylinder, so that each shall be a further recess with respect to the former, each recess shoving the frame with its sewing mechanism forward a distance, which, in combination with the regular feed-motion, will produce an oblique line.

The other nine parts are cut away in such manner as that each shall gain upon the preceding recess until the last of the latter nine shall coincide with the first of the former nine, each of said recesses pushing the frame backward a similar distance, which, in combination with the regular feed, will produce an oblique line in the opposite direction to the former, and so on, as the wheel revolves, the frame will be reciprocated by the recesses, cams, or patterns cut into the cylinder portion of the wheel. The pattern may be cut one side of the wheel, or on both, as shown in the drawings. In the latter case I prefer to provide the carrier with a roller, or each cam of the cylinder to embrace, as it were, the cylinder on opposite ends, and thus dispense with springs or other means to keep the carrier in contact with the pattern-wheel. Motion is given to the pattern-wheel in any convenient manner, by pinions, as shown, or otherwise.

I am aware that it has heretofore been attempted to effect the traversing movement of the sewing-frame by means of a cam-groove engaging a pin projecting from the needle-carriage. This mode of construction is impracticable for many reasons: first, because accurate feed cannot be obtained, owing to the flexibility or yield of the heavy frame when subjected to strain, particularly when moving rapidly, as is required for mechanical sewing, in consequence of which yield the quilt-pattern is irregular, and the

stitches are unevenly spaced; second, the cam-groove, transmitting a movement of quick reciprocation to the heavy needle-frame, is soon worn out, and there is loss of motion; third, the vibration of the machine causes the pin which is engaged in the groove to play along the inclined face of the cam, whereby the needles are made to work large holes in the fabric to be quilted. By my mode of structure these objections are obviated.

The large cam-wheel, on the edge of the periphery of which is cut the pattern, transmits the movement to the sewing-frame, with unerring accuracy, by means of a roller on each side of the pattern. It is not liable to be worn out, because of the comparatively small amount of friction and strain to which it is subjected, and the pattern is so formed that after each interval or feed a surface is presented to the roller-pin which is incapable of imparting movement in either direction, however the frame may be vibrated.

In the foregoing specification I have, in illustration of my invention, indicated a quilting-pattern, being a zigzag, each of which con-

sists of eighteen stitches. It is obvious that the pattern may be varied for any greater or less number of stitches, according to circumstances or requirements of the work.

Having thus described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

The combination, with a movable sewing-frame carrying the sewing mechanism, of a pattern wheel or cylinder having cut in the edge of the rim thereof the pattern according to which the lateral reciprocating movement is to be imparted to the sewing-frame to produce, in connection with the regular feed of the sewing mechanism, a given quilting-pattern, substantially as shown and set forth.

In testimony whereof I have hereunto signed my name this 26th day of June, A. D. 1877.

AUGUST BECK.

Witnesses:

GEORGE F. LANGBEIN,
HENRY SIMON.