J. J. CRALL.

QUILTING-MACHINES.

No. 193,852. Patented Aug. 7, 1877.

Fig: 1.

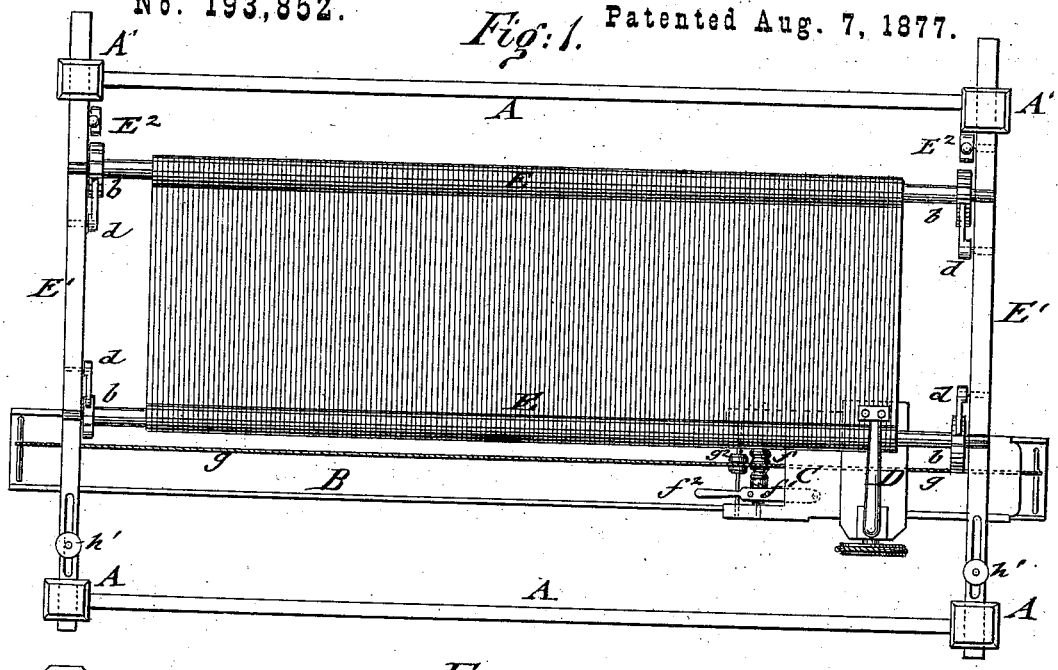


Fig: 2.

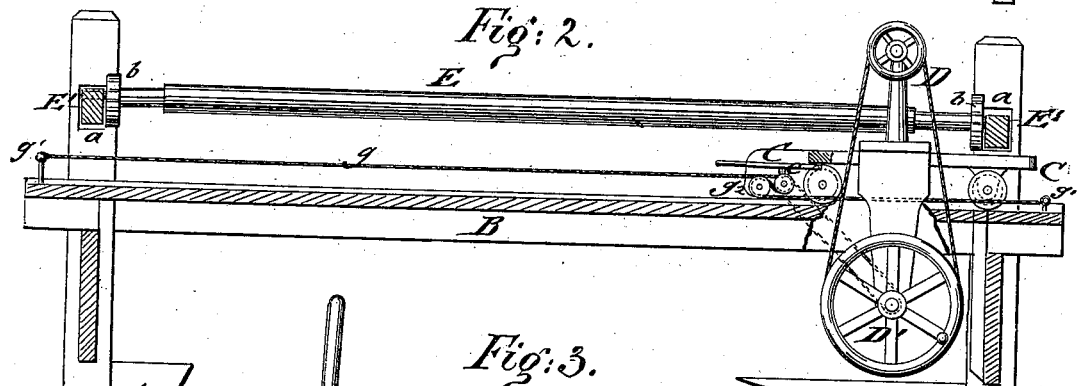
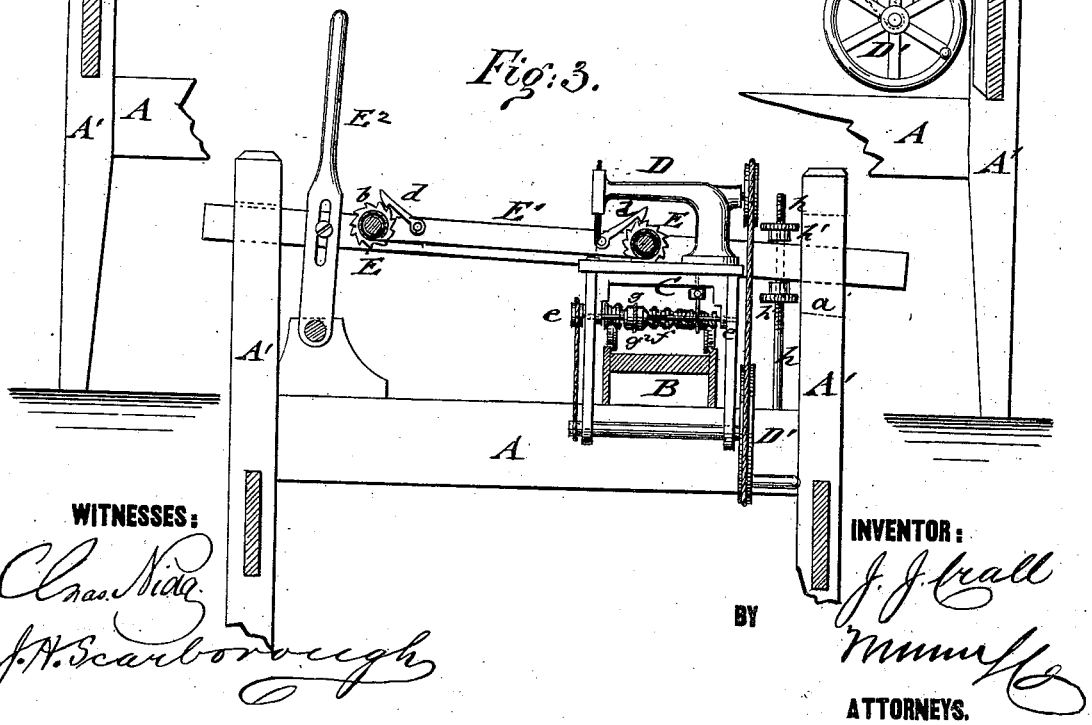


Fig: 3.



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JOHN J. CRALL, OF DRY RIDGE, MISSOURI.

IMPROVEMENT IN QUILTING-MACHINES.

Specification forming part of Letters Patent No. **193,852**, dated August 7, 1877; application filed December 23, 1876.

To all whom it may concern:

Be it known that I, JOHN J. CRALL, of Dry Ridge, in the county of Camden and State of Missouri, have invented a new and Improved Quilting-Machine, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, Fig. 2 a vertical longitudinal section, and Fig. 3 a vertical transverse section, of my improved quilting-machine.

Similar letters of reference indicate corresponding parts.

This invention has for its object to manufacture quilts in rapid and convenient manner by means of a sewing-machine, running over the fabric stretched in suitable manner, and will first be described in connection with the drawing, and then pointed out in the claims.

In the drawing, A represents the supporting-frame of my improved quilting-machine, and B a longitudinal way with rails for the carriage C of any sewing-machine, D, placed thereon. The fabric to be quilted is stretched on two longitudinal rollers, E, to which the ends of the fabric are tacked, said rollers being journaled in recesses in the lateral pieces E^1 which slide in guide-recesses *a* of the corner-posts A′ of frame A. The slide-pieces E^1 are moved forward or back to bring the fabric nearer to or farther away from the sewing-machine by lever-handles E^2, pivoted to frame A and slide-pieces E^1. The fabric is wound up and retained on the rollers in a stretched position by ratchet-wheels *b* at the ends of rollers E, and by pivot-pawls *d* of frame A. The sewing-machine D is worked by a hand driving-wheel, D′, which is connected by a belt and pulley with the working-parts of the machine. The shaft of the hand-wheel D′ is connected by a second belt with a pulley of a shaft, *e*, at the front part of the carriage C, shaft *e* carrying a loose differential pulley, *f*, and a laterally-sliding but axially-keyed clutch, f^1, operated by a hand-lever, f^2. The differential pulley *f* is made tapering, with a number of annular grooves that gradually diminish in diameter toward the clutch end. A longitudinal cord, *g*, is stretched on supports or staples g^1 at the ends of the way B, they being of different height, so that the cord *g* may be passed from the higher staple over the differential pulley, then backward and upward and around a laterally-sliding guide-pulley, g^2, in front of the differential pulley, to the lower staple g^1 at the opposite end of the way.

The belt connecting the differential pulley-shaft with drive-shaft is transferred from a larger to a smaller part thereof, in order to produce a faster feed, and the reverse to get a slower feed. When the carriage has reached the end of its movement the differential pulley is unclutched from its shaft, and the carriage run back by hand.

The sliding end pieces E^1 are made adjustable to different heights at the slotted front ends by screw-bolts *h* and upper and lower screw-nuts *h′*, for the purpose of bringing the quilt into the required position on the table of the sewing-machine.

For quilting with the machine, the fabric is first wound upon the back roller, the front roller being placed by the hand-levers E^2 close to the needle of the sewing-machine. The upper nuts *h′* are then screwed down to hold the quilt and roller to the bed-plate of the sewing-machine, the latter being then passed over the fabric from right to left while the first line of stitches is being made. The fabric is then moved forward by the hand-lever as far as required for the next line of stitching, and the sewing-machine is run over the fabric as before. The quilted portion is then rolled up on the front roller by releasing the pawls of front and back rollers and moving the quilt forward. The quilt is then thrown back by the hand-levers and slide-pieces until the front roller comes again close to the needle to bring the next seam at the required distance from the one last made. The quilting is then continued as far as the arm of the sewing-machine will admit the rolling up, which is generally one-half or more of the quilt.

The lower screw-nuts of the sliding bars are raised as the rolled-up portion of the quilt presses sufficiently on the table of the sewing-machine.

The quilting may thus be accomplished in rapid manner, as the fabric may be readily fed to the sewing-machine and stitched by the

same, all the parts of the quilting-machine being operated with great facility and convenience.

The presser-foot of the sewing-machine holds the quilt to the cloth-plate while the needle is in the cloth, and when the needle is removed the feed moves the quilt under the presser-foot. The sewing-machine feed will go ahead of the carriage-feed from one-half to one inch, and at the same time make an even as well as a correct stitch. The motion of the carriage is at best very slow, and the yield of the material at every perforation of the needle, as well as the elasticity of the needle, are fully equal to the extent of feed, so that the fibers of fabric readily regain their original position after each withdrawal of the needle.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a sewing-machine arranged on a carriage, as shown and described, of the cord *g*, attached at the ends to staples g^1, the differential pulley and the sliding pulley g^2, substantially as shown and described.

2. The combination of the stretching front and back rollers E, having ratchet and pawl mechanism, with the adjustable slide-pieces E^1 and hand-levers E^2, to feed fabric to sewing-machine, substantially as specified.

JOHN JAMES CRALL.

Witnesses:
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L. J. ROACH.