

(No Model.)

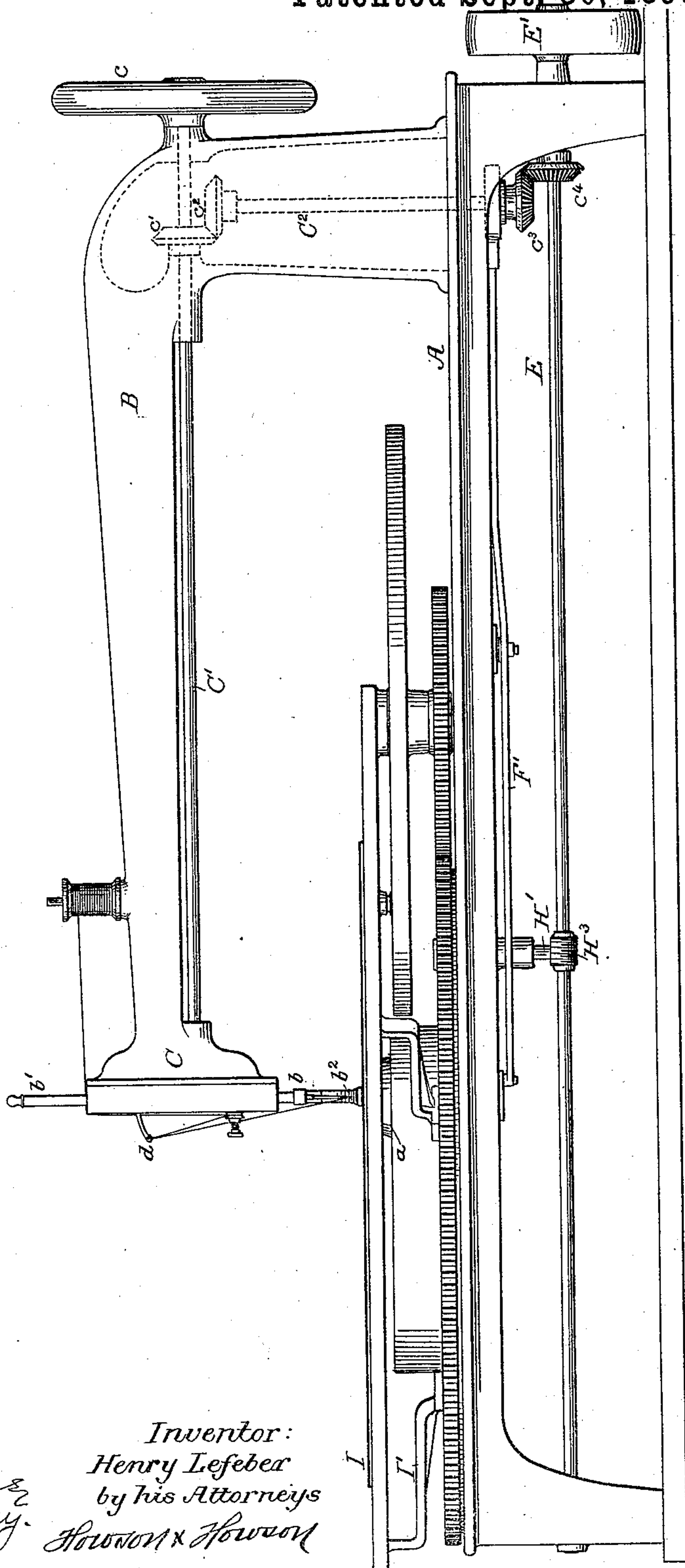
3 Sheets—Sheet 1.

H. LEFEBER.
QUILTING MACHINE.

No. 437,439.

Patented Sept. 30, 1890.

FIG. 1.



Witnesses:
David S. Williams
Edward M. Riley.

Inventor:
Henry Lefebvre
by his Attorneys
Howson & Howson

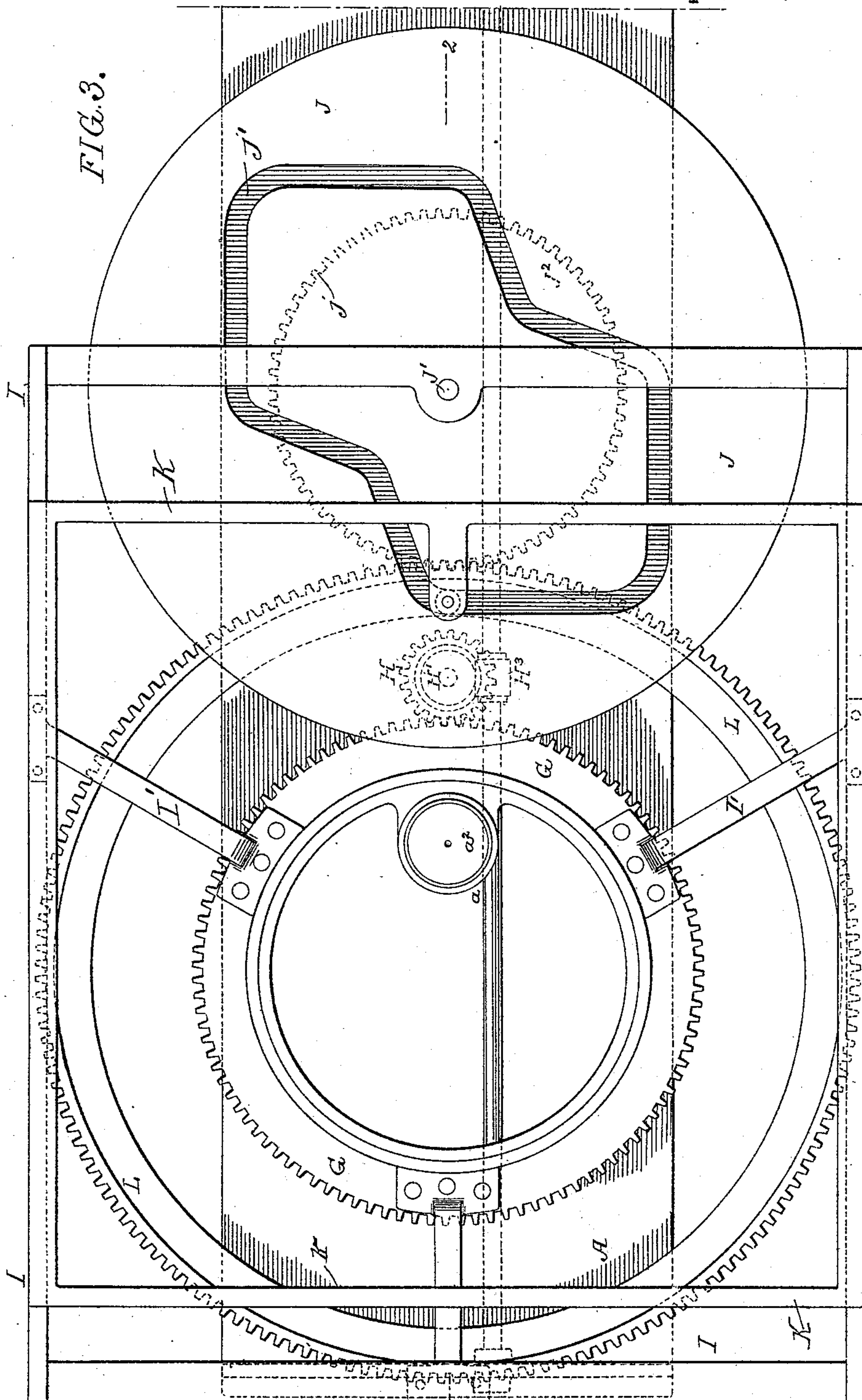
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UNITED STATES PATENT OFFICE.

HENRY LEFEBER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
ROBERT H. FARLEY, ISAAC KEELER, AND ALFRED P. PHIPPS, ALL
OF SAME PLACE.

QUILTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 437,439, dated September 30, 1890.

Application filed June 2, 1888. Serial No. 275,869. (No model.)

To all whom it may concern:

Be it known that I, HENRY LEFEBER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Quilting-Machines, of which the following is a specification.

The object of my invention is to construct a simple and efficient machine for forming plain or elaborate designs upon the fabric to be quilted.

In the accompanying drawings, Figure 1 is a side elevation of my improved quilting-machine. Fig. 2 is a longitudinal section on the line 1 2, Fig. 3, drawn to an enlarged scale; and Fig. 3 is a plan view showing the cam.

A is the base of the machine, and B is an arm carrying at its outer end a head C.

b is the needle-bar, which is driven through the medium of a cam in the head by the shaft *C'*, having preferably at its outer end a fly-wheel. This shaft is geared to a vertical shaft *C²* by bevel-gears *c' c²*, and this shaft in turn is driven from the main shaft *E* through bevel-gears *c³ c⁴*. This main shaft is provided with a pulley *E'* driven by a belt from any convenient power-driven shaft.

b' is the presser-bar, and *b²* is the presser-foot.

The needle mechanism and the presser-bar mechanism are of the ordinary construction.

d is the take-up arm pivoted to the head C and governed by a cam mounted on the shaft *C'*.

a is a stud secured to or forming part of the base-plate, and situated directly in line with the needle, and secured to this stud is a throat-plate *a²*. The stud *a* is hollow, and in it is the rotary shuttle *F*, constructed in the following manner: The shuttle is mounted on a revolving spindle *f*, driven through the medium of a crank-arm *f'* from one arm of a lever *F'*, which is pivoted through the medium of a link *f²* to the base-plate of the machine. The other arm of the lever is yoked and spans an eccentric *C³*, so that as the vertical shaft *C²* revolves the eccentric will vibrate the lever, and consequently the shuttle will be revolved. On the exterior of this shuttle *F* is a hook *g* of the peculiar form shown,

and through the center of this shuttle passes a vertical spindle *g'* cut away at its upper end to allow for the formation of the loop of the needle-thread, and on this spindle is placed an ordinary spool of cotton, so that as the needle-bar is reciprocated and the needle forms a loop the hook will enter the loop, carrying with it the spool or shuttle thread and pass the spool-thread through the loop, forming a lock-stitch.

I have shown one form of shuttle that can be used in connection with my machine; but it will be understood that a shuttle of any ordinary construction may be used in its stead without departing from my invention.

On the base-plate A is an annular rim *A'*, forming a bearing for the gear-wheel *G*, by which the quilting-frame is revolved. This gear-wheel engages with a pinion *H* on an upright shaft *H'*, having at its lower end a worm-wheel *H²*, gearing with a worm *H³* on the main driving-shaft *E*. Carried by this gear-wheel is a quadrangular frame *I*, connected to the gear-wheel by spokes *I'*. The frame *I* has two longitudinal undercut ribs *I²* on two of its sides, and situated on the frame *I* is the work-carrying frame *K*, having tapered ribs adapted to slide in the undercut portions of the frame *I*, so that it will be seen that the work-carrying frame can be moved toward and from the center of the carrying-frame *I* as said carrying-frame is rotated.

Mounted in bearings *j* on the frame *I* is a cam *J*, having a groove *j'* of any irregular shape in its face. In this groove *j'* rests a pin *m*, having a friction-roller *m'*. This pin is fastened to the under side of the work-carrying frame *K*.

On the shaft *J'* of the cam *J* is mounted a gear-wheel *J²*, which meshes with an annular rack *L* on the base of the machine, so that as the carrying-frame *I* revolves the cam will not only rotate around the axis of the gear-wheel *G*, but also around its own axis.

The operation of the machine is as follows: The cloth is clamped or otherwise suitably secured to the work-carrying frame *K*. The machine is then set in motion by any suitable clutching or belt-shifting devices, and as the

needle reciprocates the frame I, carrying the cam J and the frame K, will revolve through the medium of the gear-wheel G and the gearing above described. As the frames revolve, 5 the pin *m*, carried by the work-frame K, is moved toward or from the center of rotation of the frame I, as the groove *j'* in the cam J dictates.

The cam can be readily removed and another 10 cam of a different character inserted to form different designs, when required.

When large pieces of fabric are to be quilted, one portion is quilted at a time and then moved and another portion clamped in position and quilted, and so on, until the quilting 15 is completed.

I claim as my invention—

1. The combination, in a quilting-machine, of the sewing mechanism, the carrying-frame, 20 and mechanism, substantially as described, for rotating said frame, with a work-frame guided on said carrying-frame, a cam mounted on the carrying-frame, a projection on the

work-frame meshing with the cam, and devices, substantially as specified, for operating 25 said cam.

2. The combination, in a quilting-machine, of the sewing mechanism, the carrying-frame, and mechanism for rotating said frame, with a work-frame guided on said carrying-frame, 30 a cam mounted on the carrying-frame, a pin on the work-frame engaging with said cam, a gear-wheel on the shaft of the cam, and an annular rack on the base of the machine engaging with the gear-wheel, so that on the rotation of the carrying-frame the work will be 35 moved toward and from the center of rotation of the carrying-frame, substantially as set forth.

In testimony whereof I have signed my 40 name to this specification in the presence of two subscribing witnesses.

HENRY LEFEBER.

Witnesses:

JOS. H. KLEIN,
HENRY HOWSON.