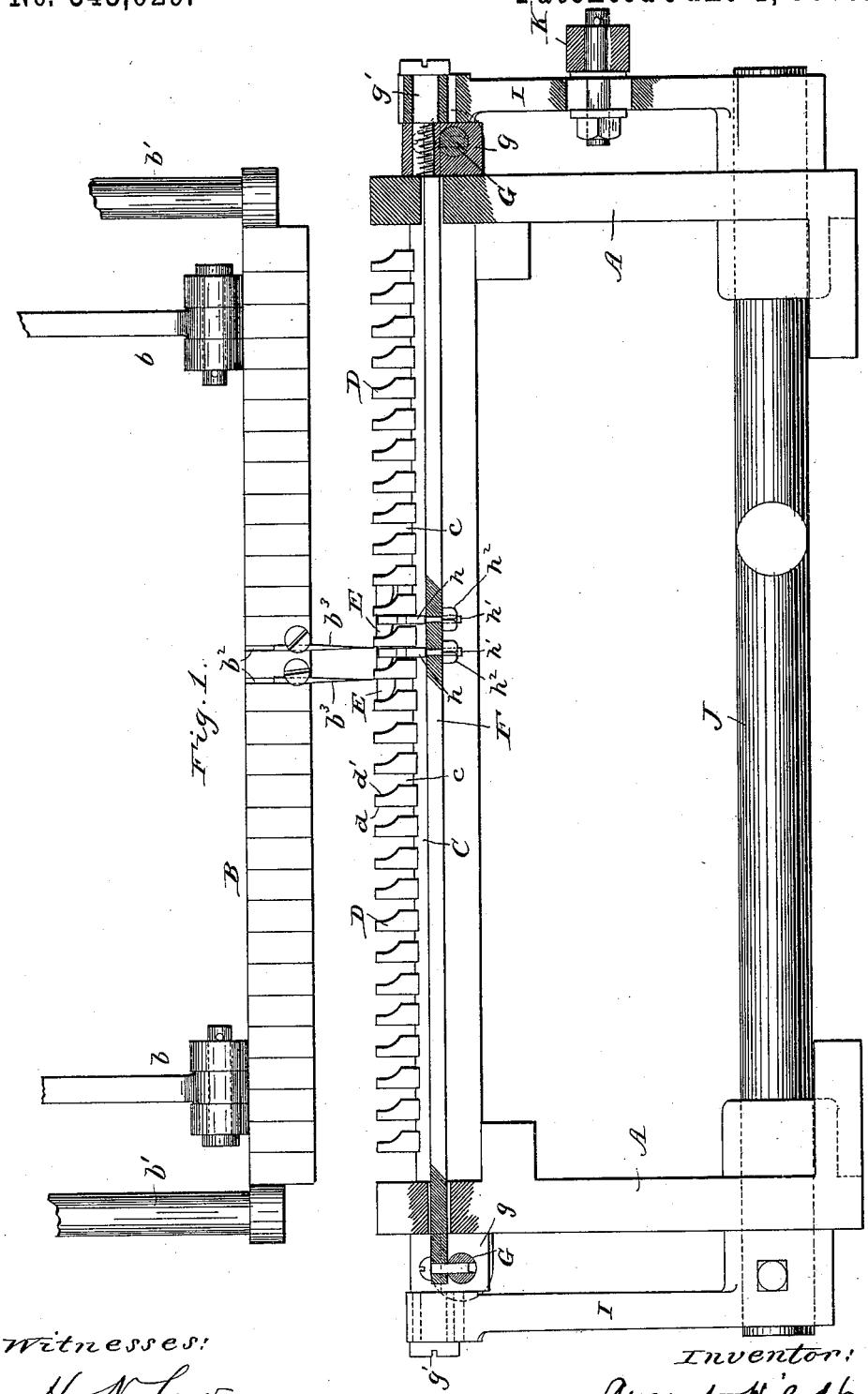
(No Model.) 2 Sheets—Sheet 1.

# A. HILDT.

## QUILTING MACHINE.

No. 343,029. Patented June 1, 1886.




Witnesses:
H. N. Low
C. A. Dick

Inventor:
August Hildt
by Manuel & Bailey
his attorneys

(No Model.) 2 Sheets—Sheet 2.

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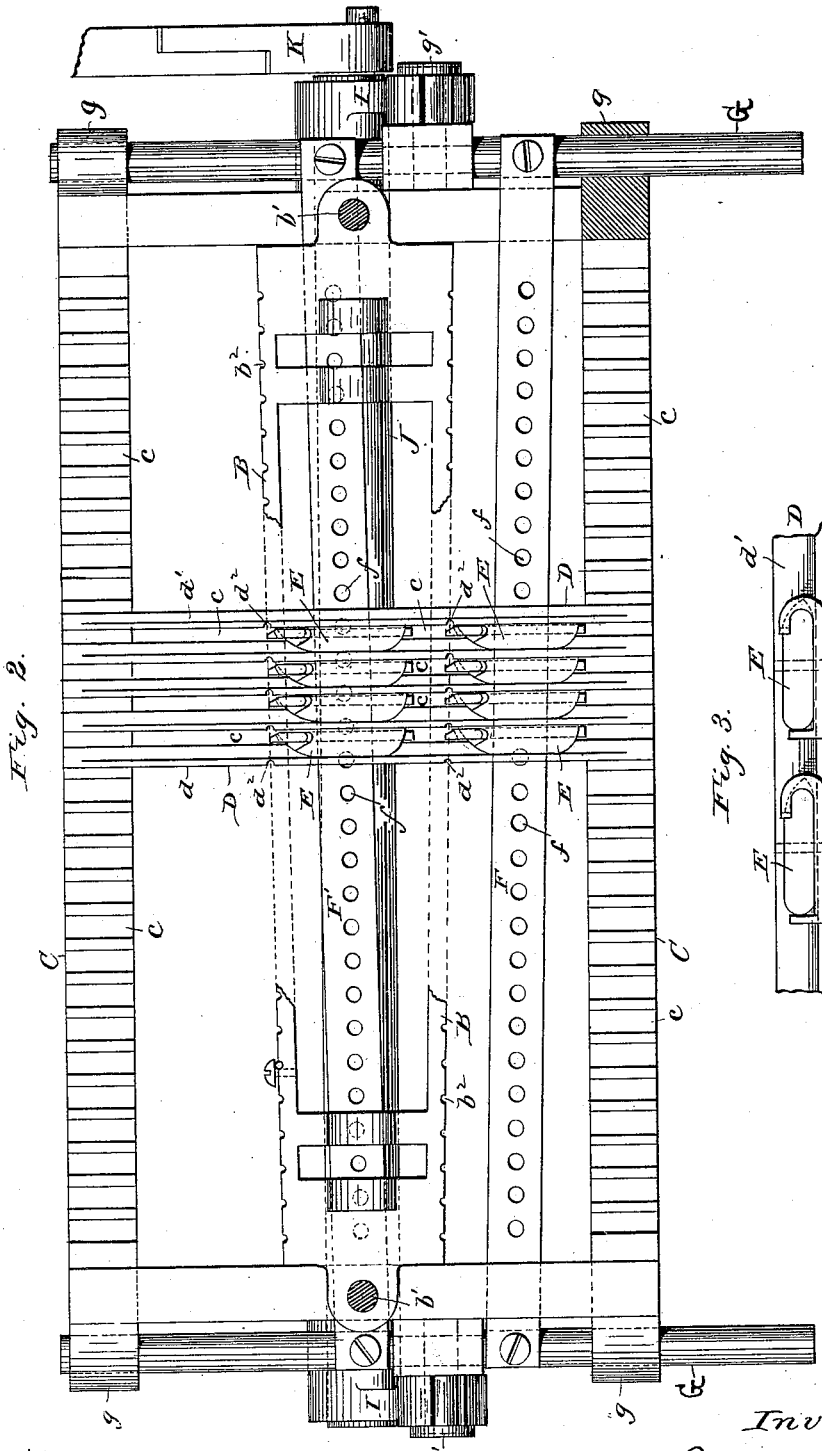

Fig. 2.

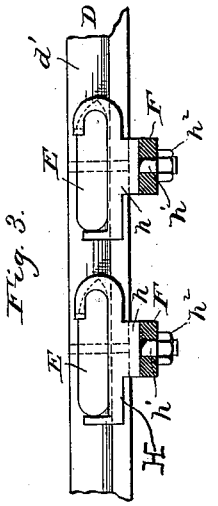

Fig. 3.

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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. 343,029, dated June 1, 1886.

Application filed December 29, 1885. Serial No. 187,021. (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 Quilting-Machines, of which the following is a specification.

My invention relates to that class of sewing-machines for quilting fabrics in which are employed two transverse rows of needles, the needles in the rear row being arranged so as to stand directly behind their corresponding needles in the front row; and it has reference particularly to the construction and arrangement of the shuttle-races for containing the shuttles which co-operate with the needles in performing the stitching operation, and to the combination therewith of the shuttle-drivers and actuating mechanism therefor, the object being to bring these devices conveniently, and without impairing their efficiency, into a compact form which will permit the parallel zigzag rows of stitching to be brought much nearer together, so as to make a finer pattern than heretofore has been produced by quilting-machines of the kind specified.

The nature of my improvements can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is an end elevation, partly in section, of that portion of a quilting-machine embodying my invention. Fig. 2 is a plan of the same, with the central portion of the skeleton needle-bar broken away, and also with all of the bars which form both the shuttle-races and shuttle-plates removed, excepting a few of the central ones. Fig. 3 is a longitudinal section through the center of a portion of one of the shuttle-races, showing the shuttles and their drivers in elevation.

In the drawings, A is so much of the supporting frame-work as needed for the purpose of illustration.

B is the skeleton needle-bar, to which vertical reciprocatory movement is imparted in the usual way.

At *b* are shown the jointed lower ends of the connecting-rods, which extend from the driving crank-shaft for the same, and at *b'* are represented the guide-rods, which are intended to slide, as customary, in vertical sleeve-bearings in the frame of the machine, so as to assure the movement of the needle-bar in the proper path.

At $b^2$ are represented the front and rear rows of grooves in which the needles are secured, two of said needles being seen at $b^3$ in Fig. 1. The grooves are so located that the needles in the rear row will be directly behind the corresponding needles in the front row.

I proceed now to describe those parts in which my invention is comprised. The shuttle-box is formed of front and rear cross-rails, C, grooved at *c* for the reception of the ends of the parallel bars D, which rest on said rails. The rails C are stationary, being secured to the frame of the machine in suitable position, and the ends of the bars D are by proper means secured in their seats in the rails C. These bars form at once the shuttle-races and shuttle-plates, each having one flat smooth side, *d*, and having on the opposite side a concave form, as indicated at *d'*. The "shuttle-plate" is the flat smooth face of the bar, against which the flat side of the shuttle runs, and in this face, at proper intervals apart, are formed the two vertical needle-grooves $d^2$, which are to be entered by the descending pair of needles, which co-operate with the two shuttles in the shuttle-race, bounded on one side by the said shuttle-plate. The bars are placed parallel to one another, with the flat face of one adjoining the concave face of the next, the two faces forming conjointly a shuttle-race in which the shuttles can fit, and the longitudinal space separating the two constituting a slot, *e*, through which the shanks of the shuttle-drivers can pass.

In each shuttle-race are placed two shuttles, E, the one directly in the rear of the other, set at proper intervals apart in reference to the two needle-grooves $d^2$ in said race to fittingly co-operate, respectively, with the needles which enter said grooves.

Below the shuttle-race bars D are the horizontal reciprocatory shuttle-driver-carrying bars F F', which extend crosswise of the shuttle-box and at their ends are made fast to horizontal rods G, supported and adapted to slide back and forth in bearings *g*, attached to some

suitable stationary part of the machine. Each shuttle has its own driver, H, formed as shown in Figs. 2 and 3. The drivers of the rear row of shuttles are attached to the rear bar, F, and those of the front row of shuttles are attached to the front bar, F′, both bars being connected to the same slide-rods, so that these instrumentalities constitute as a whole a sliding frame, which imparts like motion to both sets of shuttles. The drivers are attached to their bars F F′ in the manner indicated in Fig. 3, the shank *h* on the driver passing down through the slot *e*, and being formed at its lower end into a screw-threaded stem, *h′*, which passes through a hole, *f*, in the carrier-bar F, and is held in place by a nut, $h^2$, screwed onto it from below the bar. The slide-rods G are reciprocated by means of arms I, having forked upper ends, which straddle pins *g′*, laterally projecting from the slide-rods, and at their lower ends are fast to a rock-shaft, J, supported in suitable bearings in the frame of the machine. To one of the arms I is jointed the pitman K, which at its other end is to be connected to an eccentric on the driving-shaft of the machine. The vibratory movement thus imparted to the one arm I is imparted to the other arm I on the opposite side of the machine through the intermediary of the rock-shaft J.

In all cases heretofore of which I have knowledge in which the needles of the two rows have been placed so that each needle of the front row has a needle in the rear row directly behind it it has been the practice to arrange the two shuttles for these needles one on each side of a shuttle-plate, so that there will be but one shuttle in each race. This multiplies the number of races required, and also prevents the shuttles in row from being brought as near together as is necessary to produce fine work.

Under my improvement each race contains two shuttles, each of which has its own driver, and the parts are so arranged as to bring them together in the most compact form, while maintaining unimpaired their efficiency of action, and giving them capacity for doing a kind of work which has not hitherto been obtained in machinery of the class specified. It will be noted that the bars F, as well as the two arms of the needle-bar in which the rows of needles are respectively carried, are arranged on lines which are radial. This is due to the fact that the particular machine of which the devices represented form part was designed to be used for quilting conical or tapering skirts, &c. For quilting straight goods, the devices in question will be parallel to each other.

Having described my improvements in quilting-machines, what I claim as new, and desire to secure by Letters Patent, is as follows:

The combination of a needle-bar having two rows of needles placed so that the needles in the rear row shall stand directly behind their corresponding needles in the front row, the bars D, having one flat and one concave face, with two vertical needle-grooves, $d^2$, in the flat face, and placed together in the manner described, to form a series of slotted shuttle-races, two shuttles in each race, drivers for said shuttles, and a sliding reciprocatory frame to which said drivers are attached, and by which they are reciprocated, the parts being constructed and arranged relatively to one another substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto signed my name this 22d day of December, 1885.

AUGUST HILDT.

Witnesses:
ABRAHAM HAFER,
E. A. ST. JOHN.