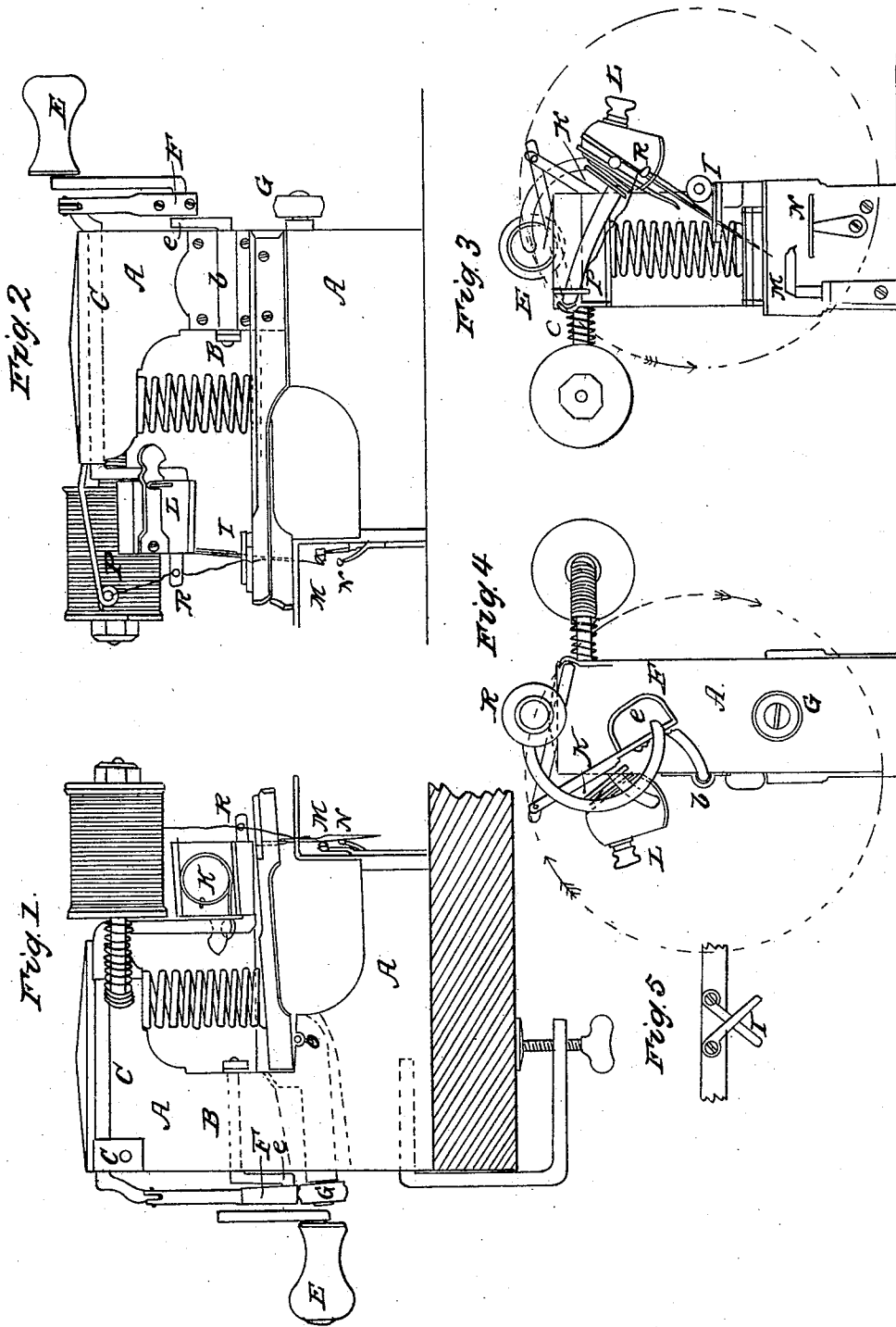


J. E. A. GIBBS.
Sewing Machine.

No. 16,434.

Patented Jan. 20, 1857.



UNITED STATES PATENT OFFICE.

JAMES E. A. GIBBS, OF MILL POINT, VIRGINIA.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 16,434, dated January 20, 1857.

To all whom it may concern:

Be it known that I, JAMES E. A. GIBBS, of Mill Point, in the county of Pocahontas and the State of Virginia, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawings, making part of this specification, in which—

Figures 1 and 2 are side views of the whole machine, showing the crank operating the machine in two different positions; Fig. 3, a front view; Fig. 4, a back view. Fig. 5 represents a detail of the adjustable needle-guide.

The nature of my invention consists in so arranging and constructing the machine as to form the chain-stitch on a stationary hook for the purpose of simplifying the mechanism of the whole machine.

To enable others to use and to construct my machine, I now proceed to describe it.

A is a frame or body of the machine, carrying on its lateral sides bearings for the main shafts B and C, giving the proper motion to the mechanism operating the machine. The shafts are placed in suitable journals or sleeves, located at *c* and *b*, as shown in the annexed drawings. The shaft B, on leaving the sleeve *b*, is bent into a small crank, *c*, carrying the cam F, whence it sweeps circularly to the handle E, forming such an angle as to cause the cam to strike the roller G when the handle is in its descending motion, thus increasing the stability of the machine. The cam F is secured to a metallic brace that forms both the connecting-rod with the arm H of the shaft C and journal of the small crank *c*. The shaft C extends longitudinally throughout the whole length of the upper structure of the frame, and is bent into angles for connecting with the brace at the rear and with the needle-head at the front of the frame. The motion given to the crank by turning the handle E in the direction indicated by the arrows will impart to the needle a peculiar vibration in connection with the other parts hereinafter described. The needle-head is constructed of wood, brass, or any other suitable material, and carries the needle and the feeder or feeding-hook, both of which are securely fastened to its front side. It has on its under side a longitudinal groove

or bore, through which the horizontally-bent rocking shaft runs loosely, permitting the proper oscillating motion of the needle-head when its needle is guided during part of its descending and ascending motion by the cross-bars I and the cloth or table slot as points of rotation.

K is a spring applied to the side of the needle-head for the purpose of pressing gently the needle into the angle formed by the guiding cross-bars, and also of preventing the needle-head from tipping over its rotating axle when so inclined that its center of gravity will be thrown out of a perpendicular line through the rocking-shaft. On the other and opposite side of the needle-head is a stop adjustable by means of a screw, L, limiting the course of the needle in relation with the rocking shaft, thus regulating the length of the stitches.

The pedestal of the frame bears in front the cloth-table, which is slotted, so as to allow a free passage and play of the needle, and is furnished with a stationary hook, M, screwed or otherwise permanently attached in such a position as to catch the thread from the needle when the latter is guided thereto by a projecting guide, N, for the purpose of forming the loop in the manner hereinafter described.

The contrivance for holding and feeding the cloth upon the table consists in a clamp pivoted at O, and pressing down on the table by inserting between itself and the capital of the frame a spiral spring or its equivalent, unless its action is relieved by exerting a pressure upon the tail-piece and roller G of the clamp, which is done by the cam F, attached to the main crank, operating the machine at the moment the feeding is required.

The description of the machine is completed by mentioning the arm carrying the bobbin, which has a spiral spring wound around it and a nut for the purpose of regulating the intensity of friction which the bobbin must offer for the proper operation of the machine; finally, by mentioning the thread-carrier P and the eye E in the extremity of the rock-shaft, for conducting the thread in a suitable manner to the needle.

The cloth being placed upon the table and held there securely by the clamp, the needle properly adjusted in the cross-bar guides, the stop regulated so as to limit the oscillation of

the needle up to a determined point, the thread conducted through the carrier and the eye R to the needle, and, finally, the whole machine being clamped to the edge of a table, so that the crank-motion be free from any intervening obstacle, it will be ready for operating in the following manner: The handle E, on being turned in the direction of the arrows, imparts to the rocking shaft and needle-head a vibrating motion, so that the said needle-head will ascend laterally when the handle is turned in the upward direction, and descend in returning the same path it followed up. When the handle shall have passed the dead-point and acquired the greatest power of its action—which is communicated to the needle at the moment it has to perform the chain-stitch, for which the machine is arranged—the needle is guided first by the cross-bars by friction-screws, which are set in such a manner as to preserve the angle into which the needle glides in a proper position in relation to the needle-slot. The needle, after passing through the cloth, is again guided upon an inclined plane of the stationary crochet-hook, the cloth forming the pivoting-point of the needle, causing it to oscillate within such limits it is adjusted for. The loop is formed by the needle passing the thread over the crochet-point, where it remains until the needle, in its next downward motion, passes through

the loop and draws it off the hook. The performance of this part of the work is insured by giving to the needle a slight curve, the thread forming its chord. The loop being thus formed, the handle will now bring its cam in contact with the roller of the tail-piece of the clamp, causing its elevation in front. During the time the clamp is raised from the cloth-table the rigid feeding-hook propels the cloth a single step, which movement is imparted to it by the rocker before resuming its upward motion. By this arrangement it will be seen the needle does not propel the cloth. The stitches are therefore more regular, and the needle not liable to break. The needle-head will draw tight the loop by its upward motion and repeat the now-described operation with every revolution of the crank.

Having now fully described my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

Making the chain-stitch with a vibrating needle in combination with a stationary hook.

In testimony whereof I have signed my name to this specification, before two subscribing witnesses.

JAMES E. A. GIBBS.

Witnesses:

A. POLLAK,
CHAS. EVERETT.