(No Model.)

T. A. MACAULAY.

SEWING MACHINE.

No. 265,683. Patented Oct. 10, 1882.

Fig. 1.

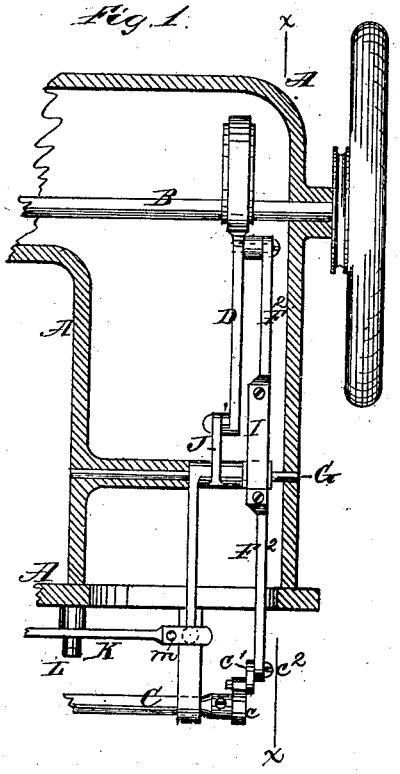


Fig. 2.

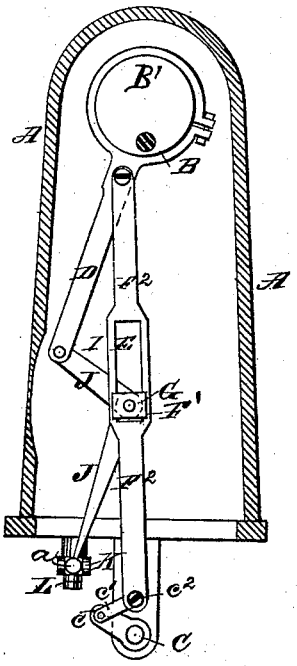
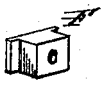


Fig. 3.

Fig. 4.



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THOMAS A. MACAULAY, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 265,683, dated October 10, 1882.

Application filed August 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. MACAULAY, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following, with the accompanying drawings, is a specification.

Similar letters refer to like parts.

Figure 1 is a side elevation of the devices for oscillating the shuttle and rotating the feed-operating shaft. Fig. 2 is an end view of the same through the line *x x* in Fig. 1. Fig. 3 is a plan view of the shuttle-lever. Fig. 4 is a perspective view of the guide-block for the pitman-lever.

My invention relates to that class of sewing-machines in which the shuttle is operated by horizontal and vertical levers actuated by an eccentric or crank on the main shaft, and the feed-bar is operated by a rotary shaft, which receives its motion from a pitman-lever actuated by the shuttle mechanism.

In the accompanying drawings, A represents the rear part of the arm and bed of a sewing-machine. B is the main driving-shaft. C is the feed-shaft, having its bearings in projections from the under side of the bed. D is an eccentric-rod. J J is a bell-crank lever. K is a shuttle-lever, pivoted to the under side of the bed by stud L. F^2 F^2 is a pitman-lever, having a slot E, and is pivoted to the pitman D, near its connection to the eccentric on the main shaft. F is a guide-block fitting the slot E, and mounted on the stud G. *c* is a crank on the rear end of the feed-shaft. *c'* is a link. c^2 is a pivot connecting the pitman-lever with the link *c'*.

Motion being imparted to the main shaft B, the eccentric-rod D being connected to the short arm of the bell-crank lever J J, and its long arm being connected to the shuttle-lever K in the fork M, an oscillating motion is given to the shuttle-lever K. The pitman-lever F^2 F^2, being pivoted to the eccentric-rod D, receives its motion from the eccentric-rod, and it being fulcrumed at F' by pin G, its lower end passes around the center of the feed-shaft C, carrying the crank *c*, through its connection with the link *c'*, giving the necessary rotary motion to the shaft for operating the feed-bar of a sewing-machine. The stud G is a common pivot or bearing for the bell-crank J J and the slotted pitman-lever; but a radius-bar pivoted to the stud G, or to a separate stud, may be substituted for the slot and block; or a radius-bar may be pivoted to the arm, or to the bell-crank or connecting-rod, and operate as a fulcrum-guide.

A pin in the end of the pitman-lever operating in a slot in the crank may be used instead of the link *c'*.

The advantages of my improvements are that the number of joints between the shuttle-lever and the main shaft and the main shaft and the feed-shaft, considering the whole number of joints in the entire structure, are better adapted to the durability and ease of operation, and the cost of proper construction is reduced.

It will be admitted that the principal and greatest wear will be on the shuttle-movement, which is required to move nearly three inches twice each stitch, while the movement of the feed-bar at its usual stroke is about three-sixteenths of an inch, while its greatest known stroke in manufacturing-machines is about three-eighths of an inch.

It will be apparent from the above that the least number of joints should be apportioned to the hardest duty—namely, that of shuttle-driving—while the feed mechanism, having considerably less duty to perform, is not so severely taxed, and does not require the same degree of durability to perform its functions acceptably in the whole structure.

Having described my invention, I claim—

The combination, with the main shaft B, eccentric B', eccentric-rod D, connected directly to the short arm of the bell-crank lever J J, and shuttle-lever K, of the pitman-lever F^2 F^2, pivoted to and receiving its motion from the eccentric-rod D, and feed-shaft C, substantially as described.

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Witnesses:

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