

(No Model.)

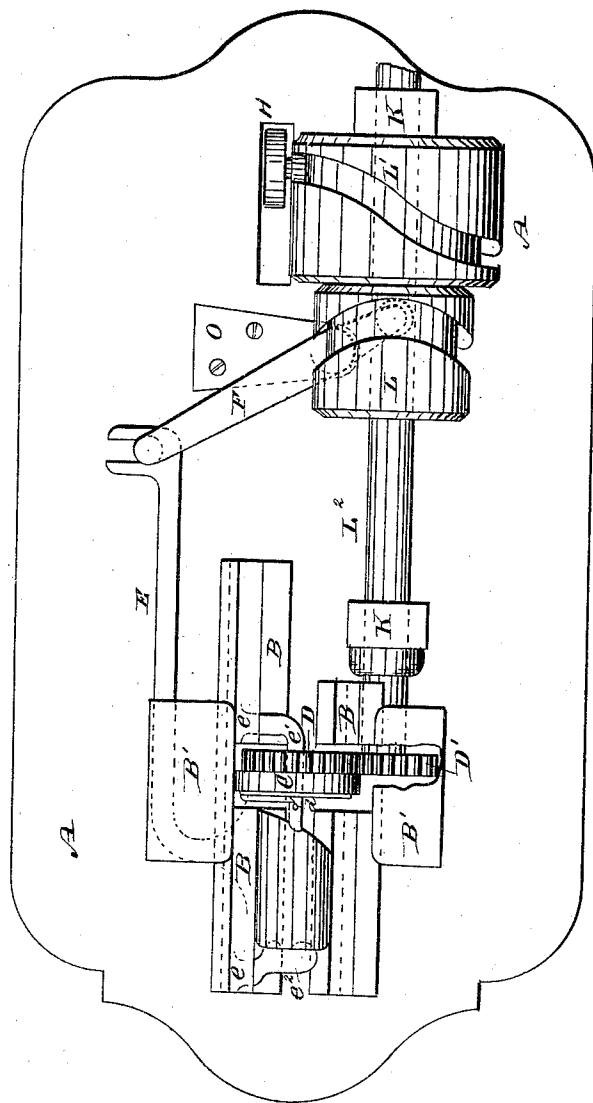
3 Sheets—Sheet 1.

A. LAMBERT.  
SEWING MACHINE.

No. 277,747.

Patented May 15, 1883.

Fig. 1.



WITNESSES:

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- INVENTOR:

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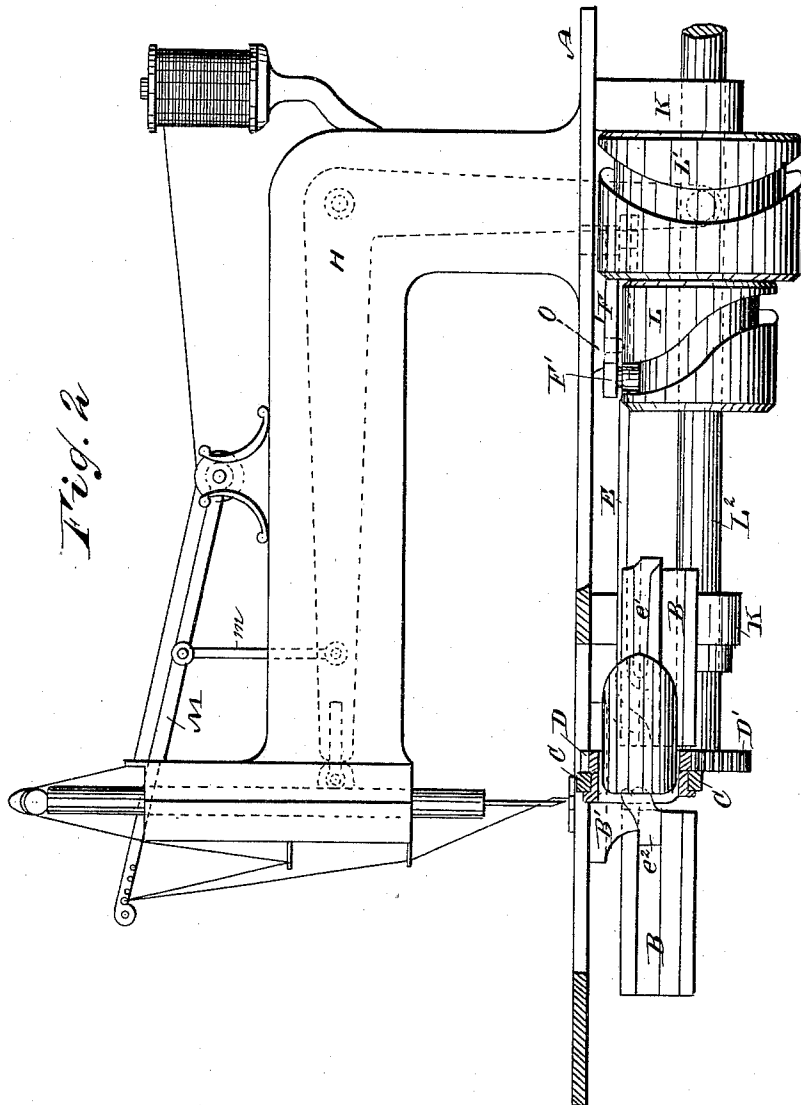
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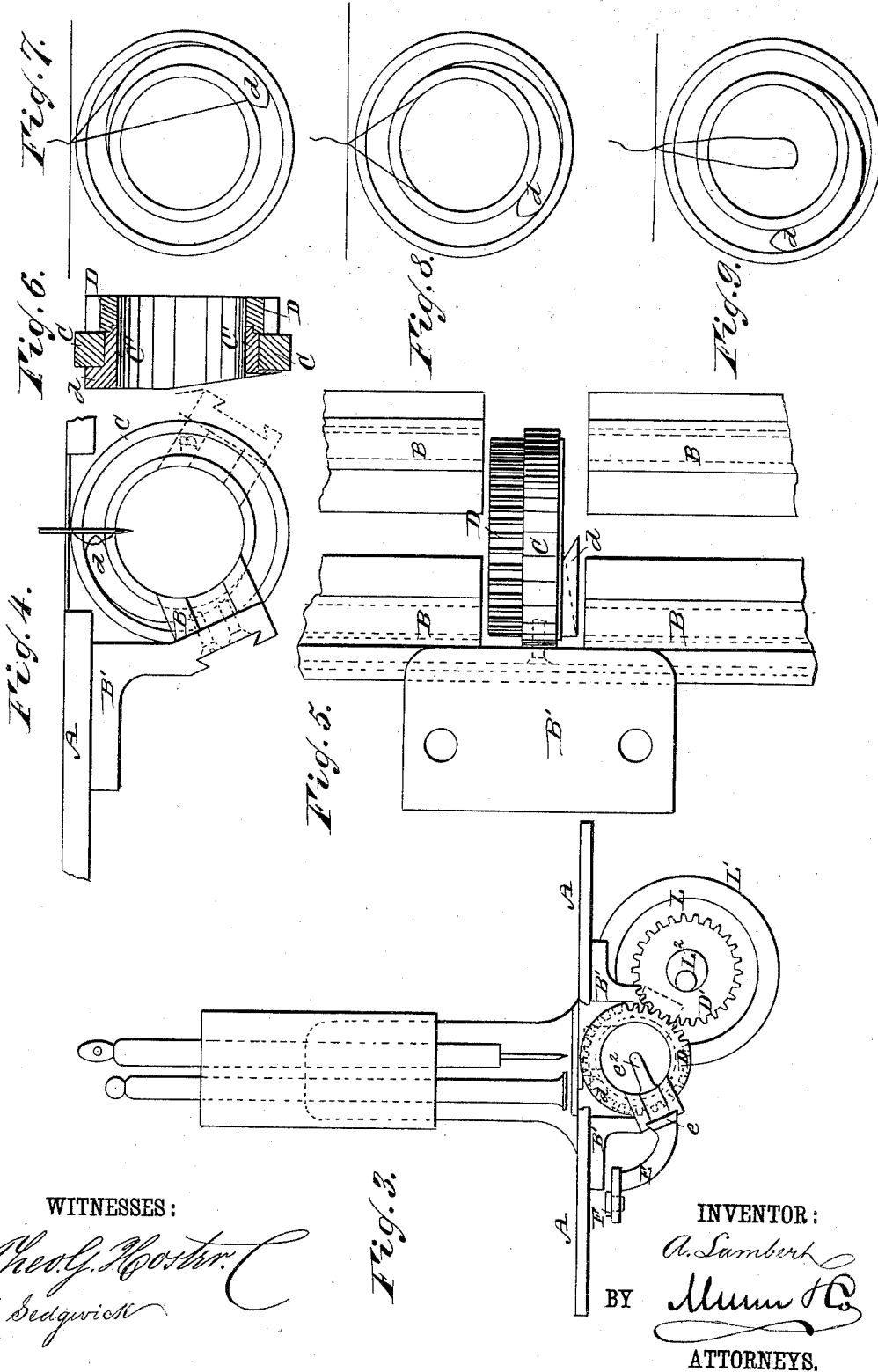
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

AUGUSTE LAMBERT, OF FOSSE, BELGIUM.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 277,747, dated May 15, 1883.

Application filed January 8, 1883. (No model.) Patented in Belgium November 13, 1882.

*To all whom it may concern:*

Be it known that I, AUGUSTE LAMBERT, a subject of the King of Belgium, and residing at Fosse, in the Kingdom of Belgium, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings and letters of reference marked thereon, in which—

Figure 1 is a plan view of the under side of my improved machine. Fig. 2 is a longitudinal elevation of the same, parts being shown in section. Fig. 3 is a front or end view of the same. Fig. 4 is an end view of the rotary hook and adjacent parts on an enlarged scale. Fig. 5 is a plan view of the same. Fig. 6 is a cross-sectional elevation of the hook, and Figs. 7, 8, and 9 show the different positions of the mechanism in forming the stitch.

Similar letters indicate like parts in all the figures.

My invention relates to sewing-machines; and it consists in certain improvements in Letters Patent granted to me August 8, 1882, and numbered 262,437, as hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, the shuttle-carrier guide is composed of longitudinal guides B, connected to the supports B', which are secured to the base-plate A. Each half of the guide may be cast in one piece, as shown in the left-hand side of Fig. 5, or in two pieces, as shown in the right-hand side of said figure. The interior faces of the guides B are curved to conform to the contour of the shuttle, as shown in Figs. 3 and 4. The guides B B, which are parallel with each other, are at a sufficient distance apart to allow of the passage of the two projecting ends  $e'$   $e''$  of the shuttle-driver, which are secured to a longitudinal plate,  $e$ , of trapezoidal form in section, which plate is secured to one end of the arm E, and moves to and fro in a guide of the same shape, formed in the outer side of the support B', as shown in Figs. 3 and 4. One of the ends of the shuttle-driver is a simple bent rod,  $e'$ , the rounded point of which rests in a slight hollow in the front part of the shuttle. The other end,  $e''$ , is provided with two rounded projections, which engage with two corresponding recesses in the back of the shuttle, as shown in Fig. 1, in such a manner that the shuttle,

after having been adjusted between the two ends  $e'$   $e''$  with a certain amount of play allowed, cannot turn on its axis during its reciprocations.

In the middle of the shuttle-driver, and secured to the reciprocating plate  $e$ , at one of its ends, is an arm, E, as shown in Figs. 1, 2, and 3, having a fork at its opposite end for the reception of the roller of a lever-arm, F, oscillating on a pivot secured to the arm O, which is attached to the base-plate A of the machine, the other arm, F', of the lever, which is also provided with a roller at its end, being oscillated by the spiral groove of the cylinder L', fast on the main shaft L<sup>2</sup>.

To one of the supports, B', between the ends of the guides or in recesses formed therein the ring C is secured.

In the ring C is inserted a second ring, C', revolving freely in the first ring, and having at one side a hook,  $d$ , formed in a spiral form for about half its diameter, and then lying flush with the ring forming the base of the hook, as shown in Fig. 6. To the opposite side of the ring C' is secured the gear-wheel D, which engages with the gear-wheel D', fast on the main shaft L<sup>2</sup>, thus imparting a rotary motion to the hook  $d$ . The spiral groove on the cylinder L' on the main shaft communicates the ascending and descending movement to the needle through the elbow-lever H, at the lower end of which is a roller engaging in the spiral groove of the cylinder L'. The main shaft revolves in two bearings, K, suitably secured to the base-plate A, and receives its rotary motion from a band or strap passed over a pulley fast on it, or in any other known manner. Supposing the needle has descended, as shown in Fig. 4, and has formed a loop under the cloth or material by a slight ascending movement of the needle in the ordinary manner, the loop is taken up by the hook  $d$ , and is enlarged or opened out in such a manner that a part of the thread is carried around on the projecting portion on the end of which is the hook, while the other part of the thread, being placed in a right line in front of the ring, takes the form of a segment, as shown in Fig. 7. When the hook has arrived in this position the shuttle advances and passes through the enlarged loop. The thread disengages itself from the hook by simply sliding off the di-

minishing spiral portion of the hook. This movement is exceedingly regular and easy. The shuttle is at this moment surrounded by the loop, as shown in Fig. 8, and passes through it. The latter then slides in between the shuttle-driver and the back part of the shuttle, and is there completely disengaged from the shuttle, as shown in Fig. 9, and through the action of the take-up lever M, which continues its ascending movement, the stitch is drawn tight. The hook has then completed its movement and the shuttle has returned to its first position, to recommence the movement. The pivot of the take-up lever M is placed in the middle of the arm of the machine, thereby imparting an easy and effectual movement to said take-up lever, and its suspension-point is joined to the needle-carrier lever by a rod, *m*, as shown in Fig. 2. In this manner I am enabled to employ any size take-up lever as desired.

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

1. The combination, with the guides B, the hooked ring C', and means for rotating the said ring, of the plate *e*, provided with the inwardly-projecting ends *e'* *e*<sup>2</sup>, the end *e*<sup>2</sup> being provided with two rounded projections, and means for reciprocating said plate, substantially as herein shown and described.

2. The combination, with the shuttle-driver *e'* *e*<sup>2</sup> and mechanism for driving the same, of the stationary ring C, movable ring C', provided with the hook *d*, pinion D, and shaft L<sup>2</sup>, provided with the pinion D<sup>2</sup>, substantially as described.

AUGUSTE LAMBERT.

Witnesses:

AUG. FORISSEN,  
PHILIPPE MASSEN.