(No Model.) 2 Sheets—Sheet 1.

L. ESCHNER.

MULTIPLE SEWING MACHINE.

No. 340,497. Patented Apr. 20, 1886.

Fig. 1.

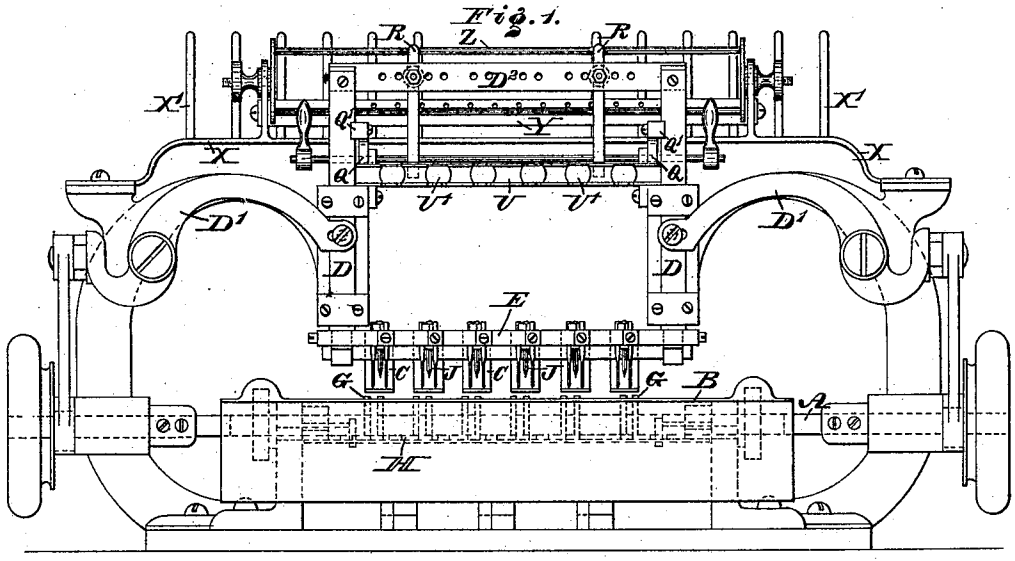
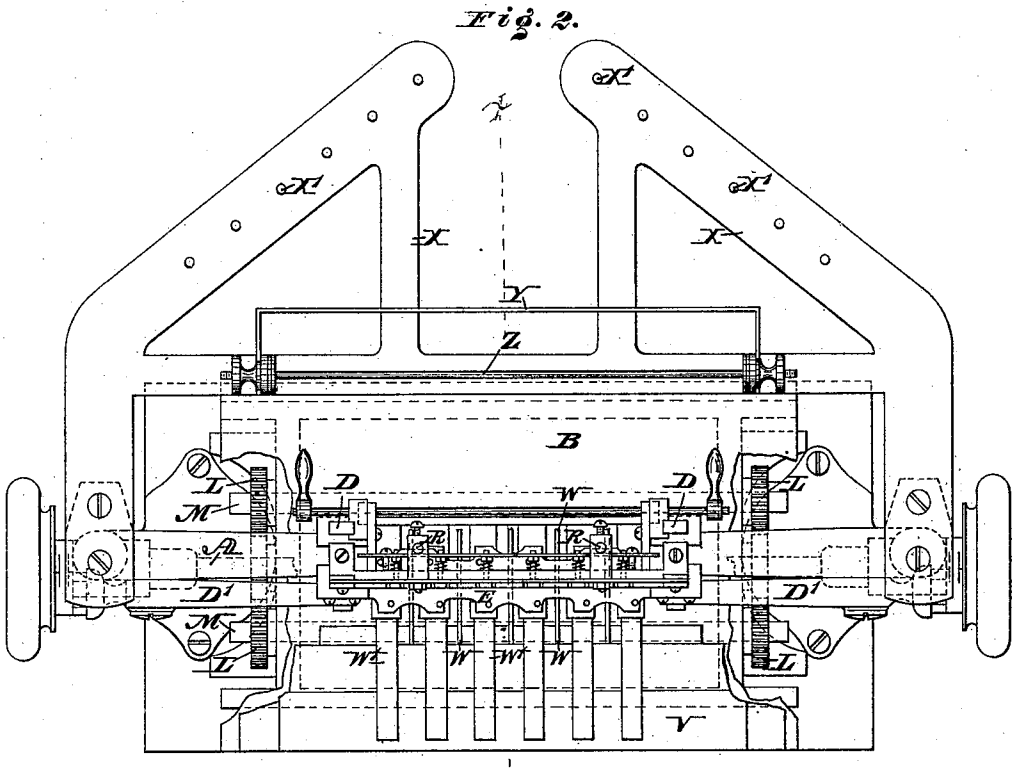


Fig. 2.



WITNESSES:
L. Douville
H. F. Richer

INVENTOR:
Louis Eschner,
BY John A. Wiedersheim
ATTORNEY.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

L. ESCHNER.

MULTIPLE SEWING MACHINE.

No. 340,497. Patented Apr. 20, 1886.

Fig. 3.

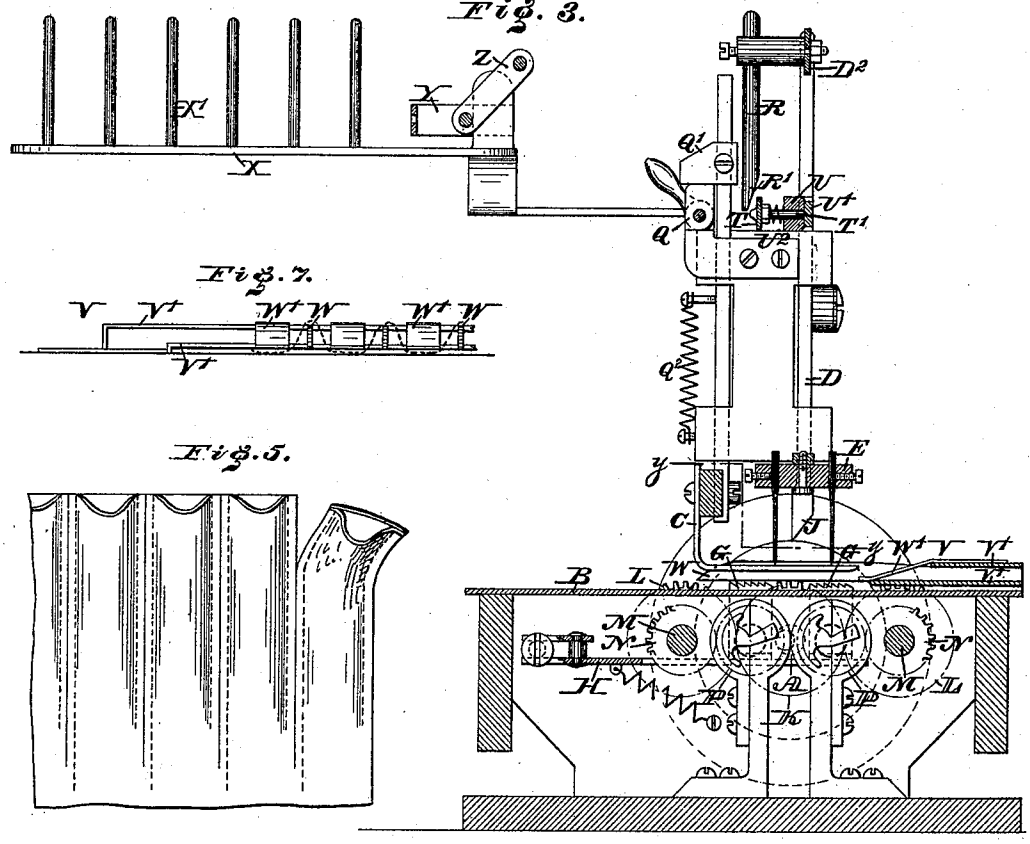


Fig. 7.

Fig. 5.

Fig. 6.

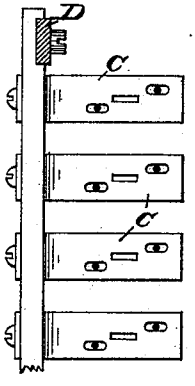
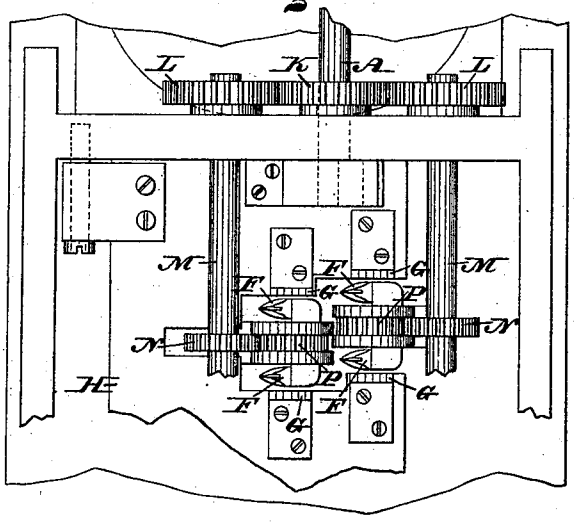


Fig. 4.



WITNESSES:

L. Douville

W. F. Kircher

Louis Eschner, INVENTOR:

BY John A. Wiedersheim

ATTORNEY.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

LOUIS ESCHNER, OF PHILADELPHIA, PENNSYLVANIA.

MULTIPLE SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 340,497, dated April 20, 1886.

Application filed August 13, 1885. Serial No. 174,235. (No model.)

To all whom it may concern:

Be it known that I, LOUIS ESCHNER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Multiple Sewing-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a front view of a multiple sewing-machine embodying my invention. Fig. 2 represents a top or plan view thereof. Fig. 3 represents a vertical section in line *x x*, Fig. 2, on an enlarged scale. Fig. 4 represents a top or plan view of a detached portion on an enlarged scale. Fig. 5 represents a piece of goods formed by the machine. Fig. 6 represents a section of a portion in line *y y*, Fig. 3. Fig. 7 represents a side elevation of a detached portion.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a sewing-machine organized for simultaneously forming two or more rows of stitches, as will be hereinafter set forth.

It also consists of a cutter for severing the fabric between the rows of stitches.

It further consists of a novel take-up.

It further consists of a guide so constructed that fabric passed through the same may be puffed or made full preparatory to stitching, a feature of importance in the production of tubular bands for neck-scarfs, &c.

Referring to the drawings, A represents the driving-shaft of a sewing-machine, and B the cloth-plate, C the presser-foot, and D the needle-bars thereof, it being noticed that there are two needle-bars, and two arms, D′, which operate said bars, said arms being pivoted to goose-necks on opposite sides of the frame of the machine, and said needle-bars vertically guided on the inner ends of said goose-necks. The bars D are connected by a horizontally-extending bar, E, to which the needles are secured, it being noticed that there are numerous needles, and the same are arranged zigzag on said bar E, and there is a right-or-left operated looper, F, for each needle, and as many feed-bars G as there are needles, said bars being attached to a plate, H, which is common to all of said feed-bars, and operated as is usual in the feeding devices of sewing-machines. The presser-foot consists in reality of half as many presser-feet as there are needles, and they are connected with a frame whose upright portions or shanks are guided in the frame or goose-necks of the machine.

J represents cutters or blades, which are connected with the bar E and located between the needles in such manner that as said plate descends the cutters sever the fabric between two adjacent rows of stitches, thus dividing the fabric into bands or strips sewed along their sides.

The loopers F are arranged in pairs in relation to the position of two adjacent needles, as more particularly shown in Fig. 4, and operated as follows: The driving-shaft A carries a pinion, K, with which meshes pinions L, the latter being secured to parallel shafts M, whose bearings are beneath the table B. Each shaft M carries a number of pinions, N, which mesh with pinions P, the shaft of each of the latter carrying at opposite ends a looper, F, it being seen that when the shaft A is in operation the shafts M are rotated, and owing to the gearing N P the loopers F F are also rotated, whereby as the needles are operated and the loopers operate in harmony therewith sewing will be accomplished in as many rows as there are needles, the cutters severing the fabric between each two adjacent rows of stitches, as is evident, a form of the work produced being shown in Fig. 5. The presser-foot C is raised by means of blocks or cam-shaped pieces Q, which are pivoted to the frame or goose-necks, provided with suitable handles, and bear against shoulders or projections Q′ on the shanks of the presser-foot, whereby when the pieces Q are in upright position the presser-foot is held raised, and when said pieces are rotated or turned laterally the presser-foot is permitted to drop, the dropping or descent being assisted by the action of springs Q^2, suitably applied.

Connected with the needle-bars D, at the top thereof, is a bar, D^2, and depending from and secured to the latter are bars or rods, R, the lower ends whereof are inclined or beveled, as at R′, and adapted to engage with a horizontally-sliding bar, T, the latter carrying pins T′, which are sustained on and guided by

a stationary bar, U, which is supported on the frame or goose-necks of the machine. Blocks U′ are connected with the outer ends of the pins T′, and placed parallel with the bar U, and held thereagainst by springs U^2, which bear against the bar U and heads of the bolts or pins T′ or bar T, it being seen that when the needles descend the rods R press against the bar T, thus separating the blocks U′ from the bar U, and permitting the thread to be fed through or between the bar U and blocks U′. When the needles rise, the blocks U′ close against the bar U and tightly hold or clamp the thread against the bar U, preventing movement of the thread during the take up or tightening of the stitch.

V represents a guide for the fabric, the same consisting of upper and lower plates, V′ V′, between which rise ribs W, alternating with which are downwardly-pressing spring-plates W′, whose rear ends are secured to the upper plate V′. It will be seen that as the fabric is passed through the plates V′V′ it is raised by the ribs W and depressed by the springs W′, thus forming the fabric into scallop form. A piece of fabric is passed under the guide, and the two pieces are directed to the needles and stitched or sewed in rows, thus producing a fullness between the two pieces of fabric, resulting in tubes or puffs adapted to receive lining, and when severed or divided be serviceable for bands of neckscarfs, &c.

The several spools are mounted on a support, X, which is connected with the frame of the machine, and provided with pins X′, on which the spools are fitted. The support X carries a thread-guide, Y, and a tension device, Z, of the form of a rotary frame, around which the thread is passed, and may be wound thereon as often as required to increase or decrease the tension of the thread.

As the needles are arranged zigzag or diagonally one with another they occupy less room than if arranged in a light line. The same provision exists in the arrangement of the pairs of loopers, the whole contributing to render the machine compact and reduce the dimensions of a multiple sewing-machine.

Each presser-foot has two diagonally-arranged slots for two needles and a throat for a blade, avoiding a foot for each needle.

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

1. The single bar E, with needles secured as described, in combination with a series of presser-feet, C, each presser-foot having diagonally-arranged slots and a throat therein, and a series of cutters adapted to operate in said throat, substantially as described.

2. A multiple sewing-machine having the plate H, the feed-bar G, attached to said plate H, a series of needles, the shaft M, having pinion N thereon, and means, substantially as described, for rotating said shaft, the pinion P, meshing with said pinion N, and having an axle carrying at each end a looper, F, said parts being combined and operating substantially as described.

3. The plate H, having a series of feed-bars, G, in combination with presser-feet C, and guide-bars V, having upper and lower plates, and ribs, substantially as described.

4. In a multiple sewing-machine, needles and loopers arranged in pairs, in combination with cutters arranged in relation to said needles, each between the members of a pair thereof, substantially as described.

5. The needle-bars D, in combination with single bar E, having cutters J, and bars D^2, with rods R, having beveled ends R′, horizontally-sliding bar T, with pins T′, stationary bar U, blocks U′, and springs U^2, said parts being arranged and operated substantially as and for the purpose set forth.

LOUIS ESCHNER.

Witnesses:
JOHN A. WIEDERSHEIM,
A. P. GRANT.