

L. PLANER.
Sewing Machine.

No. 48,204.

Patented June 13, 1865.

Fig. 1.

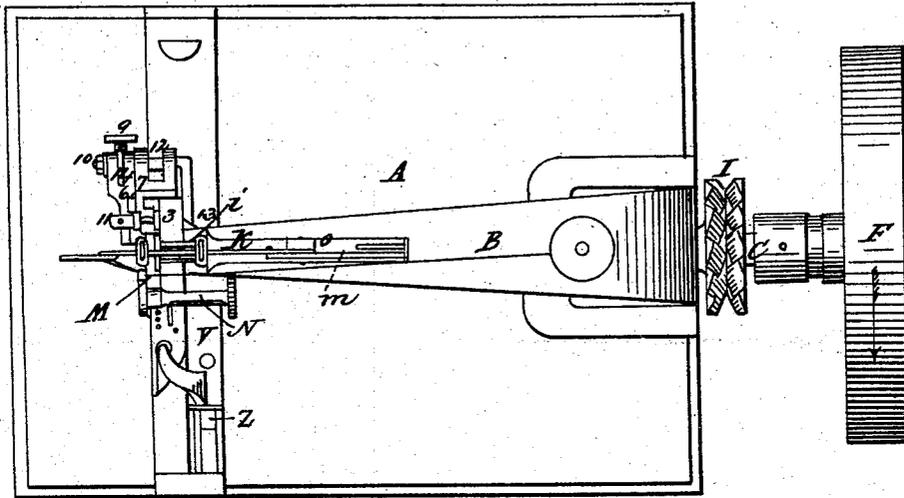
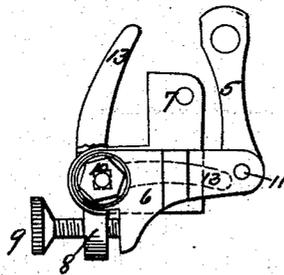


Fig. 4.



Witnesses:

C. A. Barques

Edmunds Aborn

Inventor:

Louis Planer

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Fig. 5.

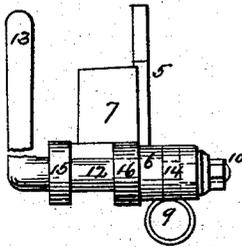


Fig. 6.

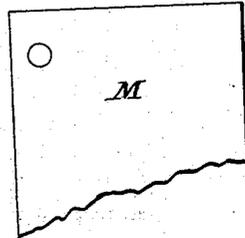
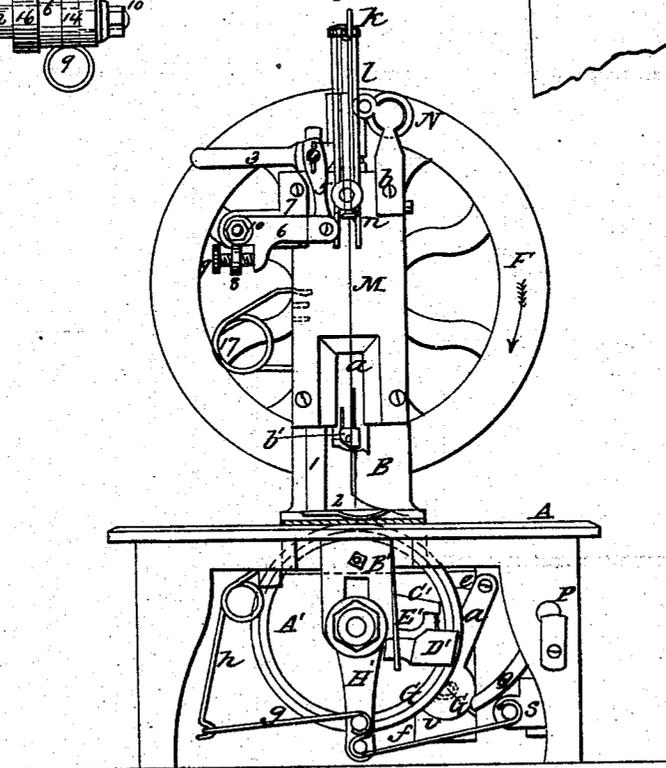


Fig. 3.



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UNITED STATES PATENT OFFICE.

LOUIS PLANER, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 48,204, dated June 13, 1865.

To all whom it may concern:

Be it known that I, LOUIS PLANER, of the city, county, and State of New York, have invented a new and useful Improvement in Sewing-Machines, which I call an "Adjustable Lifting Presser-Foot;" and I do hereby declare the following to be a full, clear, exact and description thereof, reference being had to the accompanying drawings, figures, and letters thereon, making part of this specification.

Of the said drawings, Figure 1 represents a top view of my improved sewing-machine with the front shuttle-plate removed. Fig. 2 is a side elevation. Fig. 3 is an end view. Fig. 4, 5, and 6 show parts (full size) detached from the machine.

Similar letters of reference indicate like parts in all the drawings.

My invention consists in a device, which may be readily attached to any ordinary sewing-machine, for lifting the presser-foot during the time the needle is in the material being sewed, which greatly facilitates the manipulations of the material in sewing curved seams, figures, and pattern-work, and also tends to prevent puckering the cloth being sewed.

To enable others skilled in the art to make and use my invention, I will describe the construction and operation thereof, and also my sewing-machine.

A represents the bed or table of the sewing-machine, having secured thereto a goose-neck or arm, B, in which are the bearings V V and W W for the shafts C and D, which shafts are the prime movers in the machine. The shaft C has a balance-wheel, F, and a serrated pulley, I, for driving the machine, and has a crank-wheel, J. The shaft D has a crank-wheel, L, upon one end, and also a crank-wheel, K, upon the other end. These crank-wheels K and J are coupled together by a bolt, p, to which is connected the rod H, which drives the shuttle-carrier and feed-wheel.

To the front of the arm B is attached a face-plate, M, by screws, which plate is provided with grooves for the needle-stock *a'* and the presser-foot bar 1.

To the needle-bar *a'* is secured a heart-shaped grooved cam, X, in which groove is inserted the crank-pin on the wheel L, and as the crank-wheel is rotated a reciprocating differential motion is imparted to the needle-stock.

To the bed of the machine are cast lugs V V,

which form the journals for the shaft G. This shaft has secured at its right end an arm, X', to which is pivoted the rod H, as shown in Fig. 2, while the other end has an arm, *d*, secured thereto, provided with a pin, which connects with the shuttle-carrier Z by means of a rod, *e*, as shown in Fig. 3.

The rocker-shaft P for effecting the feed is plainly shown in Fig. 2, and has its journals at *a a*, and is provided at its right end with an arm, Q, which projects under and rests upon a cam, T, secured to the shaft G, while the other end has an arm, R, which extends downward vertically, and to which is fitted a sliding clamp, S, for regulating the extent of motion for feeding the material.

The feed-wheel A' is provided with a concentric ring, G', projecting outward, which is turned perfectly true with its axis, and the wheel is supported in the machine by a stud, F', upon which it rotates, clamped to the hanger B', as plainly shown in Fig. 3. The lever H' has an arm, C', and has its journal upon the hub of the wheel A', between the disk and the inside of the hanger B', being fitted to work freely.

To the ring of the wheel G' is fitted a dog, D', which is coupled to the short lever C' by a slotted link, E', and the lever H' is connected to the clamp S on the arm of the rock-shaft P by a wire hook, *f*. As the shaft G is rocked it communicates a rocking motion to the shaft P, which operates the feed by means of the hook *f*, lever H' C', link E', and dog D'. The feed-lever is reacted by means of a spring, *h*, and hooked rod *g*. The wheel has a friction-spring resting against its side, which is held in place by the screw *o* in the hanger B'. The shuttle-plate 1' is planed out, as seen in Fig. 2, and is fitted with a hanger-slide, Z, to which is fitted the shuttle-carrier Y. The shuttle is driven in the ordinary manner by means of a rocking shaft and forks, which grasp the nose and heel, with the proper play for the passage of the needle-thread around the shuttle.

The presser-foot 2 is attached to the rod 1 at its lower end, and the upper has a lifter, 3, jointed to a pin, 4, for raising and lowering the foot 2, which holds the work to the periphery of the feed-wheel by means of a coil-spring, 17, one end of which is inserted in the face-plate M, as shown in the dotted lines, Fig. 3, while a hook on the other end of the spring is in-

serted in a hole in the presser-slide 1, Fig. 2, at 17.

My improved device for adjusting and lifting the presser-foot is plainly shown in Fig. 3 on the machine, and in the full-sized drawings, Figs. 4 and 5, Fig. 4 being a side elevation and Fig. 5 an end view, the lever 13, through which a positive lifting motion is given to the presser-foot after each successive feed-motion of the cam-surface on crank-wheel L, being shown in both figures as raised up and broken off. The part 7 has a hole for the screw to hold it to the face-plate M, and has two bearings, 15 and 16, for the lever-shaft 12. The piece 6 has a bearing in the ear next to 16 of the same size, while the other ear has a smaller bearing, as shown in the dotted lines, Fig. 5. The shaft 12 is kept in place by the nut and washer 10. The shaft 12 turns freely in the ears 15 and 16 and in the part 6. The piece 14 has a square hole, which fits a corresponding square on the shaft 12, and is provided with an adjusting-screw, 9, which passes through 8, and the end rests against 6, as shown in Fig. 4. To the end of 6, at 11, is a small pin, to which is connected one end of the link 5, while its other end is secured to a pin, 4, projecting from the upper end of the presser-rod 1. The end of the lever 13 rests upon the periphery of the crank-wheel L, which has a cam-surface for giving the lever motion.

Operation: The thread is taken from the spool and passed through the eyes in the tension-piece N, which turns in the upright post *b*, which holds it to the machine, thence through an eye, *n*, in the lower part of the bridle *l*, thence through an eye in the wire lever *k*, thence through the eye *n* to the guide in the needle-clamp *b'*, and through the eye of the needle. The shuttle is threaded up in the ordinary way. Cloth or other material is inserted under the presser-foot 2 and the foot let down, as shown in the end view, Fig. 3, the cloth being represented in blue. Motion being given by turning the wheel in the direction of the arrow causes the needle to descend and rise a short distance to form the loop for the shuttle. The bridle *i*, attached to the needle-bar *a* by means of a clamp-washer and screw *j*, draws down the wire lever through which the thread

is passed, and slacks up a sufficient quantity of needle-thread for the shuttle to pass freely through. The needle then rises, and the coil-spring *m* causes the wire-lever to pull up the thread in advance of the needle-stock to the limit allowed by the fixed bridle *l*, which is clamped to the face-plate. These bridles are mounted with leather or other sound-deadening material to prevent noise during the operation of the machine. During the last part of the ascent of the needle-bar the material is fed along by means of the cam T, rocking the lever P and forcing the wheel forward the required distance for the stitch. The length of stitch is graduated by moving the clamp S and screw *c* up and down the arm R, Fig. 2. As the needle descends for the next stitch the wire lever *k* is held up by the spring *m*, and the needle slides upon the thread until the bridle *i* draws down the rod *k*, and the slack thread is thereby kept entirely back of the needle, which prevents any splitting of the thread by the needle. The end of the lever 13 rests upon the cam-surface on the periphery of the crank-wheel L, and at each revolution of the crank-wheel the screw and screw-piece 8 will vibrate a certain distance, and the end of the screw will cause the arm 6 to lift the presser-foot by means of the link 5 a greater or less distance, as the screw 9 is turned in or out.

With the use of my improved adjustable lifting-foot short curved and circular seams can be rapidly sewed and more perfect work produced. Square corners can also readily be turned without slacking the operation of the machine, and where the stitches are long it tends in a great degree to prevent puckering, which is incident to sewing-machines.

I claim—

The combination of the shaft 12 with its arm 13, journal-piece 7, arms 6 and 14, screw 9, and link 5, arranged and operating together to lift and adjust the presser-foot of a sewing-machine, substantially as described, and for the purposes set forth.

LOUIS PLANER.

Witnesses:

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