

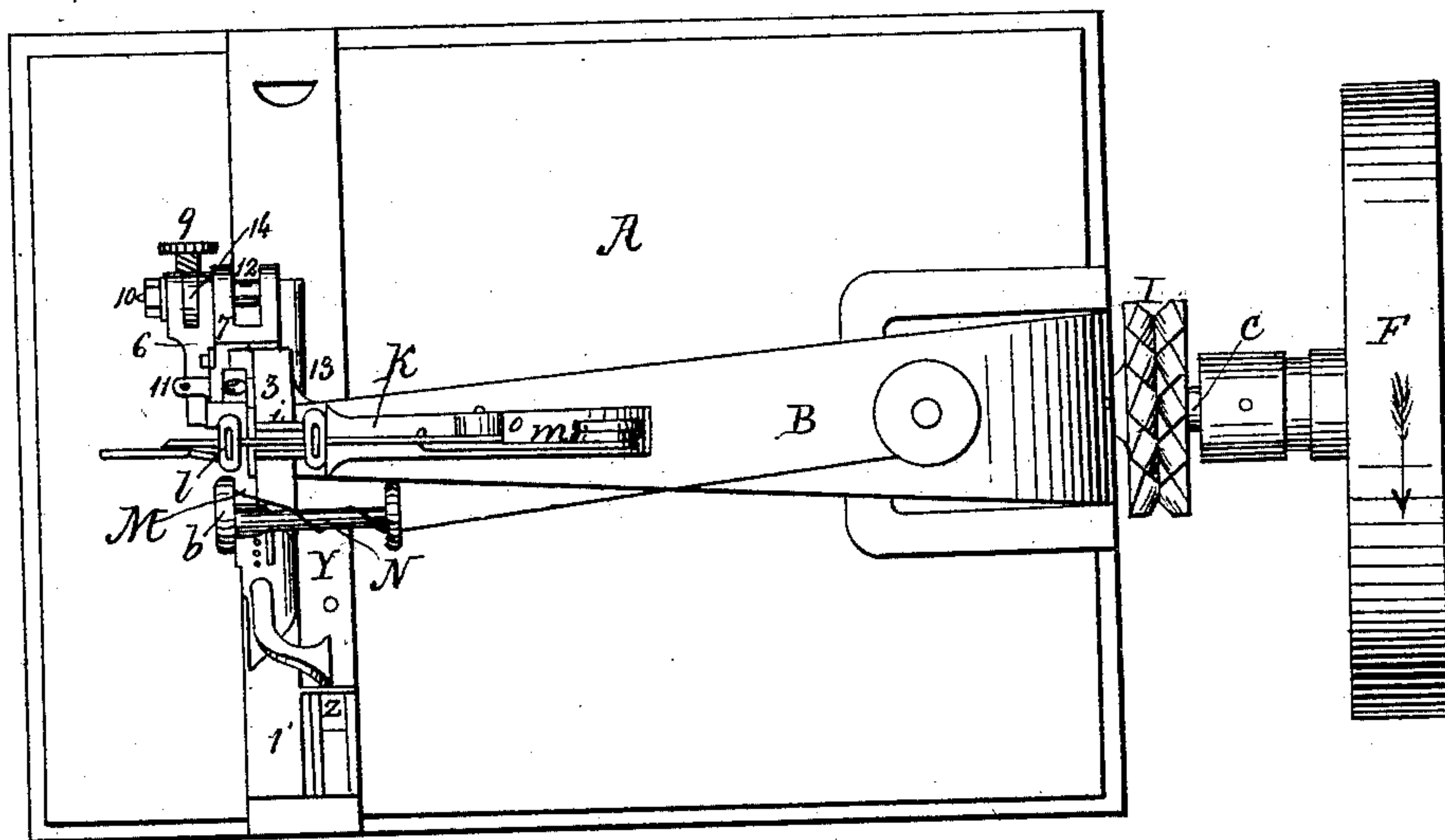
L. PLANER.
Sewing Machine.

3 Sheets—Sheet 1.

No. 50,157.

Patented Sept. 26, 1865.

Fig. 1.



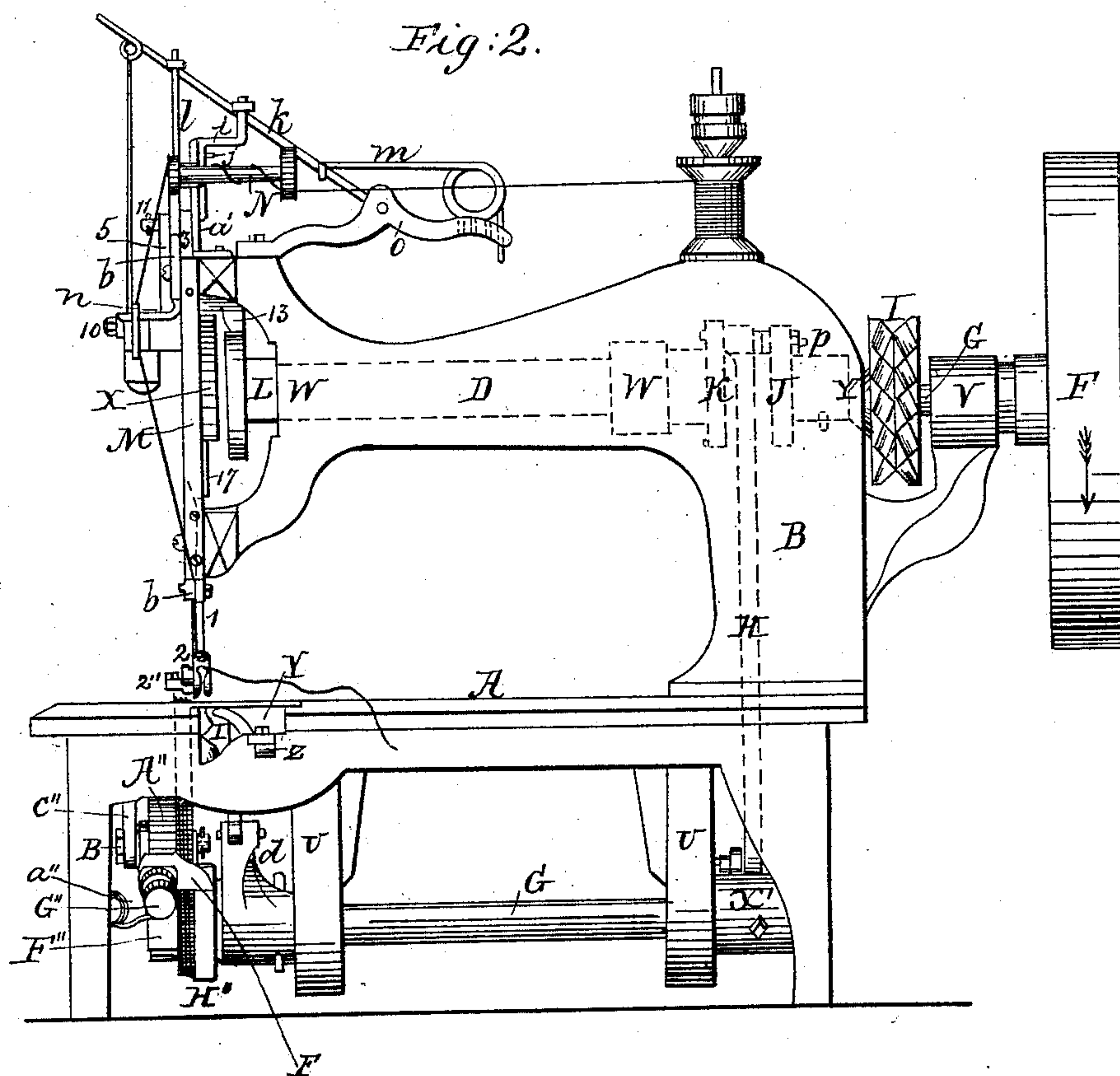
Witnesses
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Inventor.
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Fig: 4.

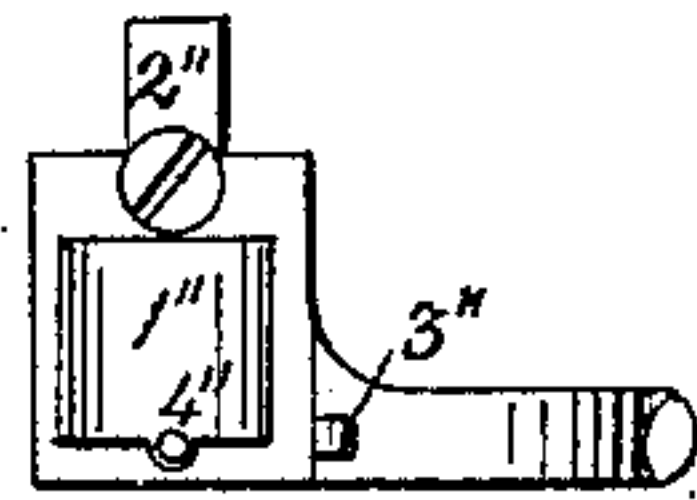
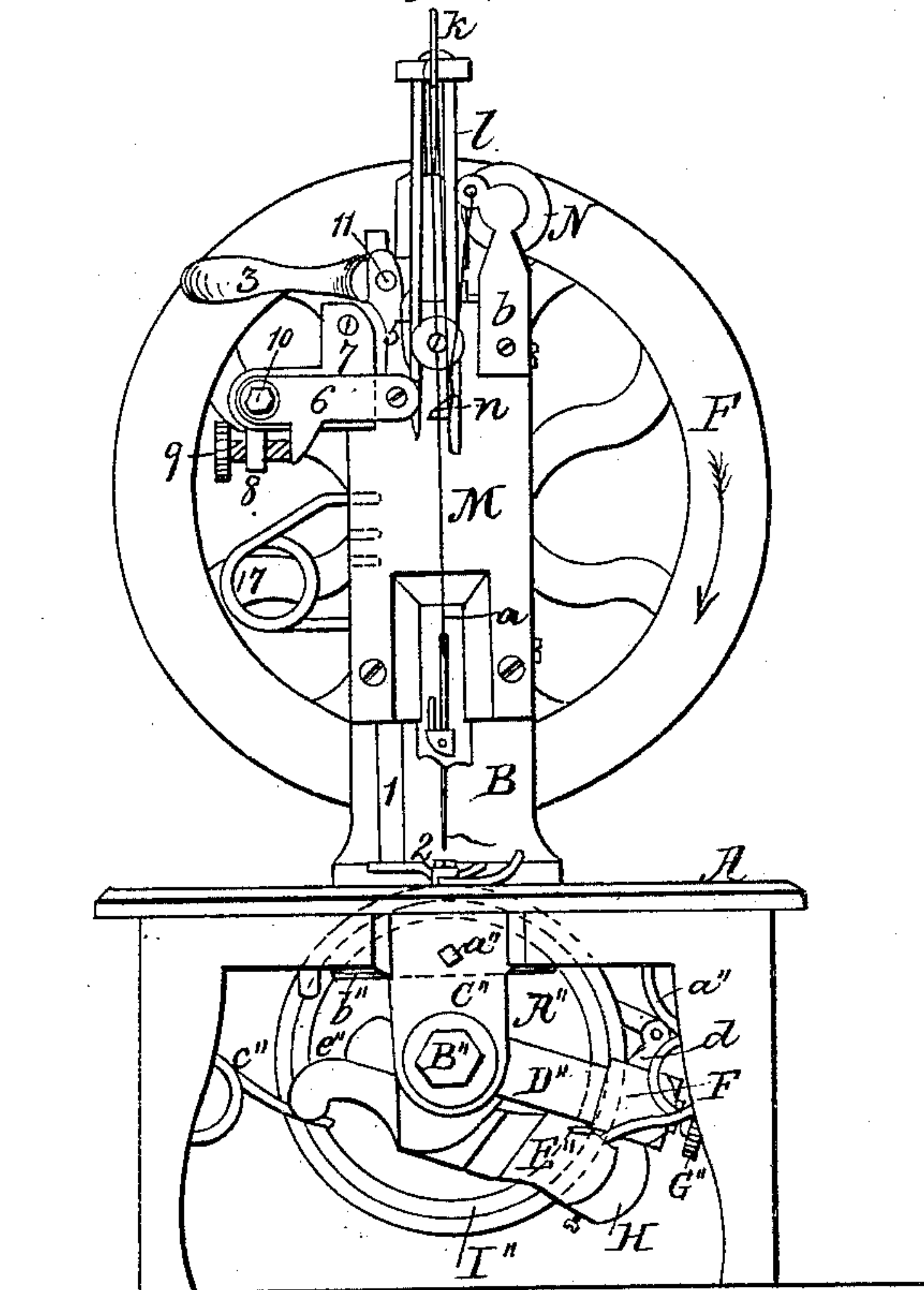


Fig: 3.



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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. 50,157, dated September 26, 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; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, figures, and letters of reference thereon, making part of this specification.

Of the said drawings, Figure 1 shows a top view of my sewing-machine. Fig. 2 shows a side elevation of the same. Fig. 3 is an end view, and Fig. 4 shows the braider detached from the machine.

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

My invention consists in combining with a lifting presser-foot a braiding apparatus, whereby the ornamenting of material by means of braid, cord, &c., in curves or figures is greatly facilitated.

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 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 a crank-wheel, K, upon the other end. These wheels J and K 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 this 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, which is shown in Fig. 3.

Outside of the arm *d*, on the shaft G, is a cam, H'', for working the feed-wheel. The feed-wheel A'' is provided with a concentric ring, I'', projecting outward, which is turned perfectly true with its axis, and the wheel is supported in the machine by a stud, B'', (upon which it rotates,) clamped to the hanger C'' by a nut, as plainly shown. The lever D'' is drilled to fit a larger portion of the stud B'' between the wheel and the hanger C'', and is provided with an arm, F'', which has a square socket fitted to slide freely on the lever D'' by means of a screw, G''.

To the concentric ring I'' of the feed-wheel is fitted a dog, E'', which has a groove to fit the ring I''.

The shuttle-race 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 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 fastened to the rod 1 at its lower end, and the upper has a lifter, 3, jointed to a pin, 11, 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, while a hook on the other end of the spring is inserted in a hole in the presser-slide 1.

The mechanism for lifting and adjusting the presser-foot is plainly shown in Figs. 1 and 3 on the machine. The part 7 has a hole to screw it to the face-plate M, and has two bearings at 12 for the lever-shaft 13. The shaft is in the form of an elbow, and passes through the part 12 and that of 6 next to it, and turns freely, the holes all being of the same size, while that on the side next to the nut 10 is smaller. That portion of the shaft 13 between the two arms of 6 is squared to receive an arm, 14, which is provided with an adjusting-screw, 9, passing through the ear 8, and the end of the screw rests on the part 6.

To the end of 6, at 4, is a pin, to which is connected one end of the link 5, while the other end is secured to a pin, 11, projecting from the

upper part of the presser-rod 1. The end of the elbow-lever 13 rests upon the periphery of the wheel L, which has a proper cam-surface for giving the lever motion.

The operation of the machine will be as follows: The thread is taken from the spool and passed through the eyes in the tension-piece N, which turns in the upright post *b*, secured 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 thread is then coiled around the piece N sufficiently for the tension. The shuttle is threaded up in the ordinary way, cloth or other material is placed under the presser-foot, and the foot 2 let down. Motion being given by turning the wheel F in the direction of the arrow causes the needle to descend and then rise a short distance, to form a loop of needle-thread for the shuttle to pass through. 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*, supported by the bracket *o*, 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 material to deaden the sound 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 H'', operating on the arm F'' of the lever D'', which pinches upon the grooved dog E'' at the point *e''*, and by means of the concentric ring I'' forces the wheel forward the distance acted upon the lever-arm F'' by the cam H''. The feed-lever and dog are reacted by means of two coil-springs, *c''* and *d''*. The feed-wheel is prevented from any retrograde movement by means of a friction block or spring, *b''*, which rests against the side of the wheel

inside the hanger, and is regulated by a pointed screw, *a''*, Fig. 3. The length of stitch is graduated by the screw G''. By turning the screw up the arm E'' is carried forward on the lever D'', and the stitches are made longer by reason of a greater cam-surface, and by reversing the operation the stitches are made shorter. 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 kept 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 of the periphery of the wheel L, and at each revolution of the wheel the screw 9 and the screw-piece 8 will move 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.

The braider is shown in Fig. 4 detached from the machine, and the part 1'' is concaved out to fit the shape of the presser-foot 2, and is held in place by a screw and clamp, 2''. The braid or cord is inserted through the hole 3'', and the needle passes through the braider at the hole 4''. With a braider working in conjunction with a lifting foot, the operation of sewing braid or cord in curves or figures is greatly facilitated, as the material can be readily turned upon the needle as a pivot when the presser-foot is lifted, which is during the time the needle is in the material being sewed.

I claim—

The employment and use of a braider in combination with a lifting presser-foot, whereby the sewing of braid, cord, &c., for ornamental work in curves, figures, &c., is greatly facilitated, substantially as described and specified.

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