3 Sheets—Sheet 1.

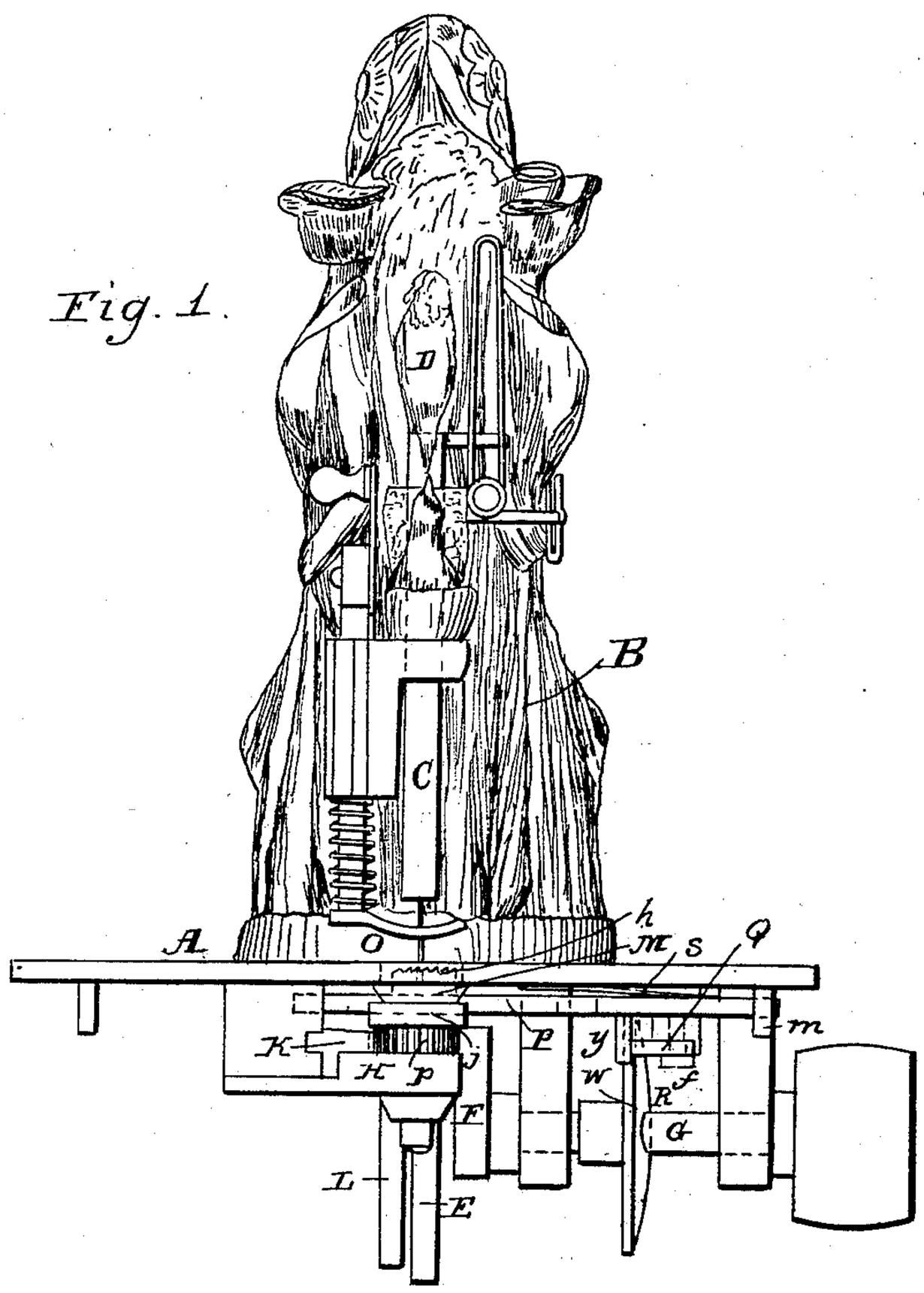
G. HENSEL.

Sewing Machine.

No. 24,737.

Patented July 12, 1859.

Fig. 1.



Witnesses.
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James Edgar

Inventor.
Georg Hensel

3 Sheets—Sheet 2.

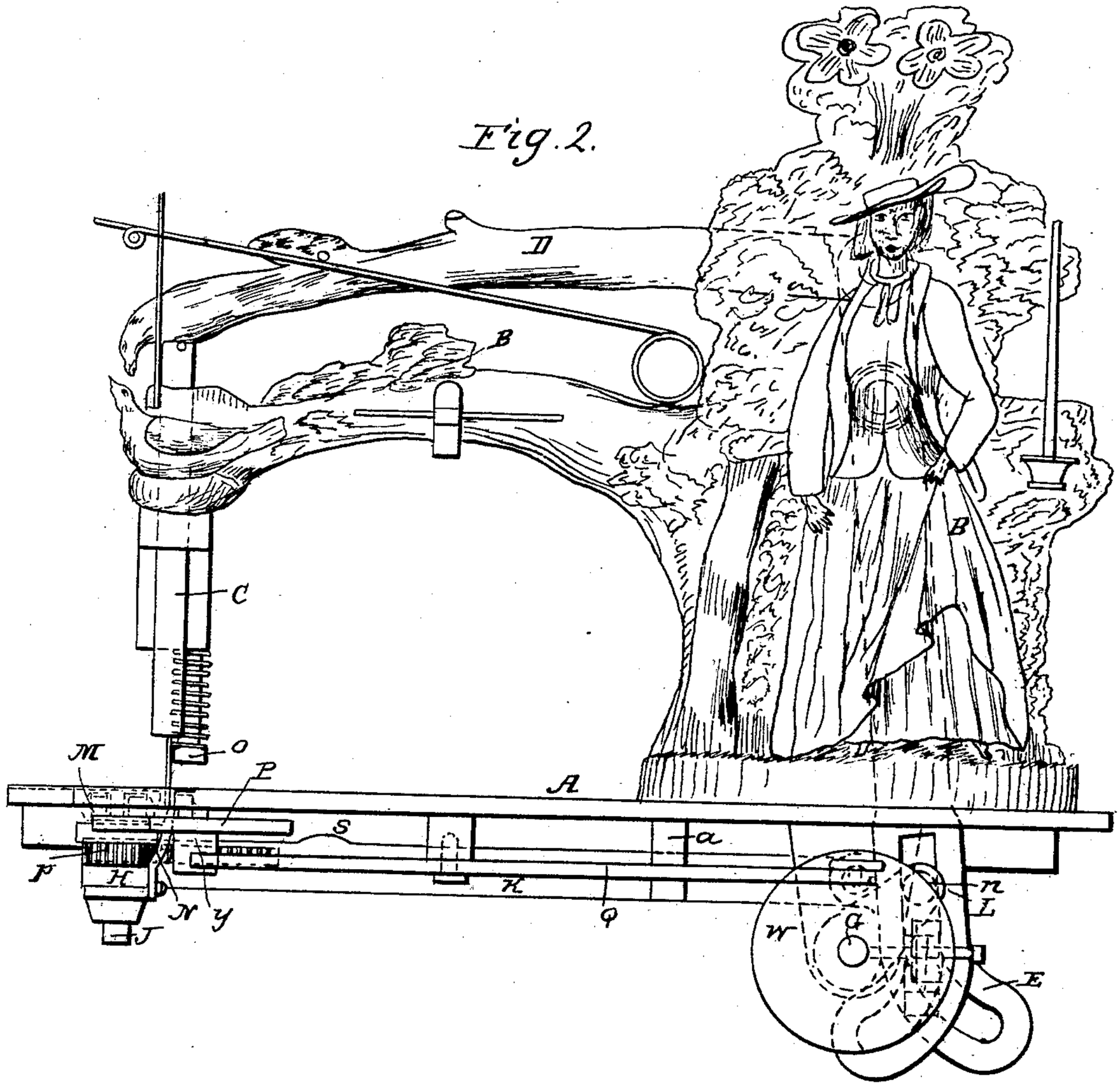
G. HENSEL.

Sewing Machine.

No. 24,737.

Patented July 12, 1859.

Fig. 2.



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3 Sheets—Sheet 3.

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Sewing Machine.

No. 24,737.

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Fig. 5.

Fig. 4.

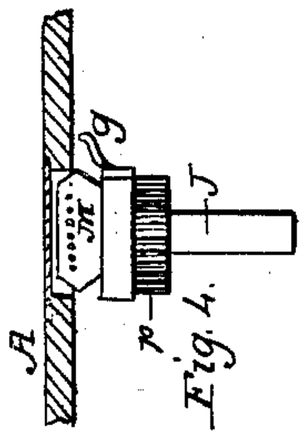


Fig. 6.

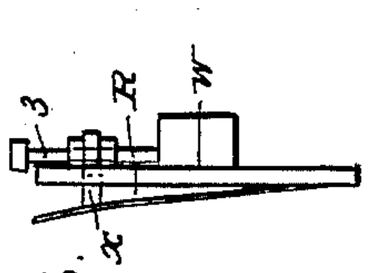


Fig. 7.

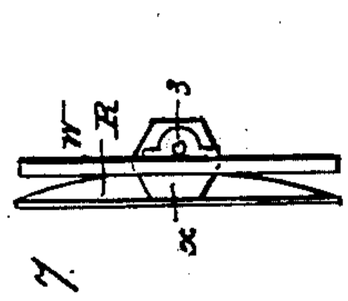
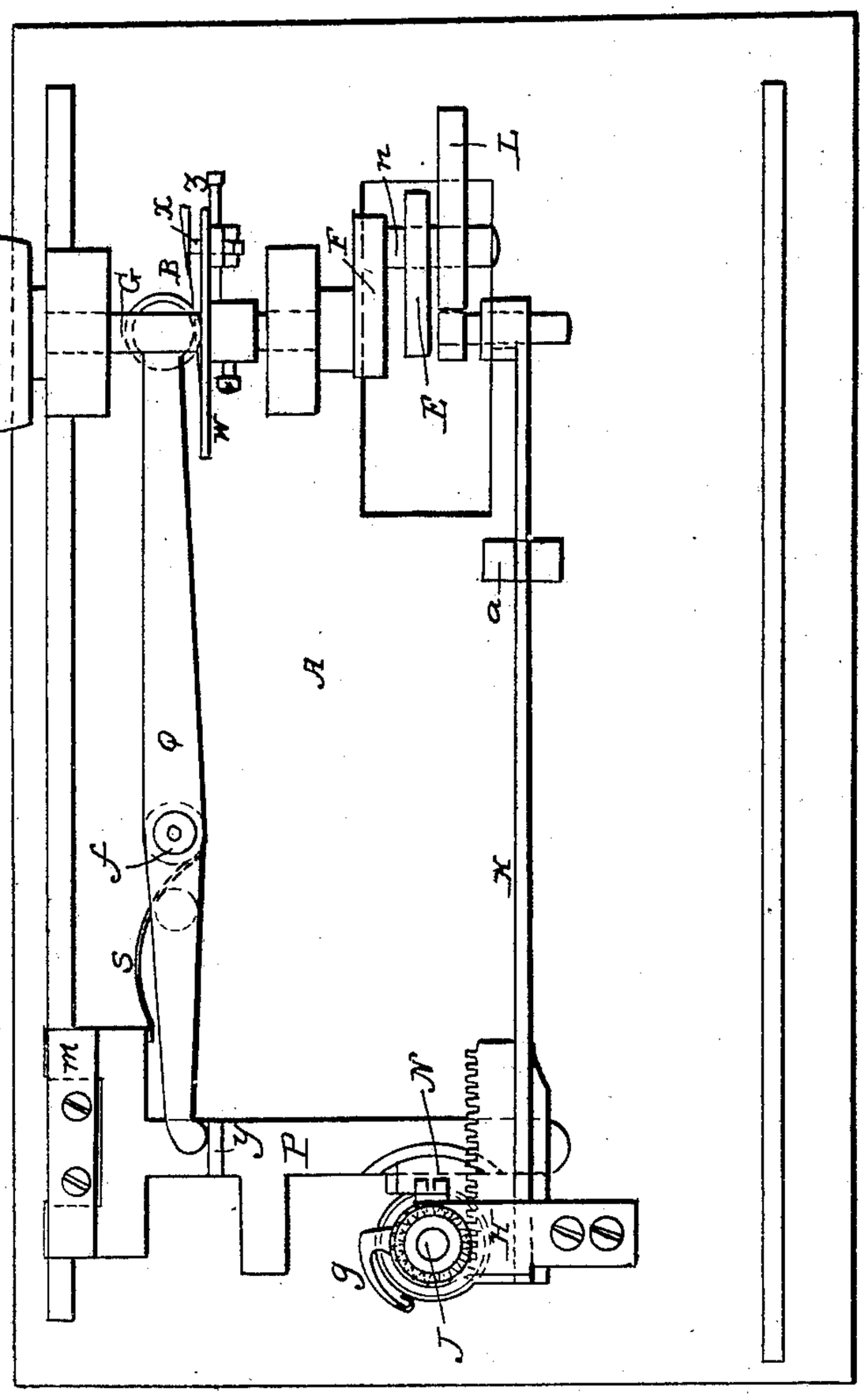


Fig. 3.



Witnesses:
Danl C Reading
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Inventor:
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UNITED STATES PATENT OFFICE.

GEORGE HENSEL, OF NEW YORK, N. Y.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **24,737**, dated July 12, 1859.

To all whom it may concern:

Be it known that I, GEORGE HENSEL, of New York, in the county and State of New York, have invented a new and useful Sewing-Machine; and I hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure I represents a front view of a machine constructed according to my invention. Fig. II is a side view of the same, and Fig. III is an inverted plan of the same.

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

This invention consists in an improved contrivance of working and regulating the feed.

A is the bed-plate or table upon which the cloth or material rests during the operation.

B is an ornamented stand erected on the bed-plate A to contain the needle-bar C and the lever D E, by which the needle-bar C is operated, said lever deriving the necessary motion from the crank-pin *n* of the crank F, which is secured to the driving-shaft G, and which enters a slot in the arm E of said lever.

H is a bracket screwed to the under side of the bed-plate A and carrying in its end the pin J, capable of revolving. This pin J is provided with a pinion, *p*, and has on its upper circumference the looper *g*, Fig. IV. This looper consists of a hook attached by means of a short arm to the circumference of the upper end of the pin J. The pinion *p*, which is firmly attached to the pin J, gears with a toothed rod, K, which latter is guided in the bracket H and in a projection, *a*, fast to the under side of the bed-plate A, and is connected to an arm, L, from which latter said rod K receives a backward and forward motion by means of the crank-pin *n*, which enters a slot in said arm L. By this arrangement an oscillating motion is imparted to the pin J, causing the same to make nearly a full revolution back and forth and giving a corresponding motion to the looper *g*, whose point almost touches the face of the needle just above the upper end of the needle-guide and close to the under side of the bed-plate.

N is the needle-guide, attached to the bracket H, and provided with an open groove just wide enough to receive the needle, and in which the needle works and is guided.

M is the thread-case, laid loosely on the top of the pin J, and prevented from falling off the same by the bed-plate A. This thread-case, Figs. IV and V, contains a bobbin, *w*, on which the locking-thread is wound, and said locking-thread is laced through a number of holes in said case in the same manner as it generally is done in shuttles to produce a sufficient tension upon it by friction. This thread-case is laid loosely on the top of the pin J, as above described, but is prevented from turning, while said pin J oscillates back and forth by its own thread passing upward through the hole made in the plate A for the passage of the needle.

The operation of the thread-case and looper, in combination with the needle, is as follows: The needle having carried its thread through the cloth or other material to be sewed, in the usual manner, and then been slightly retracted to throw the thread slack and form a small loop, the looper *g* advances in the direction of the arrow shown near it in Fig. III, takes hold of the needle-thread, and extends the slack in the form of a loop and passes the same around the thread-case M, when the loop is at liberty to slip off the hook on the looper, when the continued upward movement of the needle draws it off, leaving the thread from the thread-case encircled by it, and causing it when drawn tight to be locked by the latter thread.

O is the pressure-pad, which confines the cloth to the surface of the table and to the toothed surface of the feeding-dog *h*. This feeding-dog *h* is attached to and forms part of a bar, P, fitted to slide longitudinally in a guide, *m'*, under the bed-plate. The inner end of the bar P is also capable of a slight rising and falling motion to make the dog press the cloth against the pressure-pad O, that it may be caused to take a firm hold before moving in the direction to feed it. The longitudinal movement of the bar P, by which the feeding of the cloth is effected, is produced by the action of the lever Q against a projection, *y*, attached rigidly to said bar P. The lever Q turns upon a center, *f*, and is made to press with one end against the projection *y* on the bar P, and with the other end against the surface of a circular disk, W, which is firmly attached upon the shaft G. The movement upward of the bar P preparatory to the feeding movement is produced by a projection, *s*, on the

top edge of the bar or rod K, which passes in contact with the bottom of the bar P, the descent of the bar P, to carry the feed-dog out of contact with the cloth before its retreat, is produced by a spring, *s*, and the retreating motion of said bar is produced by the spring 5, Fig. III.

To provide for the variation in the feed to vary the length of the stitch a flexible plate, R, is attached to the disk W, one end of which is firmly fastened to said disk W, while the opposite side is acted upon by a small cam, *x*, fast to the pin 3, Figs. VI and VII, which latter passes in its revolution through an opening in the bed-plate A, so as to be regulated from the upper surface of the machine. According to the surface of the cam *x*, which acts against the flexible plate R, more or less motion will be given to the lever Q, and consequently causes more or less feed to be given to the bar P.

The manner of regulating the needle-thread tension, and for drawing up the slack of the loops to tighten the stitches, is made in the usual manner.

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction of the disk W with an elastic plate, R, attached and operated by means of a cam, *x*, in the manner and for the purpose substantially as set forth.

GEORGE HENSEL.

Witnesses:
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