

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN FEED-WHEELS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 48,206, 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 Feed-Wheels for 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 thereon, making part of this specification.

Of the said drawings, Figure 1 shows a back view, a portion of the table being removed to show the working parts. Fig. 2 is an end view. Fig. 3 is a full-size top view of the feed-dog removed from the wheel. Figs. 4 and 5 show parts of the feed-lever in detail.

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

My invention consists in a novel mode of combining with the feed-wheel of a sewing-machine a mechanism for causing the wheel to progress regularly, and for readily adjusting the stitches, as will be fully set forth.

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

A represents the bed of a sewing-machine, to which is secured a goose-neck, B, for supporting the operative parts above the table. In this goose-neck, in proper journals, V V, is a shaft, C, to which is secured a serrated pulley, I, for driving the machine, and a disk-wheel, J, and also a shaft, D, which has journals at W W, one end being provided with a disk-wheel, L, which is connected to the wheel J by means of a pin, P, to which is connected the rod H for driving the rock-shaft below the table, while the other end of the shaft D is provided with a crank-wheel, K.

To the front of the goose-neck is secured the face-plate E by screws. The needle-bar and presser-rod slide in proper grooves in this plate E.

To the needle-bar is attached a heart-shaped groove-plate, C', in which is inserted a roller, b', on the crank in the wheel K.

To the upper part of the goose-neck is secured a small bracket, F, which supports the apparatus for controlling the needle-thread.

To the table are cast lugs U U, which support the shaft G. On this shaft, at one end, is an arm, X', which is connected to the rod H at Z', while the other end has an arm, d', which, by means of a rod, e', pivoted by a pin, f',

drives the shuttle-carrier Z. On this shaft G, outside of the arm d', is a cam, T, which operates the feed-lever a by means of a short arm, b, which is fitted to slide on the lever a, as shown in Figs. 2, 4, and 5.

The feed-wheel A' is bored for the stud F', and has a small finished hub upon which the lever is inserted. The wheel has a concentric ring or flange, G', made perfectly true with the axis of the wheel, and has its periphery roughened to grasp and advance the material to be sewed. The wheel is supported by the stud F and nut M in the hanger B', as plainly shown in Figs. 1 and 2. Inside of the hanger I insert a friction-block, f, which has a spring, and which is made to press against the side of the wheel by means of a screw, g, passed through B', which screw is pointed and fits a small hole in the spring-block f and keeps it in place. The feed-dog c' has a groove, L', Fig. 5, cut to fit the ring G' on the wheel, and is cut away at h' to receive an ear, f'', on the feed-lever, which keeps the dog in place.

The feed-lever a has its fulcrum on the hub of the feed-wheel, and is drilled and tapped with a screw-thread, as shown in Fig. 4. To the end of the lever, which is square, I fit a small arm, b, having a square socket, so that it will slide freely on the lever. In this socket I insert a screw, e, having a shoulder, so that it shall have a bearing and turn freely within the arm b, and outside of the arm I insert a clamp-nut, c, the screw e having a thread therefor, and outside of this clamp-nut c I put a thumb and finger nut, d, which is made fast on the screw e, and as this nut d is turned up or back on the lever the arm b is moved, and the stitch is regulated by a greater or less vibration of the feed-lever a, operated by the cam T. As the lever a is vibrated the short end bites upon the feed-dog at the point S' and gives a powerful leverage and forces the wheel forward in the direction of the arrow, and the lever drops by its gravity and the aid of the spring i as soon as released by the cam. The dog c' is reacted by the spring i, which rests against a pin, h, while the dog rests against the lever a, which acts as a fulcrum.

Operation: The machine is threaded up in the ordinary way for the needle and shuttle, and the material to be sewed is placed upon the feed-wheel and the presser-foot h' on the bar O let down by the lever N and held by the

coil-spring *r*, and motion being given to the machine, the needle will have a reciprocating motion by means of the crank-wheel *K* and groove-cam *C'*, secured to the needle-bar *a'*. As the shaft revolves the rod *H* will give a rocking motion by means of the arm *X'* to the shaft *G*, which drives the shuttle by the arm *d'* and the feed-lever by the cam *T*, which is cut out on the opposite side, the same as seen in Fig. 2. At each revolution of the shaft *C* the needle will penetrate the material and react to form a loop of thread, through which loop the shuttle will pass during the pause of the needle, and as the needle ascends the material is fed along during the time the needle is out of the material by the cam *T* raising the feed-le-

ver *a* by means of the arm *b*. The stitches are made longer by screwing up the nut *c*, which gives greater acting-surface from the cam *T* upon the arm *b*, and vice versa.

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

In combination with the feed-wheel of a sewing-machine, the dog *c'*, lever *a*, and arm *b*, provided with an adjusting mechanism for regulating the feed, substantially as described and specified.

LOUIS PLANER.

Witnesses:

C. A. DURGIN,
EDWARD OSBORN.