

JOHN SPEIRS.

Improvement in Sewing-Machines.

No. 127,114.

Patented May 21, 1872.

Fig. 1.

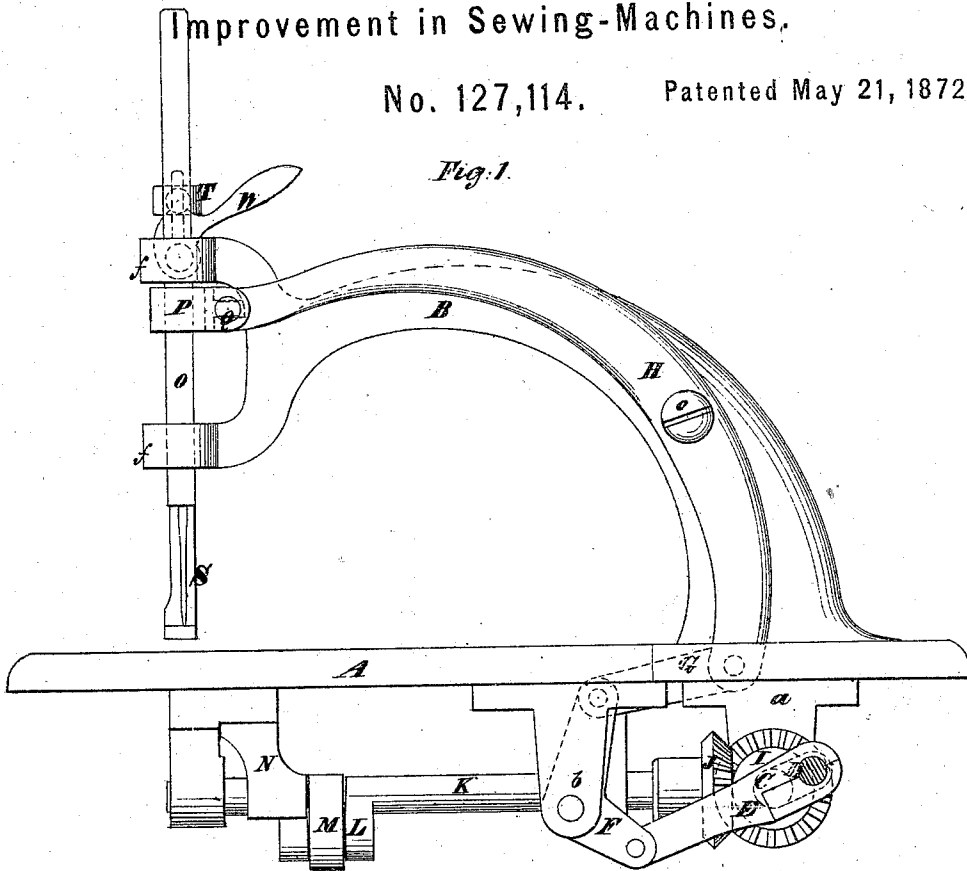
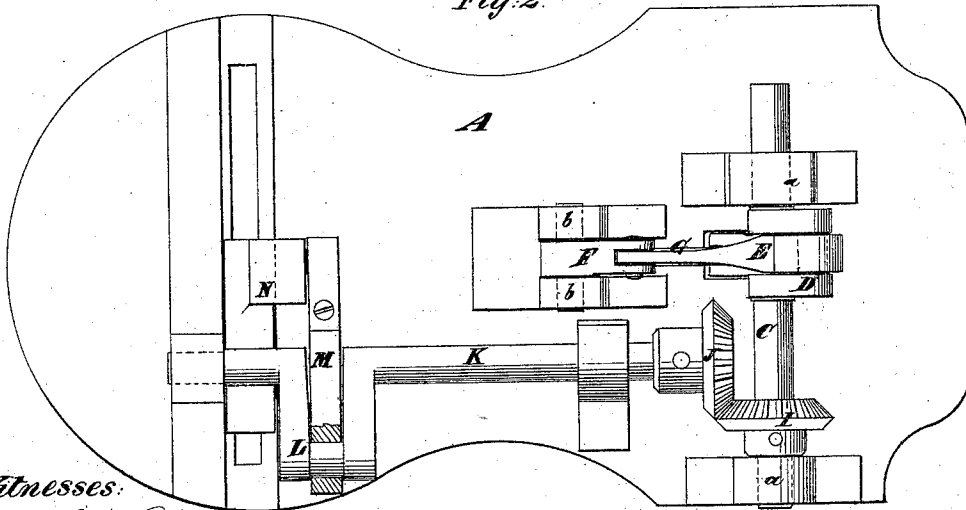


Fig. 2.



Witnesses:

Henry J. Brown
Fred Holmes

John Speirs

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Fig. 3.

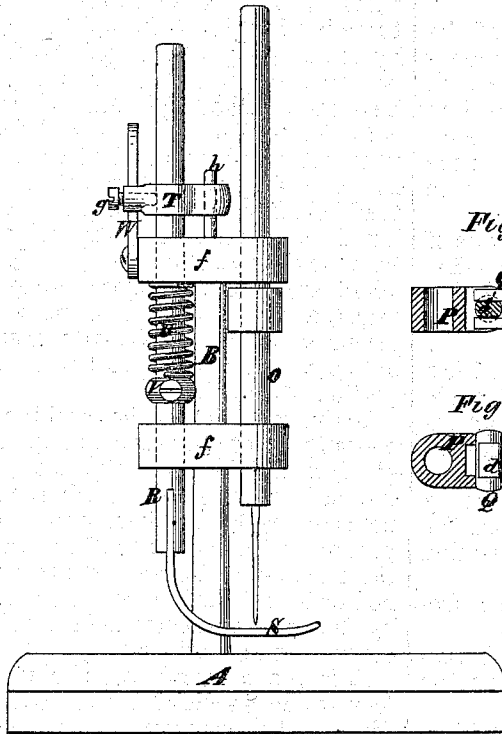
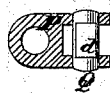


Fig. 4.



Fig. 5.



Witnesses:
Henry T. Brown
Geo. Harris

John Speirs

UNITED STATES PATENT OFFICE.

JOHN SPEIRS, OF NEW YORK, N. Y., ASSIGNOR TO THE MANHATTAN SEWING-MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 127,114, dated May 21, 1872; antedated May 6, 1872.

To all whom it may concern:

Be it known that I, JOHN SPEIRS, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing forming part of this specification.

This invention consists in a novel mode of connecting the needle-arm with the needle-bar, whereby the easy and straight operation of the latter by the former, without the intervention of a link, is provided for.

In the accompanying drawing, Figure 1 is a side view of a sewing-machine in part made according to my invention. Fig. 2 is an inverted plan of the same. Fig. 3 is a front-end view of the upper portion of the machine. Fig. 4 is a vertical section of the device by which the needle-arm is connected with the needle-bar, and Fig. 5 is a horizontal section thereof.

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

To enable others to make and use my invention, I will describe it with reference to the drawing.

A represents the bed-plate of the machine, B its frame, and C the operating or driving shaft. The said driving-shaft C is supported in suitable bearings *a a* projecting from the under side of the bed-plate A, and is driven in the ordinary manner. Formed on this shaft is a double crank, D, which is connected by a connecting-rod, E, with one end of a bell-crank, F, supported in suitable bearings *b b* on the under side of the bed-plate A. The other end of the said bell-crank is connected by a link or connecting-rod, G, with the lower end of the needle-arm H, which is pivoted by a pivot, *e*, to the frame B. The connecting-rod E, bell-crank F, link G, and the needle-arm H, are all arranged to operate in the same vertical line or plane, whereby all lateral play or strain is obviated. I is a miter-wheel, which is arranged on the driving-shaft C and gears with a miter-wheel, J, on the end of a shaft, K, that is supported in bearings on the under side of the bed-plate A, at right angles to the

shaft C. Near the far end of this shaft K there is a double crank, L, which is connected, by a connecting-rod, M, with the shuttle driver or carrier N, which works in a guide in the bed-plate. The needle-arm H is connected with the needle-bar O, which slides vertically in suitable bearings in the frame B by a clip, P. The body or stock of this clip has a vertical hole in it for the reception of the needle-bar O, and the jaws have each a horizontal hole for the reception of a pin, Q, the ends of which are round, but the middle portion *d* flattened, as shown in Figs. 4 and 5. In the adjacent end of the needle-arm there is a deep notch, *e*, of a width to embrace the flattened portion of the pin Q.

In the operation of the machine, as the needle-arm moves the needle-bar up and down the pin Q turns within the clip to adjust itself to the inclination of the notch *e*, and the said notch slides longitudinally over the flattened portion of the pin, as by the radial motion of the needle-arm its end is alternately moved nearer to and further from the needle-bar, and by this means an easy and almost frictionless connection is obtained.

R is the presser-bar, and S is the presser-foot, which is secured to the lower end thereof. The said bar slides vertically in suitable bearings in the forward part *f* of the frame B, and has on its upper portion a horizontal arm, T, that is secured to the said bar by a set-screw, *g*, and has formed, in the end next the needle-bar, a hole for the reception of a guide-pin, *h*, on which it slides, and which by its lateral position effectually serves to steady the presser-bar and hold it in place.

The presser-foot may be turned to one side by simply loosening the set-screw *g* to free the presser-bar and then turning it by hand.

The presser-foot may be adjusted to different thicknesses of material by simply shifting the arm T on the presser-bar R.

The tension is applied by a spiral spring, U, coiled round the presser-bar between its upper bearing and a collar, V, secured on it by a set-screw.

W is the lifter, which is of ordinary form, and is pivoted to the frame B, and works under the arm T to lift the presser-bar.

This improvement is more or less applicable to different kinds of sewing-machines.

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

The clip P, constructed as described, secured to the needle-bar O, and provided with a flattened pin, Q, for operation by the notched

end of the needle-arm H, all arranged substantially as and for the purpose herein described.

JOHN SPEIRS.

Witnesses:

HENRY T. BROWN,
FRED. HAYNES.