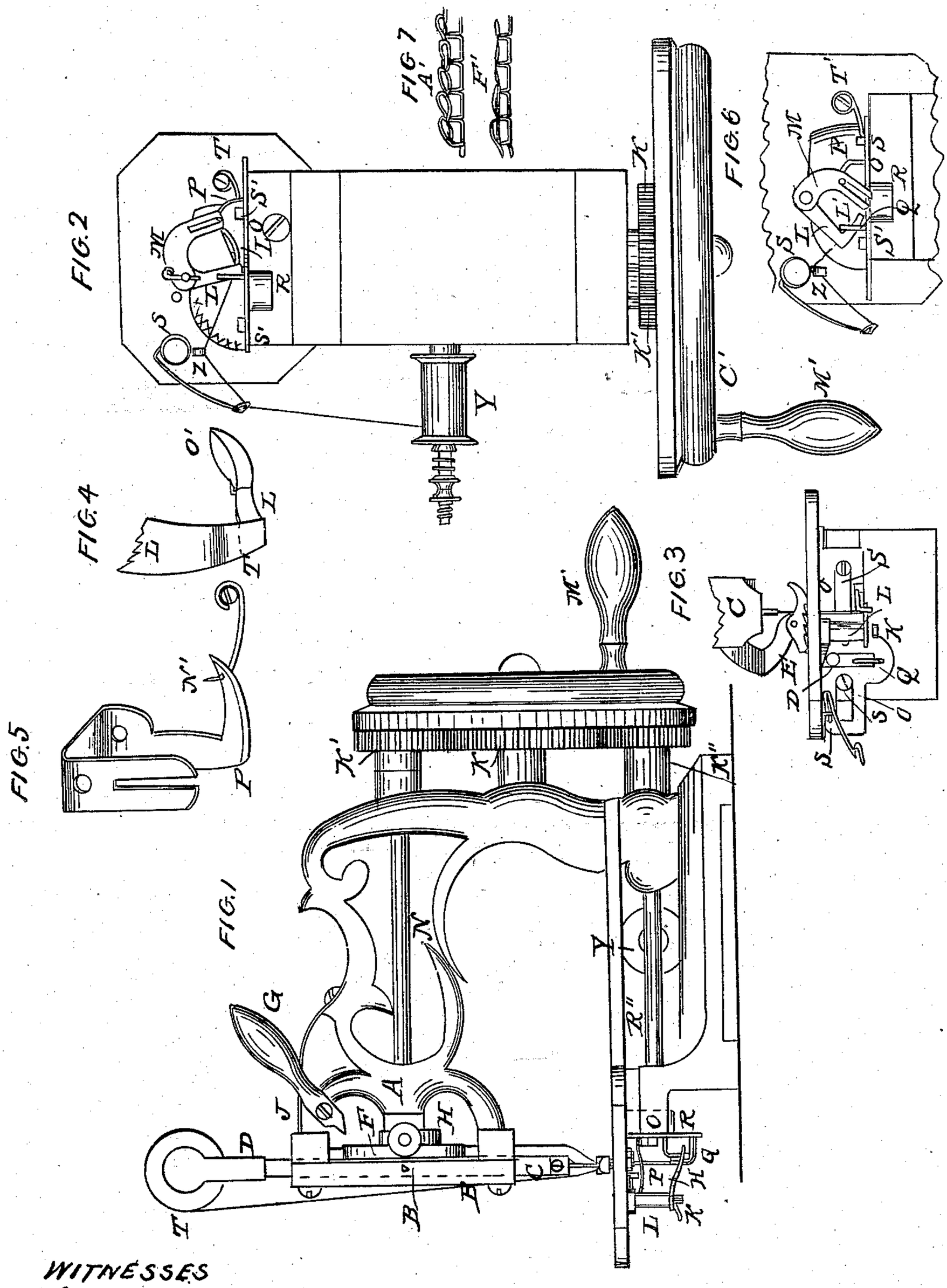
H. L. SHAW.

Sewing Machine.

No. 32,007. Patented April 9, 1861.



UNITED STATES PATENT OFFICE.

HENRY L. SHAW, OF MILAN, OHIO.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **32,007**, dated April 9, 1861.

To all whom it may concern:

Be it known that I, HENRY L. SHAW, of Medina, in the county of Erie and State of Ohio, have invented new and useful Improvements in Combined Sewing-Machines; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of the machine; Figs. 2 and 6, views of the under part; Fig. 3, a front view of the lower part; Figs. 4 and 5, views of the needles. Fig. 7 represents the form of the stitch.

In Fig. 1, A is the frame-work, which may be of any design; C, the needle-bar, which moves vertically in the pipe B, moving up and down by having on the inside a transverse slot, B′, as indicated by the dotted lines, in which a wrist of the cam-wheel, H, moves.

F is a ring, the lower part of which forms an arm, and is attached to the foot-piece E. The upper part, extending above the ring, has a notch in the outside, in which the spring J is inserted.

G is a lever with a pin on the inside. When the lever is elevated the pin, acting as a fulcrum, raises the spring J, and consequently F is raised, raising the foot-piece E above the bed-plate for the purpose of easily inserting the cloth.

The cam-wheel H is connected with the driving-wheel and pinion K′ by the shaft N, and when revolved by means of the revolution of the driving-wheel it causes the vertical motion of the needle-bar, and also, as H turns inside of the ring F, it causes the back-and-forth motion of the foot-piece.

The spool T is placed on a rod attached to the upright standard D, the rod terminating with a spring and screw to give tension to the thread.

L is the looper, placed on the pin K, and kept in place by a pivot.

P is a bent arm attached to the slide O, and moves in a slot of the arm M of the looper.

Q is also an arm, placed differently, to work in the slot of another looper.

I is the needle attached to the needle-bar.

Q is a wheel on the end of the shaft R′, which has a wrist that moves in a perpendicular slot of the slide O. The operation of this crank-wheel is more clearly shown in Fig. 3, which is a front view of the lower part, the dotted circle representing the wheel D′, its wrist moving in the slot of the slide O; S′ S′, screws that keep the slide in place, and upon which it slides with ease. The revolution of the wheel R gives to the slide a horizontal motion back and forth, which is conveyed to the looper by the arm P, attached to the slide that moves in a slot of the arm M of the looper. This wheel, like the cam-wheel, is made to revolve by means of the driving-wheel K and the pinion K″, to which it is connected by the shaft R′. The pinions revolve twice for one revolution of the driving-wheel.

Fig. 2 is a view of the under side of the machine, in which may be seen more distinctly the operation of the looper L. With this looper two threads are used.

Y is the spool that supplies the looper with thread, and is attached to the side of the lower part of the machine. On the end of the rod passing through the spool is a spring and screw to give tension to the thread. The thread, before it enters the looper, is passed through the stationary eye Z and over the end of the wire spring S to keep it in place.

The shade-lines indicate a depression in the bed-plate to facilitate the motion of the looper, as it is curved upward in a similar way.

The thread passes through the looper, as is indicated by the dotted lines in Fig. 4, which is an enlarged view. The thread passes through L, and for a short distance on the inside of L′, then through it and round in an indentation on the outside, and finally through the eye in the end.

When the needle is threaded, the cloth placed under the foot, and the lever lowered, everything is ready for operation, which may be described as follows: Turning the wheel C′ by the handle M′ causes the crank-wheel R to revolve, and as it has a wrist moving in the slot of the slide O, the slide is changed to the place shown in Fig. 6. The arm P, moving in a slot of the arm M, causes the looper at the same time to take the position shown in the same figure, the operation of the other machinery causing the needle to descend till the point nearly touches M. By still turning the wheel the needle ascends, leaving a loose thread on one side, into which the looper, as it returns to its former place, passes, forming a loop on the looper, as seen in Fig. 2. As the loop is pass-

ing off the looper the thread O′ in the looper in Fig. 4 loosens and the needle descends inside of this thread, forming a loop on the needle, onto which the loop of the looper passes, the needle descends again, casting off this loop, and so on.

Fig. 7 is an enlarged view of the stitch A′, representing it loosened to show more clearly the interlooping of the two threads, the red line representing the one in the looper. As may be seen, the thread in the looper passes inside of one loop, entirely round the next, back inside of the first, inside of the next, round the next, and so on. When drawn up tightly, as in F′, and as it always is in sewing, it makes a very firm and durable stitch.

With the looper represented in Fig. 5 only one thread is inside. This figure is an enlarged view. When used it is placed on the pin K and secured by a pivot, the arm Q working in a slot of its arm. The motion of this looper is similar to the other, the pin N′ preventing the loop from passing on too far, and by the movement of the looper it likewise makes a long loose loop, so that the needle will not fail to pass inside of it, thus forming the chain-stitch.

T′ is an arm secured to the bed-plate by a screw used to move in the groove P′ of the looper to aid in passing the loop off the looper.

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

The special arrangement of the slider O, operated as shown, with its pins P and Q, for the purpose of operating therewith either the looper shown in Fig. 4 or that shown in Fig. 5 to make a single or a double chain-stitch, in the manner substantially as described.

HENRY L. SHAW.

Witnesses:

J. BRAINERD,

S. H. MATHER.