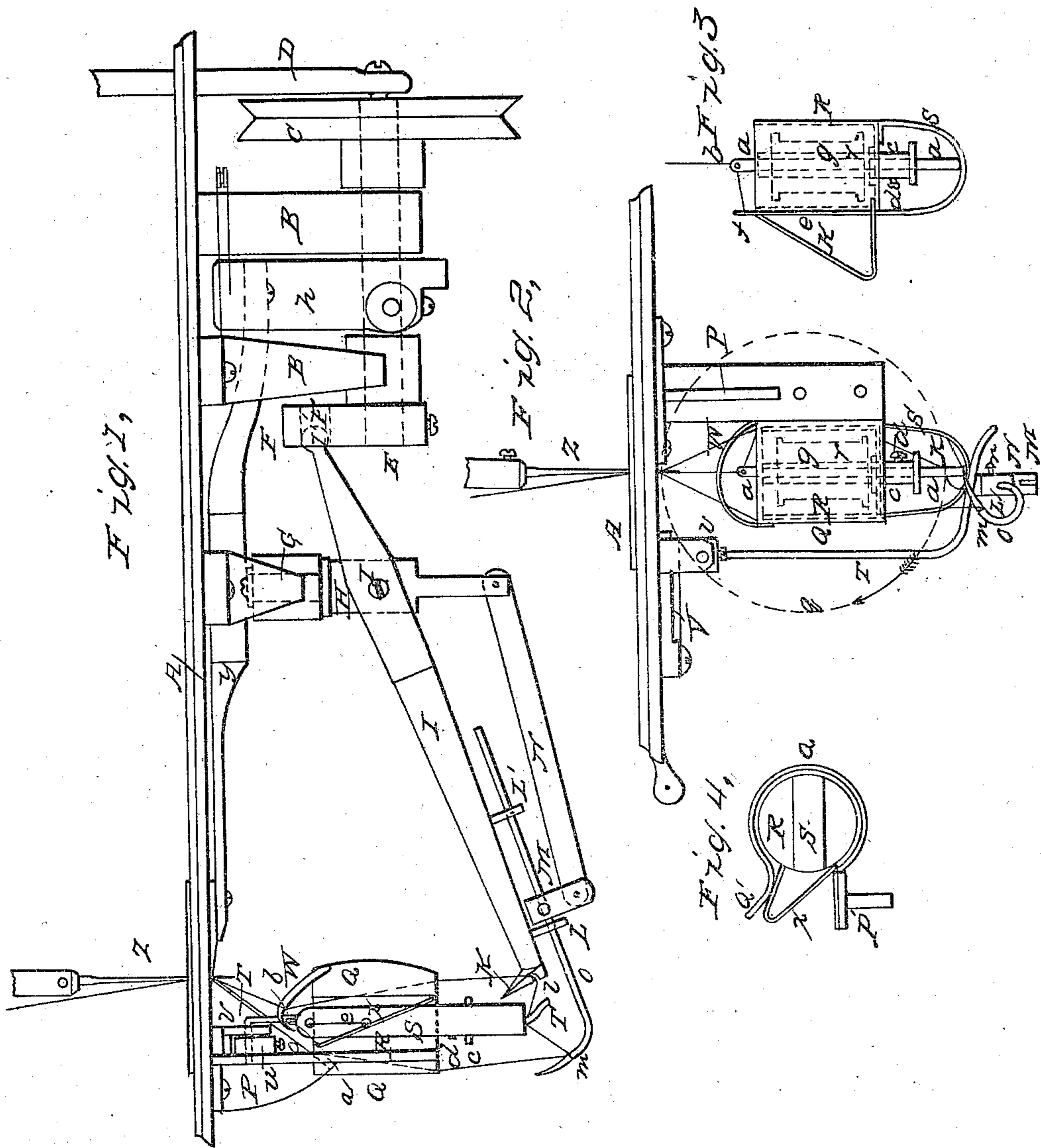


R. THOMPSON.
Sewing Machine.

No. 42,449.

Patented April 19, 1864.



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IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 42,449, dated April 19, 1864.

To all whom it may concern:

Be it known that I, ROSEWELL THOMPSON, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and useful Improvement in Double-Spool Shuttle-Stitch Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of those parts of the machine to which my improvement relates; Fig. 2, a front elevation of the same; Fig. 3, a side view of the lower spool-case removed; Fig. 4, a bottom view of the same and its holder Q.

The drawings are full size, and like parts are indicated by the same letters in all.

The nature of my invention consists, first, in making the shuttle-stitch by means of a double revolving hook so constructed as to close together when entering the loop formed by the needle, and spread the thread or loop apart sufficiently wide during its revolution to encompass and permit the use of a commercial spool, thereby avoiding the necessity of rewinding the thread; second, in so constructing the spool-case as to rest entirely on the center of its lower end, in order to facilitate the passage of the thread under and around the same; third, in the employment of a hinged wire, T, constructed and arranged as hereinafter described, for the purpose of supporting the spool-case, allowing it to rest upon its center, and be readily removed or inserted; and, fourth, in the use of the shield W, combined and arranged as hereinafter described, for the purpose of protecting the "cast-off" thread from the revolving hooks, and causing the under thread to draw perpendicularly from the center of the spool-case, and thereby prevent the latter from bearing hard against its holder.

To enable others skilled in the art to make and use my improvement, I will now proceed to describe its construction and operation.

A is the table.

B and B' are studs attached to the under side of the table, through the lower ends of

which the shaft E passes and turns in suitable bearings.

C is the driving-pulley, fast to the shaft E.

D is the pitman, which vibrates the arm that carries the needle Z.

F is a crank attached to the end of shaft E.

G is a stud made fast to the table.

H is a vertical shaft, the upper end of which (as represented by the dotted lines in Fig 1) turns in the stud G, being prevented from dropping out by means of the screw p.

I is the hook-lever, which is provided with a slot to receive the shaft H and turns on the fulcrum J. On the short end of lever I is a ball, I', which plays freely in the round hole F' in the crank F.

K is one part of the double hook, the shape and size of which are shown in Figs. 1 and 2, l being a notch for retaining the upper thread until it is carried under the lower spool.

L and L' are starts on the under side of the lever I.

O is a steel wire, shaped as shown in Figs. 1 and 2, and constituting the other part of the double hook, being provided with a notch, m, for retaining the upper thread until it is carried under the lower spool.

As represented in Fig. 1, this wire O slides through holes in the starts L and L'.

M is a sliding block, through the upper part of which is a hole to receive the wire O, to which it is confined by means of a set-screw, n.

N is a strip of sheet-iron or steel, one end of which is pivoted to the bottom of the block M and the opposite end to the bottom of the shaft H.

Thus combined and arranged it is obvious that the pointed end of the wire O will be at the greatest distance from the hook K when the crank F is in the position represented in Fig. 1, and that the two hooks will gradually approach each other as the crank F descends toward its lowest point of motion, and before they reach the loop formed by the needle the two hook-points will be together, so as to enter said loop precisely as they would if constituting a single hook, and then as the crank F rises and the hooks descend the latter will begin to separate, spreading the loop of the up-

per thread (which is retained by the notches *l* and *m*) until it is distended far enough to pass around the spool-case R.

P is a stud attached to the bottom of the table A, as represented in Figs. 1 and 2.

Q is a piece of sheet-brass or other suitable metal, one edge of which is riveted to the stud P, as shown in Figs. 1, 2, and 4, the opposite edge, Q', being bent outward, as represented in Fig. 4. The main body of this holder Q, as shown in Fig. 4, is cylindrical—about three-fourths of a cylinder—large enough to receive the removable spool-case R, and also give sufficient space for the expanded loop formed by the needle to be freely passed between them.

R is the removable spool-case, of sheet-brass or other suitable metal, open at the top and provided with a bottom, as shown in Figs. 2, 3, and 4.

S is a strip of sheet metal, bent and attached to the spool-case R, as represented in Fig. 3, and forming in effect a continuation of the case.

T is a wire bent as shown in Figs. 2 and 1, the upper end entering the square block U, to which it is confined by means of the set-screw *o*, the object of said wire being to support the spool-case, and at the same time allow the thread to pass freely between it and the strip S.

V is a straight spring, resting on the top of the block U, by means of which the wire T is held either in the position shown in Fig. 2 or at an angle of forty-five degrees with the same, when said wire is thrown back so that the spool-case may be inserted or removed.

X is a wire bent as seen in Figs. 3 and 4, and passing diagonally over the spool-case, (see Fig. 1,) to which it is attached at both extremities, the purpose of said wire being, first, to prevent the case R from turning in the holder Q, (see Figs. 1 and 4,) and, second, to assist in throwing the loop to the front side of the case.

W is an arch of sheet metal, bent as shown in Figs. 1 and 2, one end being riveted to the wing Q' and the opposite end to the opposite side of the case, the object of said arch being to shield the cast-off loop from being caught by the hooks, and also to make the lower thread draw perpendicularly, and thereby pre-

vent the spool-case from being forced against the side of the holder.

a is the tension-wire of the under thread, which passes through the thumb-piece *c*, to which it is confined by means of the set-screw *d* and up through a tube, *r*, the latter, *r*, being provided with a spiral spring, by means of which sufficient friction is given to the wire *a* to keep it in place wherever it is turned. Through the top of *a* is a hole, *b*. Thus to the lower spool-thread passing from spool *g* through the holes *e*, *f*, and *b* any required degree of tension can be given by simply turning the wire *a*, so as to wind the thread more or less around it.

Y is the feed-bar, pivoted near its center to the under side of the table, motion being communicated to it by means of the arm *h* and cams on shaft E in the usual manner.

j is a set-screw, by means of which the length of the stitch may be varied.

Having thus described the construction and operation of my improvement, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Making the shuttle-stitch by means of a double revolving hook, so constructed as to close together when entering the loop formed by the needle, and spread the thread or loop apart wide enough during its revolution to encompass a commercial spool, substantially as described.

2. The spool-case R, so constructed that its lower end may rest upon its center only to facilitate the passage of the thread under and around the same, substantially as described.

3. The hinged wire T, in combination with the spool-case R, constructed and operating substantially as described.

4. The shield W, combined and arranged substantially as set forth, for the double purpose of protecting the cast-off thread from the revolving hooks and causing the under thread to draw perpendicularly from the center of the spool-case.

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Witnesses:

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