G. W. STEDMAN.

Sewing Machine.

No. 13,201. Patented July 3, 1855.

Fig. 3

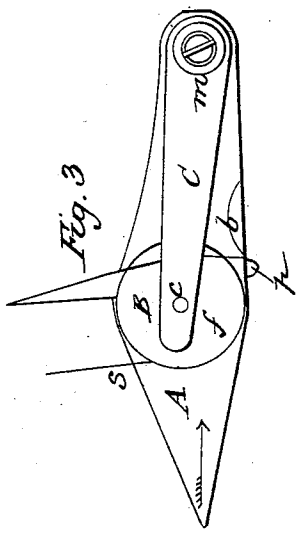


Fig. 4.

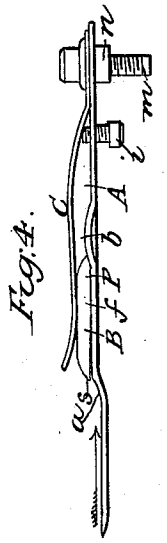


Fig. 6.

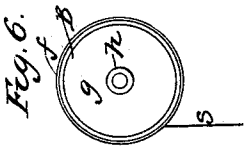


Fig. 1

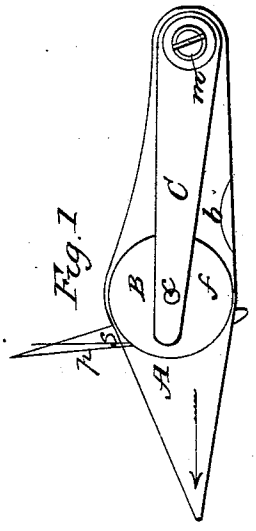


Fig. 2.

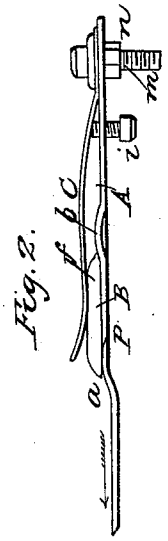
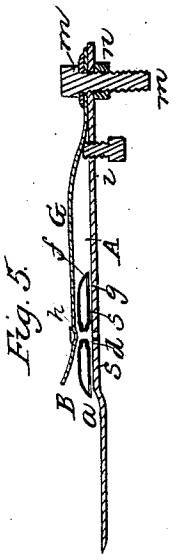


Fig. 5.



UNITED STATES PATENT OFFICE.

GEO. W. STEDMAN, OF VIENNA, NEW JERSEY.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **13,201**, dated July 3, 1855.

To all whom it may concern:

Be it known that I, GEORGE W. STEDMAN, of Vienna, in the county of Warren and State of New Jersey, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side view of the part of a sewing-machine to which my invention relates, showing it in the act of entering the loop of the needle-thread; Fig. 2, an edge view thereof in the same position; Fig. 3, a side view, showing it in the act of receding from the loop of the needle-thread; Fig. 4, an edge view thereof in the same position; Fig. 5, a section in the line *x x*, Fig. 1; Fig. 6, view of the under or flat side of the bobbin.

Like letters designate corresponding parts in all the figures.

The nature of my invention consists in mounting a bobbin, or its equivalent, containing the second or shuttle-thread, upon a reciprocating plate or looper, which, having a pointed projection extending before said bobbin, first enters the loop of the needle-thread and then carries the bobbin over and through it, substantially as hereinafter set forth, whereby I am enabled to make the shuttle-stitch without the employment of a shuttle, thus avoiding several defects and inconveniences in its use and gaining additional advantages.

I prepare a plate, A, substantially of the form shown in the drawings, *i. e.*, pointed at one end and widening toward the middle sufficiently to cover a bobbin, B, of convenient size, and as thin as may be and insure the proper degree of strength and rigidity. This plate is arranged in a proper position below the cloth-plate to enter the loop of the needle-thread, and is caused to reciprocate or vibrate precisely in the same manner as an ordinary looper for forming the chain or single-thread stitch by any convenient and well-known means. It may be attached to a rock-shaft or other device for giving it motion by means of a bolt, *m*, and nut *n*.

The bobbin B consists of a circular case formed of a convex plate, *f*, on one side and a flat plate, *g*, on the other, the two plates being united by an eyelet or rivet, *h*, Figs. 5 and 6, in the center, or by any other suitable means. The flat plate *g* is somewhat less in diameter than the convex plate *f*, so as to leave sufficient space inside of the edge of the latter for the thread *s* to be wound in or unwound, as seen in the same figures, and its outer surface is sunk below or flush with the edge of said plate *f*, which will consequently rest closely upon any flat surface and completely hide the flat plate. The object of this is to allow the loop of the needle-thread to pass under the bobbin without being in danger of getting inside thereof. The bobbin has a round shallow cavity in the center of each face, the one in the flat plate *g* fitting over a rounded projection, *d*, Fig. 5, on the surface of the loop-plate A, and that in the convex plate *f* fitting over a similar projection, *e*, on the under side of an elastic plate or spring, C, one end of which is attached to the loop-plate A, as shown in the drawings. These projections fitting into the cavities of the bobbin keep it in place, serve as axes or gudgeons, on which the bobbin turns in unwinding its thread, and at the same time allow the loop of the needle-thread to freely pass under and over said bobbin. A screw, *i*, is employed to adjust the pressure of the spring on the bobbin in order to obtain the proper degree of tension of its thread. A rigid plate might be used instead of the spring C provided a little space, sufficient for the passage of the thread, should be allowed over the bobbin; but I consider the spring superior, not only because the tension of the thread is regulated thereby, but for convenience in inserting and withdrawing the bobbin by simply lifting it therefrom. The forward end of the loop-plate is curved away from the bobbin a little, as shown at *a*, Figs. 2 and 4, the curve commencing some distance back of the front edge of said bobbin, for the purpose of causing the loop of the needle-thread (indicated by the letter *p* in the drawings) to pass under the bobbin when the loop-plate is entering the loop or going in the direction indicated by the arrows in Figs. 1 and 2. When the bobbin has passed entirely over the loop *p* and the loop-plate again recedes, the said loop *p* is required to return on the other or upper side of the bobbin, and as the under side thereof lies flat and is pressed closely upon the loop-plate, it will readily do so. But to prevent the possibility of its returning below the bobbin, I generally bend up one edge of the loop-

plate a little, as shown at *b*, opposite the hind edge of the bobbin, for the purpose of spreading or raising the loop.

Instead of the cavities in the center of the bobbin and the corresponding projections on the loop-plate A and spring C, the whole bobbin may rest and turn in a shallow cavity formed in the loop-plate, thus dispensing with any axis or other device for holding the bobbin, in which case the margin of the cavity in the loop-plate should be cut away under the front edge of the bobbin, in the position *a*, to enable the loop to get beneath the bobbin. And instead of a circular bobbin an oblong or shuttle-shaped case, containing a spool of thread, might be employed without changing the principle of the invention, the resemblance to the real shuttle being only in construction, not in action.

The advantages of my above-described substitute for a shuttle for forming a shuttle-stitch are principally greater cheapness, simplicity, and facility of construction, no rubbing-surfaces of a shuttle in its race, so that no oil is required which might soil the thread, no friction and noise incident to the motion of a shuttle, as the loop-plate is firmly attached to its driver, and especially obviating all liability of missing the stitch or hitting and breaking the needle, because the loop-plate acts with all the precision and firmness of an ordinary looper, while the passage of the loop around the bobbin is sure and unerring.

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

1. Mounting a bobbin or its equivalent upon and combining it with a reciprocating plate or looper, which is provided with a pointed projection extending before said bobbin, and arranged so as to enter the loop of the needle-thread, then carry the bobbin over the outside of and finally back through said loop, substantially as described, whereby the liability to miss the stitch and break the needle, together with the noise and friction of a shuttle, is avoided, the use of oil for lubricating the shuttle-race dispensed with, and the consequent soiling of the thread prevented.

2. Constructing the bobbin with one face sunk below or flush with the edge of the other face, its thread consequently unwinding from its face instead of its periphery for the purpose of preventing the loop of the needle-thread getting inside of the bobbin, substantially as herein set forth.

The above specification of my new and useful improvement in sewing-machines signed by me this 7th day of June, 1855.

GEO. W. STEDMAN.

Witnesses:

ISAAC BURROUGHS,

DANIEL HULL.