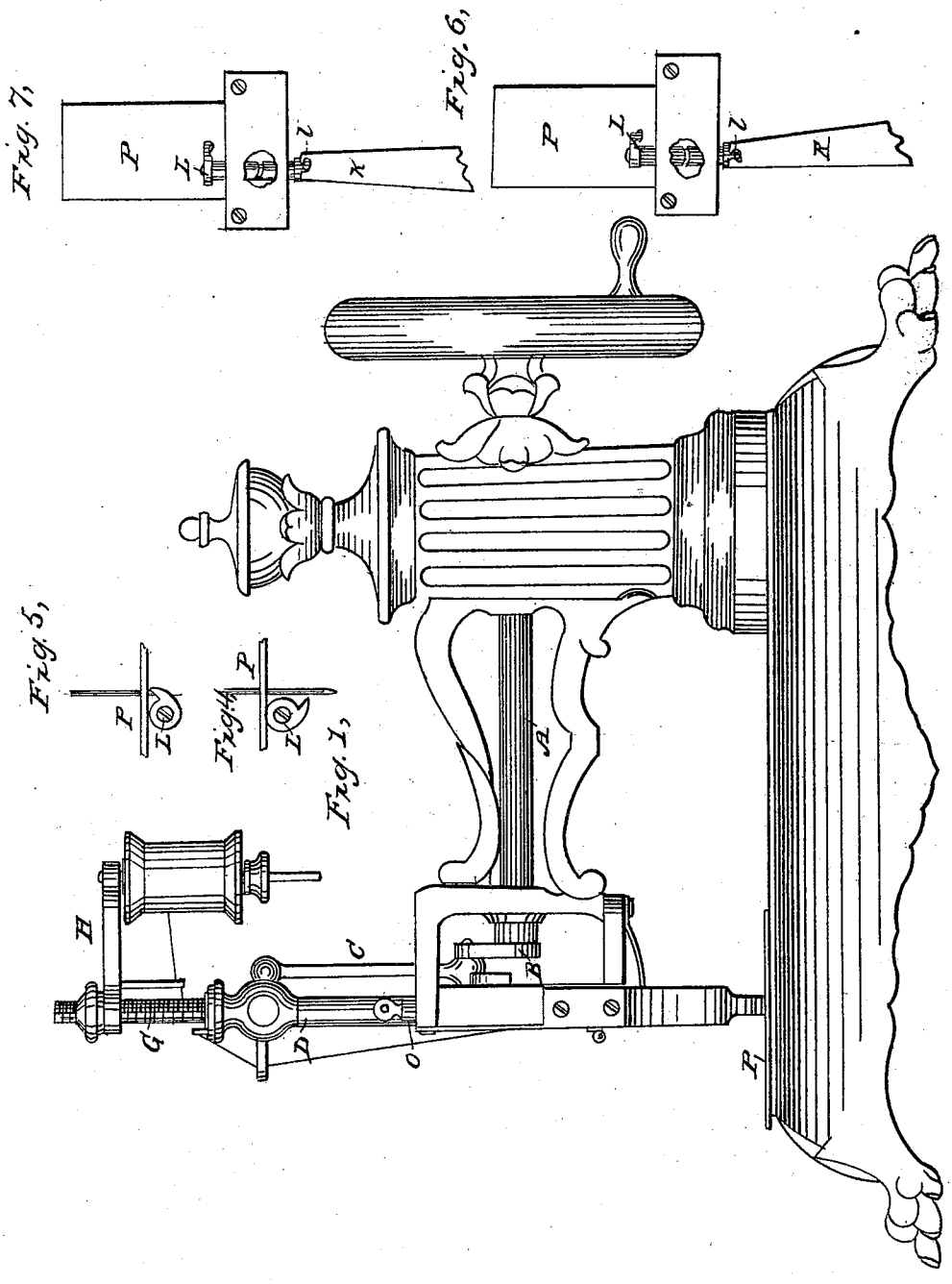
2 Sheets—Sheet 1.

E. SAVAGE.

Sewing Machine.

No. 19,876. Patented April 6, 1858.



2 Sheets—Sheet 2.

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Fig. 2,

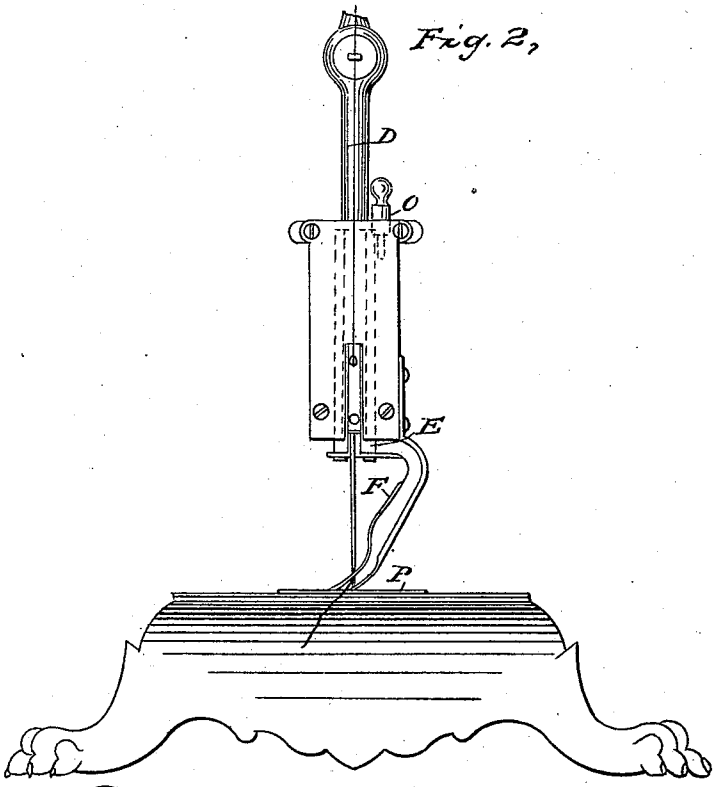
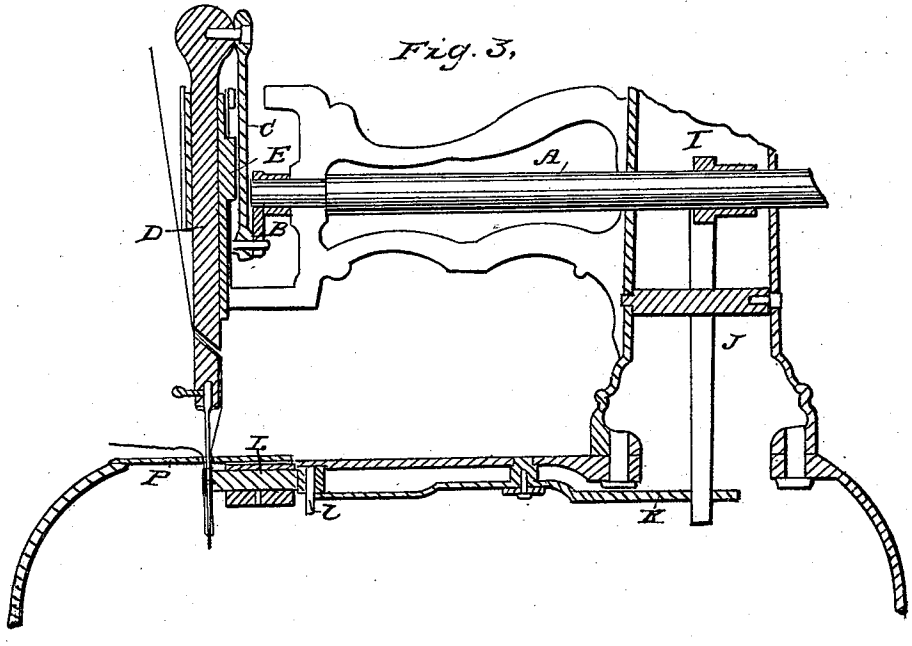


Fig. 3,



UNITED STATES PATENT OFFICE.

ELLIOT SAVAGE, OF BERLIN, CONNECTICUT.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **19,876**, dated April 6, 1858.

To all whom it may concern:

Be it known that I, ELLIOT SAVAGE, of Berlin, in the county of Hartford, State of Connecticut, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of such drawings, Figure 1 represents a front elevation of the machine to which my improvements are applied; Fig. 2, an end view of parts of the same; Fig. 3, a vertical and longitudinal section of the working parts of the machine taken through the middle of the needle-bar. Figs. 4, 5, 6, and 7 show the action of the looper L, Figs. 4 and 5 being end views of the same, Fig. 4 showing its position just before entering the loop and Fig. 5 its position while holding the loop for the needle to pass through it. Figs. 6 and 7 are under side views of the looper and the parts connected with it, Fig. 6 showing it when ready to enter the loop and Fig. 7 in the same position as in Fig, 5, the plate through which the arbor of the looper passes being represented as partly removed in order to show the groove into which the end of the small screw enters, which causes the looper to have an endwise motion when the arbor is rotated back and forth, thus allowing the looper to pass the front side of the needle, and when its end rests upon the plate P to hold the loop in the proper position for the needle to pass through it as it descends.

A is the driving-shaft of the machine; B, the crank; C, the pitman or connecting-rod, which is connected at its upper end with the needle-bar D, which passes through the slide feed-bar E, to the lower end of which is attached the spring feed-dog F. On the top of the needle-bar is the screw G, attached to which by a female screw and check-nut to keep it in position is the spool-holder H. I is the cam which gives motion to the levers J and K. The lever K is connected with the looper L by the pin *l*, and thus when caused to vibrate by the action of the cam I gives the required motion to the looper L. The requisite tension upon the thread is obtained by passing it from the spool through the bracket *h* around and in contact with the surface of the screw G. The spool-holder H is made to ascend and descend when rotated by the action of the screw G, thus keeping the hole in the bracket *h*, through which the thread passes, always in the proper position to wind the thread around the screw G in its spiral groove. The amount of tension is regulated by the number of times the thread, which is represented by the red lines, is made to encircle the screw G. The length of stitch is regulated by the screw O.

In the operation of sewing the needle is made to descend, passing through the material to be sewed, and soon after it commences its ascent a loop or slack is produced in the thread at the front side of the needle. The looper is held in position by the cam I until said loop opens sufficiently to allow the looper to pass between the thread and the needle, when the looper is released, and by the action of the spring against a pin projecting from the upper side of the lever K the looper is made to descend and rest upon the plate P, the endwise motion of its axis bringing the loop which passes around its end into the proper position to admit the needle to pass through it as it descends. As the needle ascends the loop is drawn tightly around the end of the looper by the tension of the thread, which is obtained as hereinafter described. When the point of the needle has passed through the loop the action of the cam I brings the looper back to its former position, and the same process continued forms the usual tambour-stitch seam.

I claim—

1. Forming a chain-stitch seam by the looper constructed and arranged in the manner described, when operating in combination with an eye-pointed needle, so that the looper shall enter the open loop as the needle rises, and while resting on the bed-plate securely hold the first loop open in the path of the needle and release the loop when the needle shall have entered to form a new stitch, as hereinbefore set forth.

2. The specific device herein described for regulating the tension of the thread in sewing-machines, consisting in a spool-supporting bracket constructed, as specified and arranged,

in relation to and operating in connection with a screw-threaded standard in such a manner as to ascend or descend when rotated around and upon said standard for the purpose of causing the thread to be wound around said screw until the requisite degree of tension is obtained.

In testimony whereof I have hereunto set my signature this 15th day of January, A. D. 1858.

ELLIOT SAVAGE.

Witnesses:

CATHARINE STEELE BARNES,

JONATHAN BARNES.