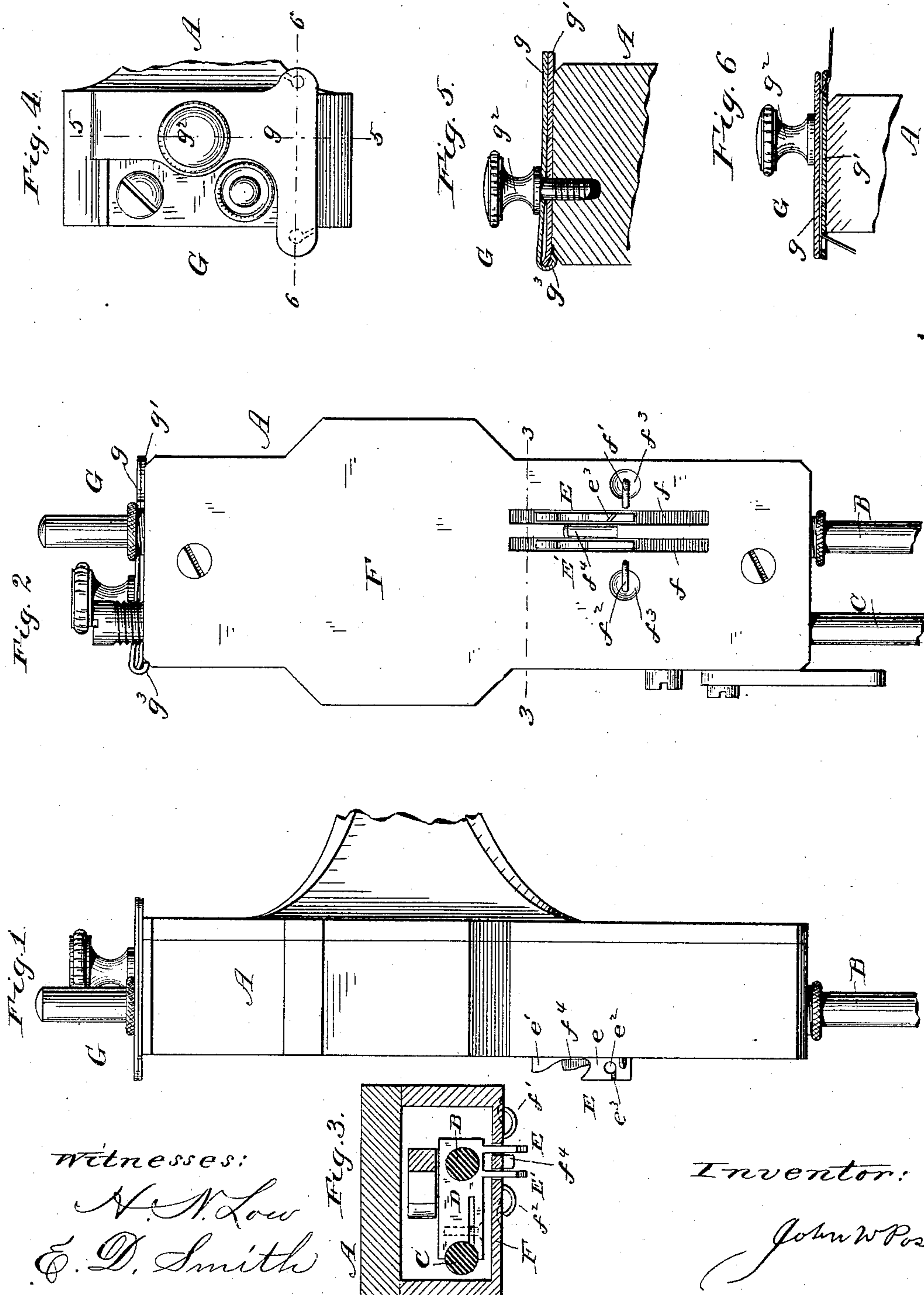


(No Model.)

J. W. POST.
SEWING MACHINE.

No. 315,067.

Patented Apr. 7, 1885.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN W. POST, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 315,067, dated April 7, 1885.

Application filed June 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. POST, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Take-Up and Tension Devices for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to take-up and tension devices more particularly intended for that class of sewing-machines adapted to form different kinds of stitches, although my invention is capable of use with other kinds of machines.

In the drawings, Figure 1 is a side elevation of the head of a sewing-machine with my invention applied thereto. Fig. 2 is a front view of the same. Fig. 3 is a horizontal section on the line 3 3, Fig. 2. Fig. 4 is a detail top view of the tension device. Fig. 5 is a section on line 5 5, Fig. 4; and Fig. 6, a section on line 6 6, Fig. 4.

A indicates the head of a sewing-machine, said head having vertical bearings for the needle and presser bars. The needle-bar B is intended to be operated from a horizontal rock-shaft journaled in the bracket-arm above the work-plate, in the manner fully shown and described in my application No. 136,180, filed simultaneously herewith, said rock-shaft having a crank-and-link connection with a cross-head, D, secured to the needle-bar, and having at its end a semi-cylindrical recess fitting against the presser-bar C.

On the cross-head D, and preferably formed integral therewith, are two take-up lugs, E and E', projecting outward through slots *ff* in face-plate F. The lugs E and E' are both the same in contour, having nearly rectangular lower portions, *e*, and approximately wedge-shaped or inclined upper portions, *e'*. The lower portion of the lug E is provided with an open or slotted thread-eye, *e*², the opening or slot *e*³ of said eye being arranged diagonally, as shown in Fig. 2. This diagonal slot is easily threaded, but the thread cannot accidentally escape therefrom.

Secured to the face-plate F, adjacent to the slots *ff*, are thread-guides *f'* and *f*², the inwardly-turned points of which enter circular recesses *f*³ *f*³ in the face-plate, these guides

being thus adapted to be easily threaded by drawing the thread against their inclined ends, while the recesses prevent any accidental displacement of the thread from the guides.

On the face-plate F, between the slots *ff*, in which the take-up lugs E and E' travel, is a stationary lug, *f*⁴, formed thickest at the top, thus having an inclined outer face. This stationary lug, which is preferably formed integral with the face-plate, is intended to cooperate with the movable lugs on the cross-head, as will be described presently.

G is the tension device, which consists of upper and lower L-formed plates, *g* and *g'*, and a holding and regulating screw, *g*². The portions of the plates through which the screw passes are offset or at right angles to the bearing portions which act on the thread, as clearly shown in Fig. 4, and by virtue of this construction, which permits the holding and regulating screw to be removed from the path of the thread, long smooth friction-surfaces for the latter are secured. With these long friction-surfaces only a very slight adjustment of the regulating-screw is necessary to make a considerable variation of the tension, and nearly-flat tension-plates, which are neat, compact, and cheaply manufactured, may therefore be used. The lower tension-plate, *g'*, is provided with slotted guide-eyes, which serve to prevent the accidental displacement of the thread, and the rear end of said plate, beyond the screw *g*², is turned upward slightly, as shown in Fig. 5, to separate the plates a little, so that the upper plate may spring, under the action of the regulating-screw, to create the proper friction between the outer portions of the plates and the thread passing between the same. The upper plate, *g*, is provided at its end with a downwardly-turned portion or hook, *g*³, embracing the upwardly-turned end of the lower plate and impinging slightly against the head A. With these plates thus constructed they will both be held together and in position on the head by the screw *g*² without any other means of attachment. These tension and take-up devices are specially intended for use with the machine fully shown and described in my application No. 136,180, hereinbefore referred to, said machine being adapted by means of interchangeable loopers

to form chain, double-chain, and lock stitches, as may be desired.

When the chain or double chain stitch loopers are in operation, the thread will be passed from the tension device through the guide f' and the eye e^2 in the lug E to the needle, the moving eye e^2 as it rises with the needle-bar drawing up sufficient thread to tighten the stitches.

When the lock-stitch looper is in position, the thread will be passed from the tension device through both the guides f' and f^2 , and thence to the needle. In passing through these guides it is drawn across the path of the lugs E and E' on the cross-head D, and as the latter is reciprocated with the needle-bar the thread will first be lifted by the shoulders formed by the upper sides of the lower parts, e , of the lugs as the needle-bar ascends to tighten the stitches. These lower parts, e , of the lugs E and E' are so arranged that their upper sides will rise slightly above the top of the stationary lug f^4 on the face-plate, the inclined face of the latter lug crowding the thread outward a little, so that when it is lifted to the top of said lug it will slip onto the shoulder afforded by the upper surface of the same. When the thread has been lifted to the top of the stationary lug, it will have been drawn up sufficiently so that the expansion of the loop in forming the next stitch will tighten the first stitch. The thread will remain on the stationary lug until the needle-bar again descends, when the inclined surfaces of the upper parts, e' , of the lugs E and E' will bear against the thread and push the same off from the stationary lug f^4 , thus giving sufficient slack to easily enable the looper to perform its function of expanding the loops of needle-thread. Thus it will be apparent that my construction affords a simple and efficient take-up mechanism adapted to co-operate with the needle and different loopers in forming different stitches, and in forming lock-stitches the thread will be drawn up at the proper moment, held out of the way of the descending needle until the point of the latter has penetrated the fabric, and will then be slackened to yield the thread to the action of the looper.

Having thus described my invention, I claim—

1. A take-up mechanism for sewing-machines, consisting of the combination, with the needle-bar and slotted face-plate, of a cross-head secured to said needle-bar, a forwardly-projecting lug on said cross-head extending outward through said face-plate, and having a diagonally-slotted thread-eye, and a thread-guide on said face-plate adjacent to the slot therein, substantially as set forth.

2. A take-up mechanism for sewing-machines, consisting of the combination, with the needle-bar and slotted face-plate, of a cross-head to which said bar is secured, two forwardly-projecting lugs on said cross-head, extending outward through said face-plate and having lifting-shoulders and inclined upper portions, a stationary lug or projection on said face-plate, arranged between the lugs on the cross-head, and two thread-guides on the face-plate placed on opposite sides of the path of the lugs on the cross-head, substantially as set forth.

3. A take-up mechanism for sewing-machines, consisting of the combination, with the needle-bar and slotted face-plate, of a cross-head to which said bar is secured, two forwardly-projecting lugs on said cross-head extending outward through said face-plate, and having lifting-shoulders and inclined upper portions, a stationary lug or projection on said face-plate, arranged between the lugs on the cross-head, and two thread-guides on the face-plate, placed on opposite sides of the path of the lugs on the cross-head, said thread-guides each consisting of a bent wire having its point arranged in a recess in the face-plate, substantially as set forth.

4. A sewing-machine tension device consisting of the combination of two plates, one having a slightly-upturned end and the other a downwardly-turned portion or hook embracing said upturned end, and a single holding and regulating screw passing through both of said plates, substantially as set forth.

5. A sewing-machine tension device consisting of the combination of two plates, each having two offset portions formed at right angles to each other, one of the said plates having a slightly-upturned end and the other a downwardly-turned portion or hook embracing said upturned end, and a single holding and regulating screw, substantially as set forth.

6. A sewing-machine tension device consisting of the combination of two plates, each having two offset portions, and a single holding and regulating screw passing through one of the said portions of both of said plates, leaving an unobstructed passage for the thread between the other of the said portions thereof, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. POST.

Witnesses:

ALBERT H. NORRIS,
JULIUS G. CLARK.