

(No Model.)

2 Sheets—Sheet 1.

B. F. LANDIS.

TAKE-UP FOR SEWING MACHINES.

No. 305,934.

Patented Sept. 30, 1884.

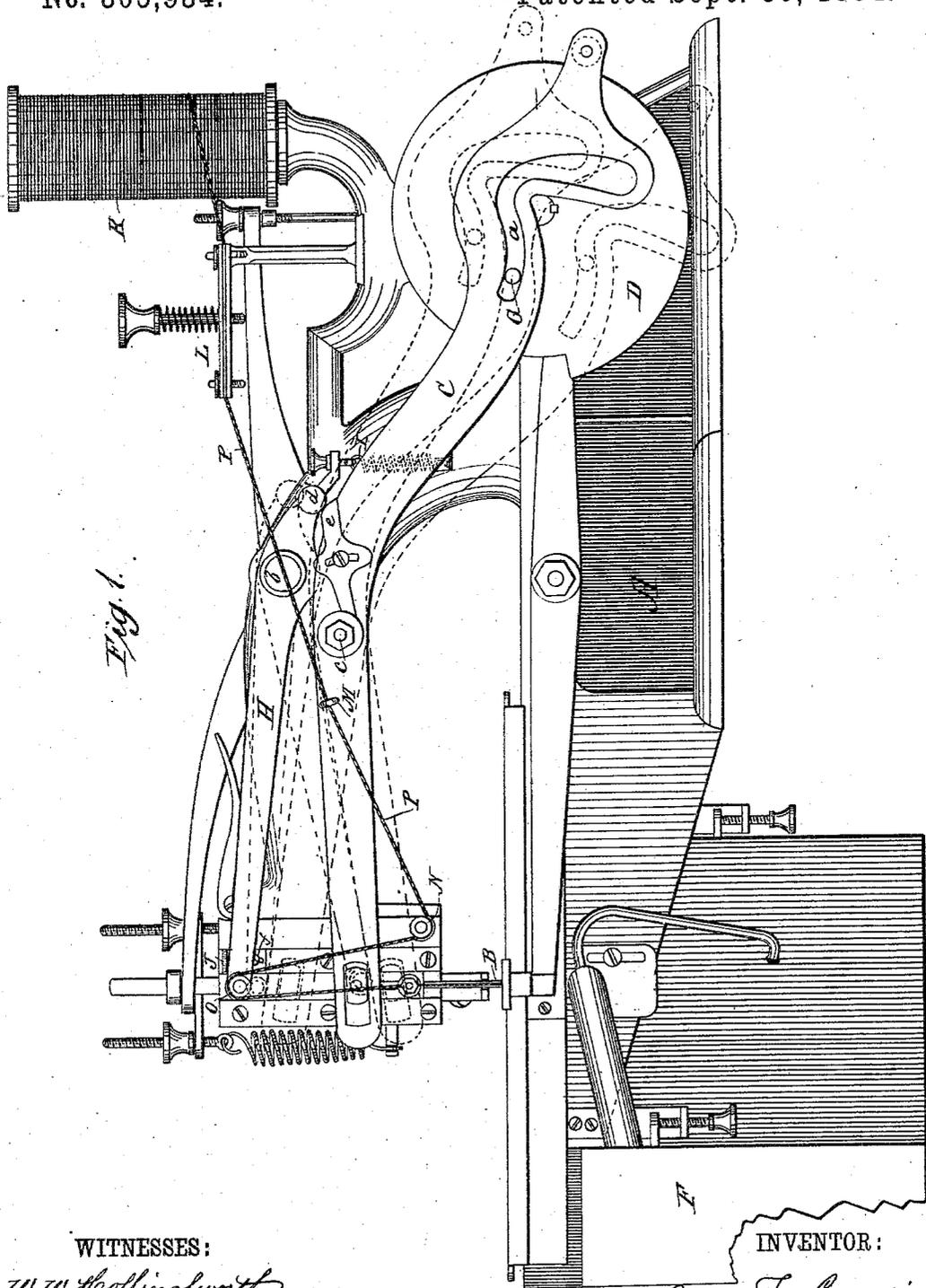


Fig. 1.

WITNESSES:

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W. H. Owens

INVENTOR:

Benj. F. Landis
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ATTORNEYS.

(No Model.)

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Fig. 2.

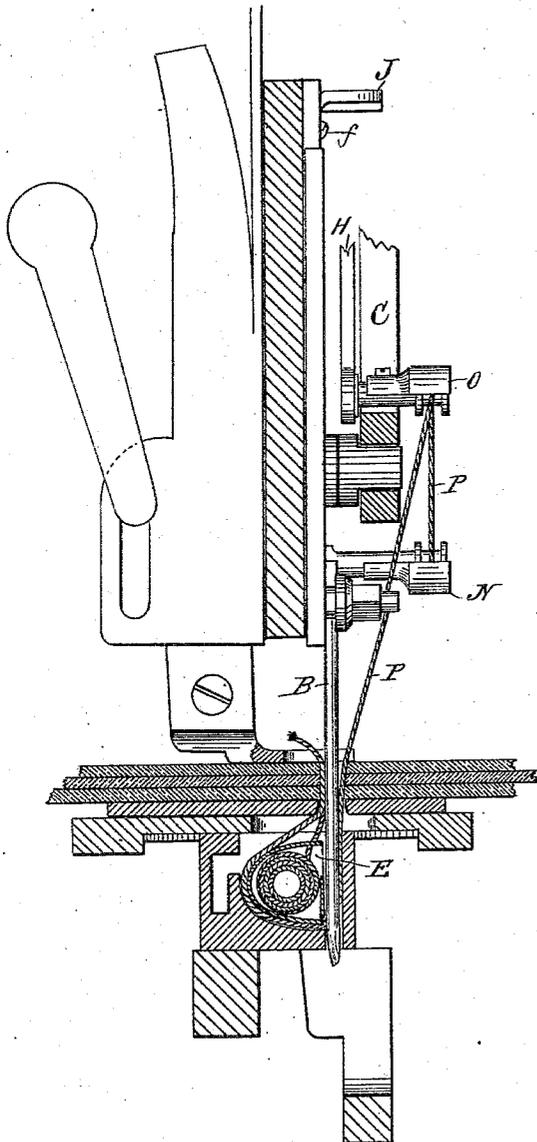
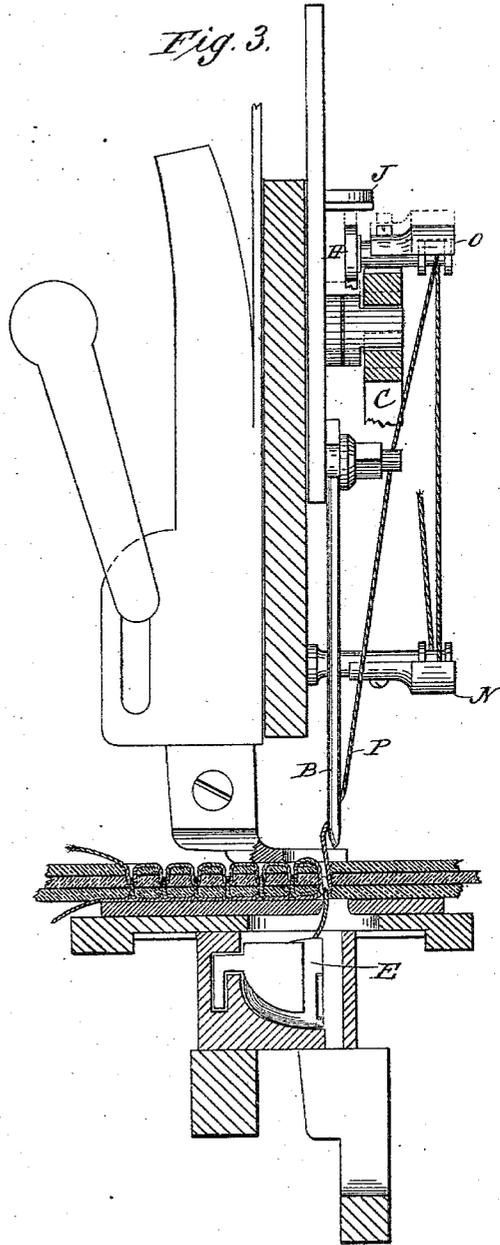


Fig. 3.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. LANDIS, OF ST. JOSEPH, MISSOURI.

TAKE-UP FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 305,934, dated September 30, 1884.

Application filed April 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. LANDIS, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Take-Ups for Sewing-Machines, of which the following is a description.

This invention relates to that class of devices used in sewing-machines to take up the loop formed in the upper thread for the passage of the shuttle which carries the lower thread, after the passage of the shuttle and before the withdrawal of the needle; and its object is, first, to take up the loop and then to draw the thread tight during the withdrawal of the needle, so that a common-sized needle may be enabled to carry a much larger thread than usual. The take-ups now common act to merely draw up the thread which formed the loop. This works well enough in sewing cloth or light work; but when leather is sewed the leather clings so closely around the needle that it has been found necessary to groove the needle to carry the thread, and yet only a small thread can be carried in firm stiff leather, because the leather holds the thread from withdrawing with the needle, and forms the slack thread into a loop, thus making two threads to be drawn through at last where it is already difficult to withdraw one. This serious objection is obviated by keeping the thread drawn tightly after the loop is taken up and while the needle is withdrawing.

To this end my invention consists in the construction and combination of parts forming a sewing-machine-thread take-up, hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a sewing-machine, showing my take-up, and Figs. 2 and 3 are transverse vertical sections in detail, showing the action of the thread.

A represents the body of a sewing-machine; B, the needle; C, the arm which reciprocates the needle; D, a cam on the drive-shaft; E, the shuttle, and F a wax supplying and heating attachment.

The needle-arm may be operated by any usual mechanism.

I have shown a crank, G, on the cam D,

adapted to travel in a cam-groove, *a*, in the arm C. This cam-groove is shaped to give the required movement to the needle.

H is my take-up lever, pivoted to the machine at *b* a little above and to the rear of the pivot *c* of arm C.

d is a stud projecting from the face of lever H across the path of arm C, to be engaged by a knob, *e*, thereon.

I is a strong spring connecting the rear end of lever H with a rear portion of arm C, acting to draw the two together, and tending to hold the forward end of the lever H constantly raised against the stop-lug J. This lug is secured to the body of the machine by a set-screw, *f*, in a slot in the lug, so that the height of the lug may be adjusted and fixed at discretion.

K is a spool of thread.

L is a tension device.

M is a thread-guide on the arm C.

N is a tension device and thread-guide on the body A, and O is a thread-guide and tension device on the lever H. The thread P passes through these guides to the needle B, as shown. Fig. 1 shows the needle on its way down, having arrived at that point where thread for forming the loop should begin to be let off. Now the knob *e* has come in contact with the stud *d*, and will, as the needle descends, cause the thread-guide O to descend rapidly until said guide rests on the arm C at the lower extremity of the needle-stroke, (see dotted lines *h*,) thus giving down all the thread required for the shuttle, which at this time passes through the loop, there being provision made in the shape of cam-groove *a* to maintain the needle nearly stationary while the shuttle is passing. Now the needle begins to rise, and the lever H rises quickly to its highest extreme, drawing the loop up tightly. The stud *d* being twice as far from the center *c* of arm C as it is from the center *b* of the lever H, any motion of the lever caused by the arm will be twice as great as the motion of the arm. Therefore the lever descends and rises quickly, the spring I drawing it up, and as the needle rises its driving-arm C, descending at the rear end, strains more and more on the spring I, causing the lever H to draw very firmly and with an increasing strain on the

thread, so that the stitch is drawn tight by the take-up before the needle reaches the top of its stroke, and the thread slides through the needle-eye during the said rise.

5 The amount of thread used in forming each stitch being taken from the slack thread forward of the guide N, the take-up lever H is prevented from rising to its upper limit after the stitch is drawn close, and to cause the
10 stitch to bury well and evenly into the leather I adapt the needle-arm to strike the guide O and raise it a little—an eighth of an inch, more or less—at the upper extreme of each stroke of the needle. This act is similar to the last
15 jerk given to the threads by an operation in stitching by hand, and it produces heavy work having an evenness of finish which no amount of steady pulling on the thread can ever effect. The knob *e* is shaped so as to act on the stud
20 with an easy creeping motion, rather than with a thump or blow. The needle has no direct action on the thread to draw the stitch, that being wholly done by my take-up. The only action that the needle-arm has on the
25 stitch is, first, to draw up the thread with the take-up by means of the spring I, and then to finish the stitch by the final stroke against the take-up thread-guide O. By this means the strain upon the needle is greatly lessened,

and this is an especial consideration in heavy work—such as leather from a half inch to three-quarters of an inch thick, frequently required to be sewed in harness-making.

The needle may be carried directly on the arm C, or on a slide propelled by the arm. In either case it is carried by the arm.

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

1. The combination, with a sewing-machine having a needle-carrying arm pivoted to the fixed frame thereof, and means for vibrating the said arm, of a take-up lever pivoted to the said frame, the arm having a knob, and the lever having a stud to engage each other, and a spring connecting the lever with the arm, substantially as shown and described.

2. The combination, with the arm C, having the knob *e*, and carrying the needle B, pivoted to the frame A at *c*, and means, substantially as described, for vibrating the said arm, of the lever H, pivoted to the frame at *b*, the thread-guide O thereon, the spring I, connecting the arm C and lever H, and the adjustable lug J, as and for the purpose specified.

BENJAMIN F. LANDIS.

Witnesses:

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SOLON C. KEMON.