No. 676,586. Patented June 18, 1901.

L. ONDERDONK.

LOOPER MECHANISM FOR SEWING MACHINES.

(Application filed Dec. 5, 1896. Renewed Oct. 22, 1900.)

(No Model.)

Fig. 1.

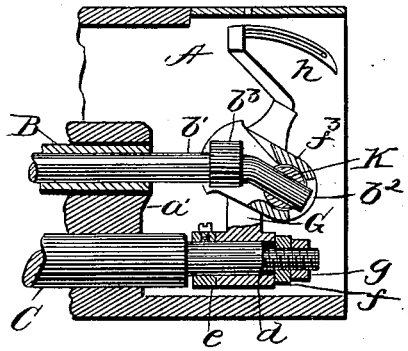


Fig. 2.

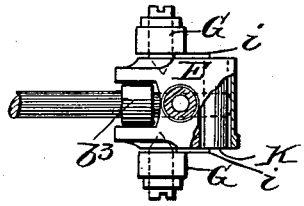


Fig. 3.

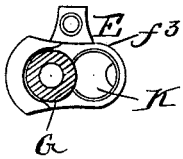
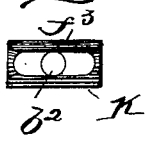


Fig. 4.



Witnesses:
J. M. Fowler Jr.
H. Sturtevant

Inventor:
Lansing Onderdonk
by Chas. S. Sturtevant
Atty.

UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF WINTHROP, MASSACHUSETTS, ASSIGNOR TO UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

LOOPER MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 676,586, dated June 18, 1901.

Application filed December 5, 1896. Renewed October 22, 1900. Serial No. 33,900. (No model.)

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to an improvement in sewing-machines, and particularly to an improved construction of supporting and operating devices for the under-thread-carrying looper of a double-chain-stitch sewing-machine.

The especial type of machine to which the invention is designed to be applied is that illustrated in Patent No. 568,702, of September 29, 1896, in which an inclined crank and eccentric operated from the driving-shaft are used, the latter to oscillate a pivoted yoke, which supports a looper-carrier oscillated by the inclined crank to give a movement to the looper in the direction of its length.

In the above-mentioned device very fine adjustments of the centers of oscillation or rotation of the yoke, looper-carrier, driving-pin, &c., are necessary to prevent binding and friction—that is, the longitudinal axis of the driving-shaft, inclined crank, and looper-carrier must meet at one common point, and this point must be in the plane of the center of oscillation of the pivoted yoke, &c., and the yoke must be of a certain height to accommodate it to the various other parts, &c.; and it is the object of the invention to construct a device which will obviate these fine adjustments heretofore necessary in machines of this character, and thus provide a machine of a more practical character than those heretofore constructed of the type mentioned.

The invention consists in the matters hereinafter described and claimed and is illustrated in the accompanying drawings, in which—

Figure 1 is a side view, partly in section, of a portion of a sewing-machine embodying my invention. Fig. 2 is a top plan view, partly in section, showing the yoke and looper-carrier. Fig. 3 is a detached view, in side elevation, of the looper-carrier, part being in section. Fig. 4 is a detail view of the rolling bearing-block for the inclined crank.

In the drawings, A represents a portion of the bed-plate or arm of the machine, B being the driving or looper-operating shaft, and C the feed rock-shaft, both having a bearing at their forward ends in the standard a'. A stud or spindle b' is secured in the hollow forward end of the shaft B and has formed integral with it or on it the inclined crank b^2 and the eccentric b^3, together with a feed-lifting eccentric. (Not shown.) The forward end of the feed-shaft C also has a stud d, having a collar e and with a reduced screw-threaded end to receive the nuts $f\,g$, there being sleeved on said stud d (which of course may be secured to the machine-frame independent of the feed-shaft) a yoke G, having arms through which are passed cone-screws, to which is pivoted the looper-carrier E, provided with the thread-carrying looper h. This looper-carrier has rearwardly-extending flanges which form a yoke, between which is embraced the eccentric b^3, and it has also forwardly-extending flanges f^3, between which the inclined crank b^2 works. Thus the eccentric serves to oscillate the looper-carrier and pivoted yoke G sidewise, while the inclined crank b^2 vibrates the looper-carrier on its pivot-screws to impart longitudinal movements to the looper h.

To prevent binding of the yoke on this pivot-point as the inclined crank assumes its different positions in the rotation of the driving-shaft, I provide what may be called a "rolling-bearing" engagement between the inclined crank-pin and the looper-carrier, which is capable of accommodating itself to the angle at which the driving-pin may stand. This arrangement consists of a short shaft K, which I term a "rolling bearing-block," having an opening in the center into which the inclined crank b^2 fits, this rolling bearing-block being carried by the looper-carrier, the inner sides of the flanges f^3 being curved to conform to the periphery of said rolling bearing-block K, the latter being held from displacement by means of the curved walls of said flanges and by end washers i. This rolling bearing-block in accommodating itself to various positions the inclined crank b^2 may assume obviates

the danger of binding and avoids the necessity of such extreme nicety of adjustment as to centers which is essential in the construction of the machine shown in the patent above referred to.

By means of the collar *e* and nuts *f g* an adjustment of the pivoted yoke on the stud *d* may be provided.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A looper-operating mechanism for sewing-machines comprising an actuating-shaft, an inclined crank operated thereby, a pivoted yoke with means for oscillating it and a looper-carrier pivotally supported on said yoke and a rolling bearing-block comprising a transverse rocking shaft carried by the looper-carrier and having an opening the walls of which embrace the inclined crank, substantially as described.

2. In a looper-operating mechanism a looper-carrier having forwardly-extending flanges whose inner sides have curved grooves, a rolling bearing-block comprising a transverse shaft supported in said grooves, and an inclined crank engaging said transverse shaft with means for operating the inclined crank, substantially as described.

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

LANSING ONDERDONK.

Witnesses:
CHAS. L. STURTEVANT,
F. S. FAWCETT.