

(No Model.)

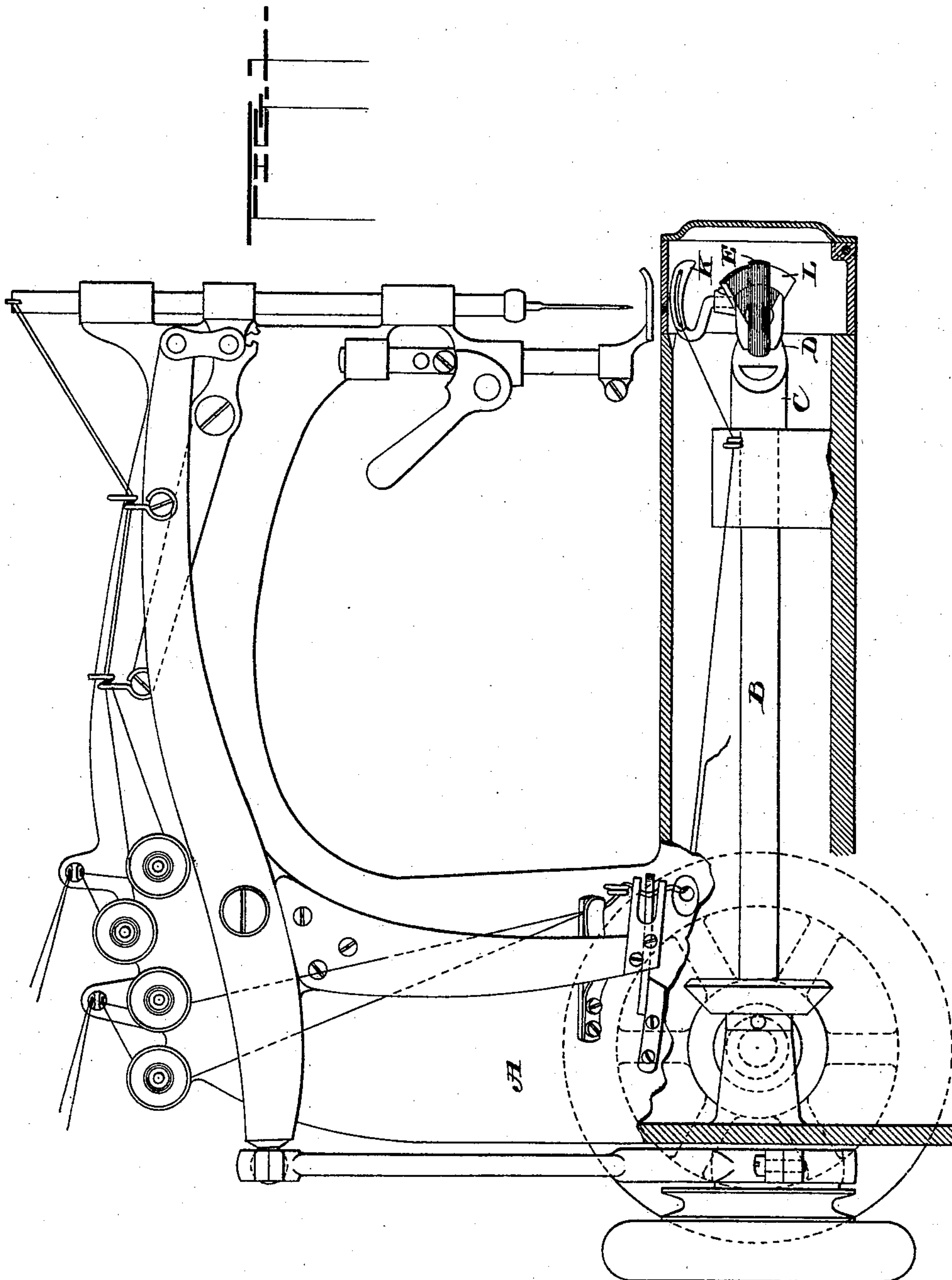
2 Sheets—Sheet 1.

L. ONDERDONK.

LOOPER MECHANISM FOR SEWING MACHINES.

No. 591,542.

Patented Oct. 12, 1897.



Witnesses
C. W. Smith
Marie Dillon

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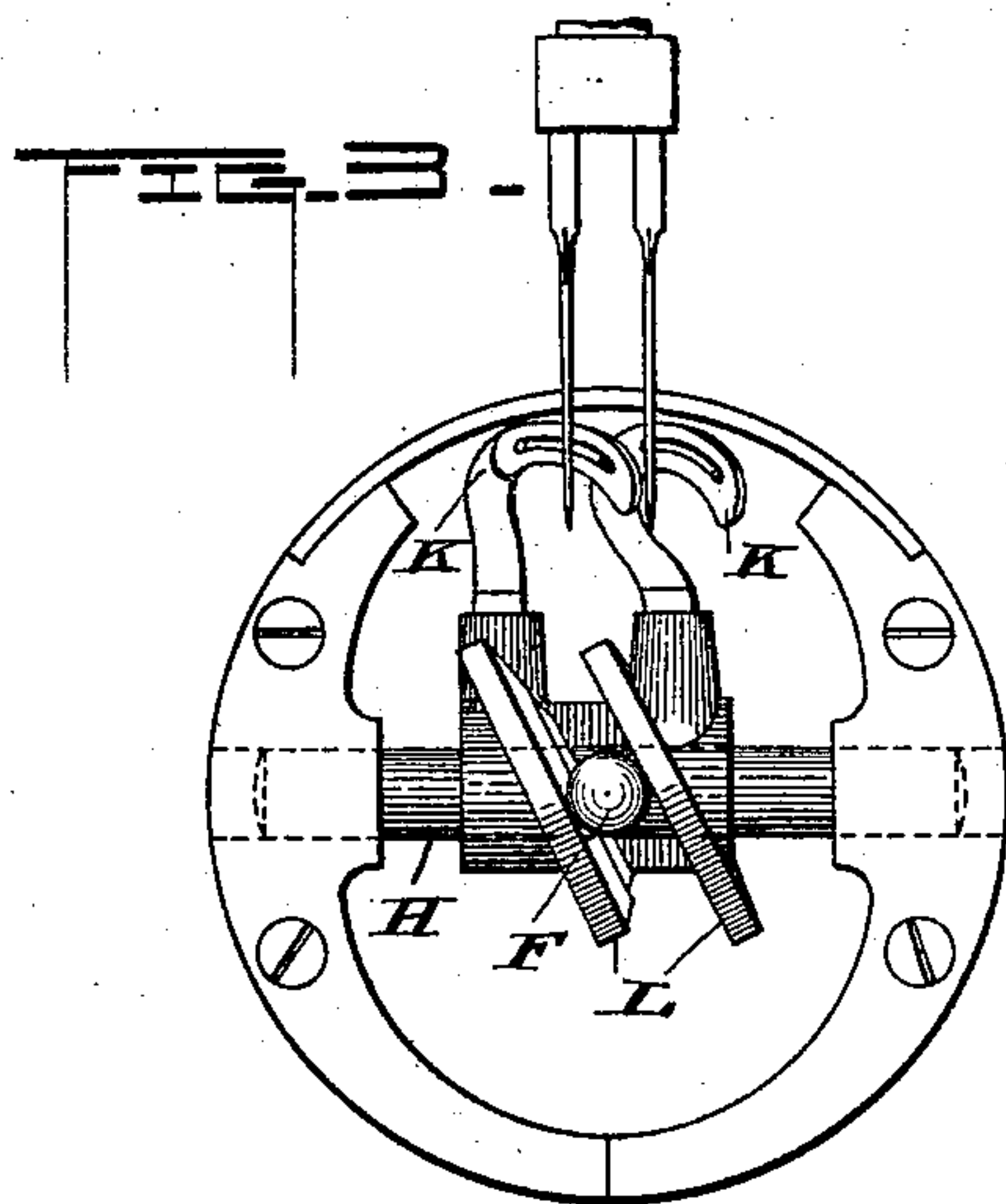
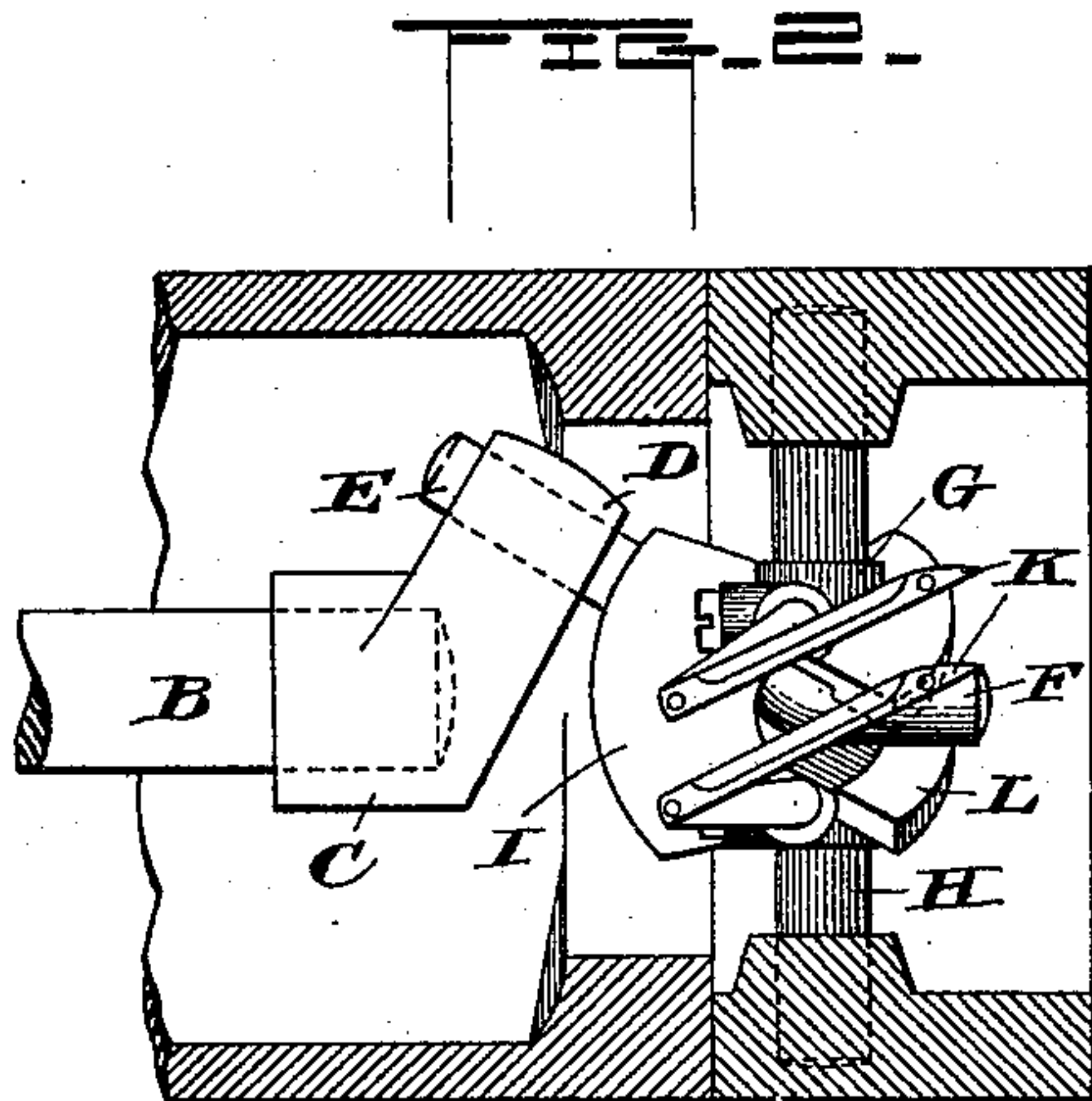
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LOOPER MECHANISM FOR SEWING MACHINES.

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UNITED STATES PATENT OFFICE.

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

LOOPER MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 591,542, dated October 12, 1897.

Application filed February 19, 1896. Serial No. 579,878. (No model.)

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at Boston, in the county of Suffolk, 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 sewing-machines, and particularly to mechanism for operating the under-thread-carrying looper on a chain-stitch sewing-machine which coöperates with the upper-thread-carrying needle to form the stitch.

The object of the invention is to provide a simple and effective device for giving the desired movements to the looper; and the invention consists in the matters hereinafter described, and referred to in the appended claims.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation, partly in section, of so much of a sewing-machine as is necessary to a complete understanding of the invention. Fig. 2 is a sectional plan view of the end of the bed-plate or casing, showing the looper-operating mechanism. Fig. 3 is an end view illustrating the mechanism shown in Fig. 2.

In the present invention I have shown the oscillating movement of the looper-carrier-supporting shaft as that movement which enables the looper to take the loop of needle-thread and the sliding movement of said shaft as the needle-avoiding movement; but it will be understood that I do not wish to be limited in this respect, and, furthermore, I do not wish to be limited to any especial arrangement of the loopers with respect to the needles or with respect to the direction of the feed, nor to the number of needles and loopers used.

In the drawings, A represents the frame of a sewing-machine having the usual needle-lever, needle-bar, presser-bar, presser-foot, and operating parts. The take-up mechanism is operated from an extension on the needle-lever. In the present instance the sewing-machine is provided with a cylindrical

bed-plate or casing inclosing the looper-operating mechanism and the feed devices, (not shown;) but it will be understood that it is not desired to limit the invention in respect to the form of casing or the direction of the feed with respect to the longitudinal axis of said casing.

B represents the main shaft, actuated in any suitable manner and from which connections are made to the feeding mechanism. This main shaft has at its outer end a collar C, provided with an inclined projection D, provided with a socket or opening in which is secured the inner end of the looper rod, pin, or bar E. As shown in Figs. 2 and 3, this bar projects from its point of attachment to the projection D on an oblique line toward the plane of the longitudinal axis of the main shaft. At or near the point of coincidence of its axis with the axis of the main shaft it is bent and provided with a short portion F, extending parallel to the axis of the main shaft.

G represents a looper-carrier which is herein shown as secured on the transverse shaft H, mounted to slide and rock in bearings; but it will be understood that said shaft need not be continuous, but that the looper-carrier may have trunnions which slide and rock in these bearings on the machine-frame. This looper-carrier has rearwardly-extending wings, of which only one, I, is shown, which wings receive between them the rod E, which is connected to the carrier or to the transverse shaft, as shown.

In the rotation of the main shaft the looper rod or bar, by reason of its eccentric connection with the main shaft, gives an oscillating movement to the looper-carrier and, as herein shown, the loop-taking movement to the loopers K, set in sockets on the carrier and arranged at an angle respecting the line of feed, so that they move obliquely toward the needles to catch the loops.

To provide for the sidewise or needle-avoiding movement of the loopers, I have in the construction shown in Figs. 2 and 3 provided the looper-carriers with two wings L, arranged at an inclination to the longitudinal axis of the main shaft, and between these wings the part F of the looper-operating rod fits snugly,

so that in the rotation of the main shaft and the consequent rotation of the looper-rod in the oscillating movement of the transverse shaft a wedging action of the pin F between the wings L will be given, thus giving a sidewise or needle-avoiding movement to the looper-carrier and the loopers attached thereto. In these figures the central axis of the part F is shown as not coincident with the plane of the axis of the driving-shaft. Hence there will not only be in the oscillating movement of the transverse shaft a crowding of one of the flanges L against the pin F, but there will also be a positive action of the pin F against one or the other of said flanges accordingly as in its rotation it lies on one side or the other of the plane of the axis of the driving-shaft.

As hereinbefore stated, the pin or bar E may be bent at or near the point of coincidence of its axis with the axis of the main shaft. As herein shown, it is bent near the point of coincidence, so that the short straight portion has a lateral movement; but if it were bent directly at the point of coincidence said short portion F would in the rotation of the driving-shaft simply rotate on its axis and have no sidewise movement. Such a construction is shown and described in an application filed by me on the 5th day of December, 1896, Serial No. 614,573.

It will be understood that various modifications and changes in the construction of

this device may be made without departing from the spirit of my invention.

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

1. A sewing-machine comprising a main shaft, an inclined rod or pin eccentrically connected therewith and having a straight portion, a looper-carrier operatively connected to the inclined rod or pin for oscillating the looper-carrier and having an inclined way or groove between which the straight portion fits and upon the sides of which way or groove it bears to give the looper-carrier its sliding movements; substantially as described.

2. A sewing-machine comprising a driving-shaft, an inclined pin or rod eccentrically connected therewith and having at its outer end a straight portion arranged parallel with the axis of the main shaft, a looper-carrier mounted to slide and rock in fixed bearings and provided with an inclined way embracing the straight portion of the bar or rod, and having rearwardly-extending wings embracing the inclined portion of said bar or rod; substantially as described.

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

LANSING ONDERDONK.

Witnesses:

CHAS. L. STURTEVANT,
HARRY Y. DAVIS.