

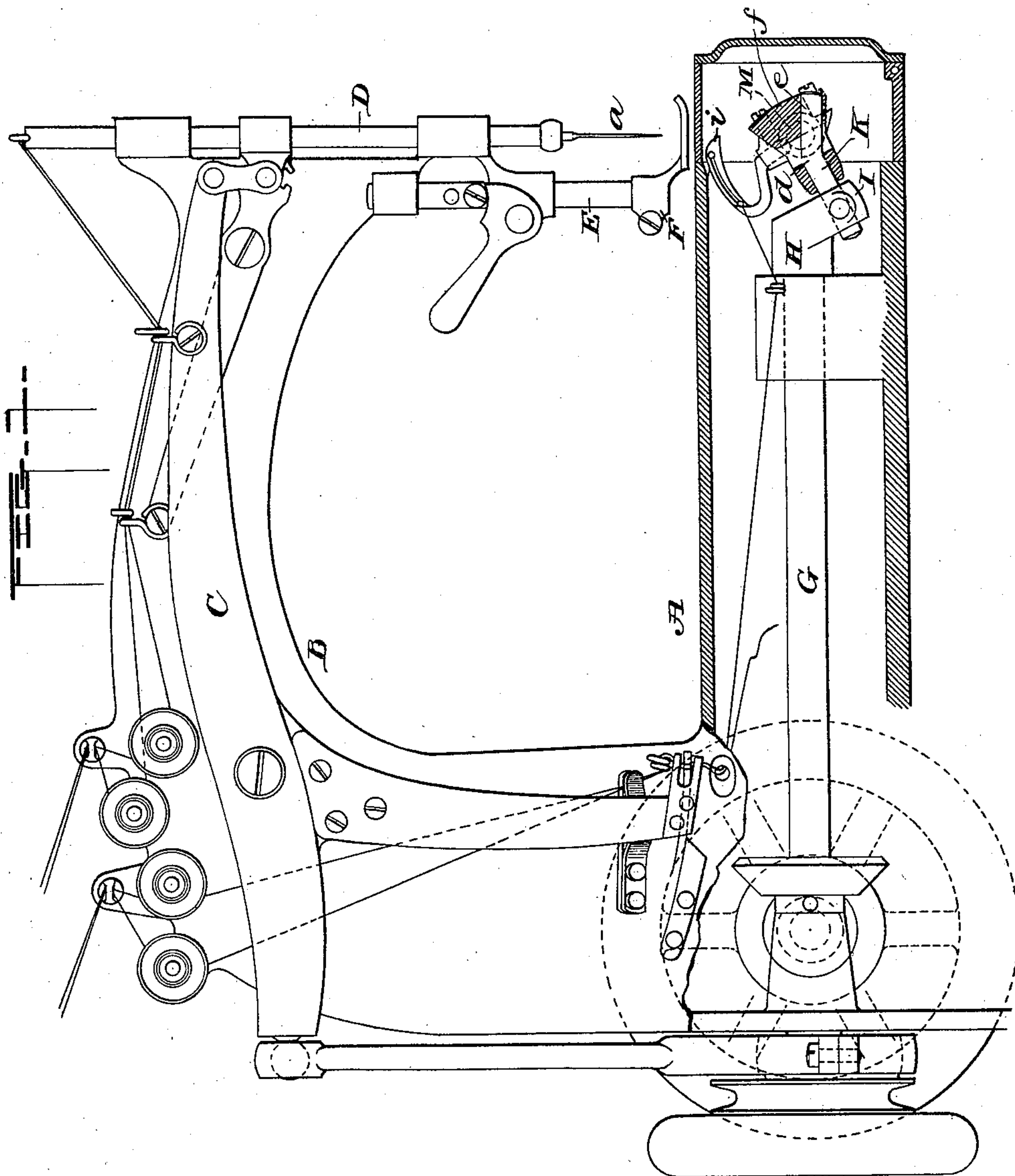
(No Model.)

2 Sheets—Sheet 1.

L. ONDERDONK.
LOOPER MECHANISM FOR SEWING MACHINES.

No. 591,540.

Patented Oct. 12, 1897.



Witnesses
Marie Dillon
Giles P. Moore

Inventor
Lausing Onderdonk
By Chas. S. Stewart
Attorney

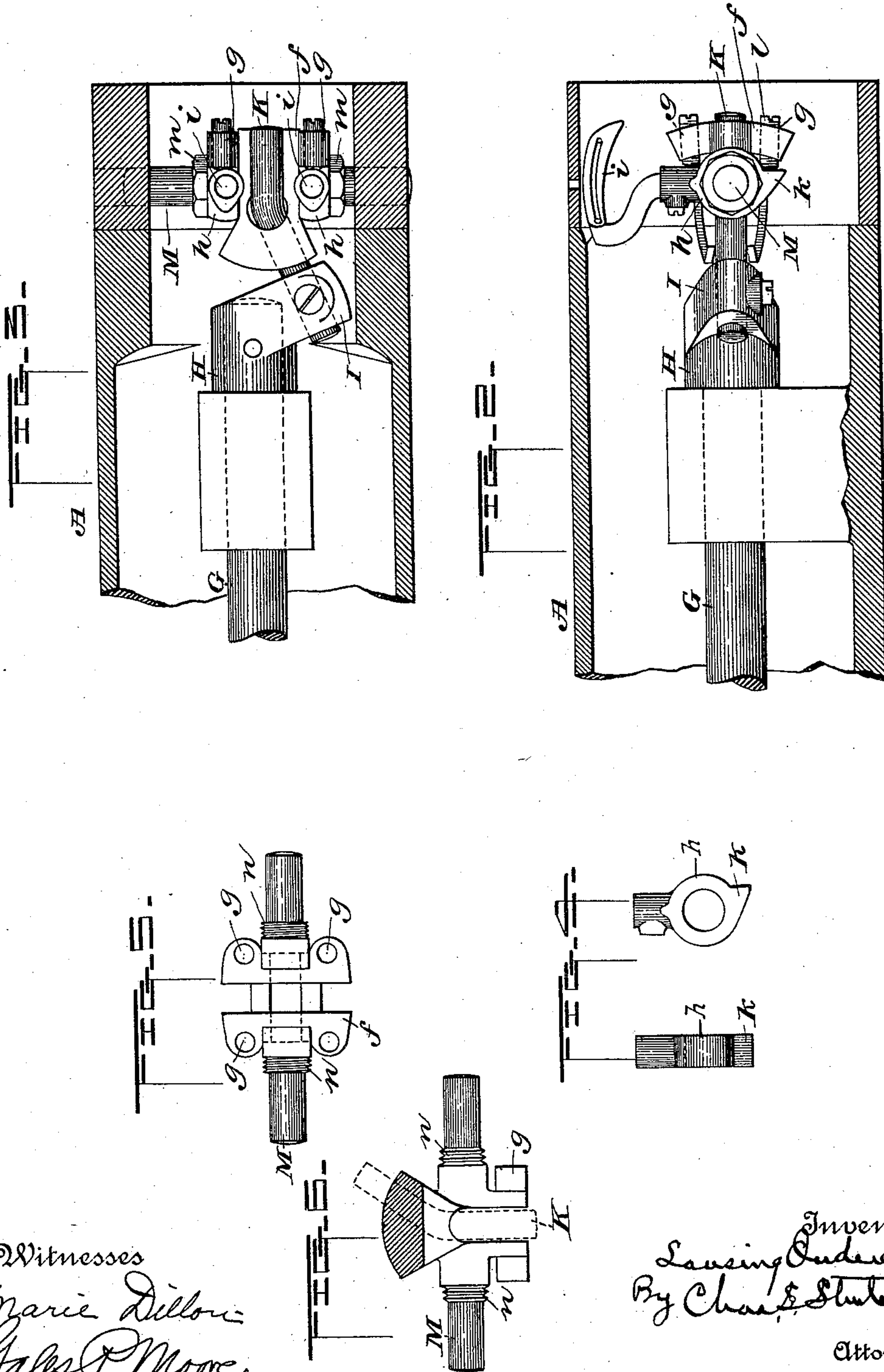
(No Model.)

2 Sheets—Sheet 2.

L. ONDERDONK.
LOOPER MECHANISM FOR SEWING MACHINES.

No. 591,540.

Patented Oct. 12, 1897.



Witnesses
Marie Dillon
Gales P. Moore.

Inventor
Lausing Onderdonk
By Chas. E. Shubert
Attorney

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. 591,540, dated October 12, 1897.

Application filed January 7, 1896. Serial No. 574,638. (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 and figures of reference marked thereon.

My invention relates to an improvement in sewing-machines, and particularly to an improved looper-operating mechanism designed to be used on chain-stitch machines where an under looper is employed which may or may not carry a thread.

The invention consists in the matters hereinafter described, and referred to in the appended claims.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of so much of a sewing-machine as is necessary to a complete understanding of my invention. Fig. 2 is an enlarged similar view of the end of a sewing-machine having my looper movement. Fig. 3 is a plan view of Fig. 2. Fig. 4 shows in detail portions of the looper adjusting and supporting mechanism. Fig. 5 is a side view of the looper-carrier sliding shaft; and Fig. 6, a top plan view, partly in section, of the same.

In the drawings, A represents the framework of a sewing-machine, having the goose-neck B, needle-arm C, needle-bar D, presser-bar E, presser-foot F, needle *a*, &c.

G represents the main or driving shaft of the machine, provided on its outer end with a collar H, having an inclined radial projection I, provided with an opening for the reception of the end of a pin or rod K, which is adjustable back and forth in the opening in the part I. At the point *d* the pin K is bent and from said point *d* to its forward end is provided with a straight portion *e*, arranged with its longitudinal axis parallel with the longitudinal axis of the driving-shaft. This bent pin K passes through and is operatively connected with a looper-carrier which has rearwardly-projecting flanges embracing said pin, and in the rotation of the main shaft a forward-and-backward and sidewise motion

is imparted to the said looper-carrier. As herein shown, the looper carrier or support includes a transverse shaft M, mounted to slide and rock in bearings in the machine-frame, and provided with central enlarged portions *ff*, between which the forward end of the bar or pin is embraced, said portions *ff* having screw-threaded openings *g g*. As herein shown, the rearwardly-extending flanges or wings 2 2 and the forwardly-extending flanges or lugs 3 3 are all a part of the looper carrier or support, and the rearward flanges 2 embrace between them the inclined portion of the pin or rod K, while the flanges 3 embrace between them the straight portion of the pin or rod K, and respectively on diametrically opposite sides thereof, so that the inclined portion of the pin, working between the flanges 2, will oscillate the looper-carrier, while the straight portion will give a bodily sliding movement to said carrier. Adjacent the portions *g g* the shaft M has screw-shoulders, upon which are placed collars *h*, having sockets for the reception of loopers *i*, and having a projecting knob or lug *k*, upon which one of the screws *l*, passing through the openings *g*, bears, while the other bears against the wall of the socket, and by tightening or loosening said screws the position of the collar *h* and the looper carried thereby is varied, thus varying the distance which the looper must travel before it catches the needle-loop. The collar is held from displacement longitudinally of the shaft by means of the nut *m*, fitting the screw-threaded portion *n* of the shoulders above referred to and securely clamping the collar in place.

For convenience I have herein termed the part upon which the looper-carrier is supported as a "shaft," although by reference to the drawings it will be seen that said part called a "shaft" M is not continuous and of the same diameter throughout, but forms in reality with the looper-carrier a sliding and oscillating frame.

It will be seen that by adjusting the inclined portion of the pin or bar K on the projection I the straight portion *e* will be moved nearer to or farther from the central longitudinal axis of the main shaft, thus varying the amount of sliding movement of the shaft

M, and consequently the amount of sidewise movement of the looper or loopers. By tightening and loosening the screws 7 as above described the looper-supporting collar is
 5 adjusted peripherally on said shaft M and the heretofore-mentioned adjustment of the looper with respect to the needle-thread loop accomplished. It will of course be understood that any number of loopers may be ar-
 10 ranged on the transverse shaft M, and while in Figs. 1 and 2 particularly the arrangement shown is applied to a cylindrical bed-plate machine in which the feed is lengthwise of the arm it is desired not to limit the invention
 15 to such application, as the same looper movement precisely may be used when the feed is transverse of the bed-plate or when the loopers are arranged with their longitudinal axes in line with and at right angles to or diagonal
 20 to the line of feed. Furthermore, as far as certain features are concerned I intend to make my claims broad enough to include the mechanism described whether the sliding or oscillating movement of the shaft M be the
 25 loop-taking movement or the needle-avoiding movement.

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

30 1. A sewing-machine comprising a driving-shaft, a looper-carrier having sliding and rocking movement, and provided with rearwardly and forwardly extending wings, an inclined pin or rod mounted on the forward
 35 end of the driving-shaft and embraced by the rearwardly-extending wings and a member engaged by the forwardly-extending wings, substantially as described.

40 2. In a sewing-machine, a looper, a support therefor having rearwardly and forwardly extending wings and means for operating the same to give loop-taking, loop-leaving and needle-avoiding movements to the looper, said means comprising an inclined rod or pin
 45 embraced by the rearwardly-extending wings, a member engaged by the forwardly-extending wings and means for giving rotary movement to the inclined rod or pin, substantially as described.

50 3. A looper-operating mechanism comprising a driving-shaft, a rigid rod or pin eccentrically connected at one end with said driving-shaft, and having its outer end bent to lie in a plane approximately parallel with the
 55 axis of the driving-shaft and a looper-carrier to which said rigid bent rod or pin is operatively connected, said looper-carrier being supported in fixed bearings and having oscillating and sliding movements at right an-
 60 gles to each other, the oscillating movement of the looper being imparted to it by means of the eccentric connection of the pin or rod with the driving-shaft, and the sliding side-
 65 wise movement of the looper being imparted to it by that portion of the pin or rod which is approximately parallel with the axis of the driving-shaft; substantially as described.

4. A looper-operating mechanism for sewing-machines comprising a driving-shaft, a looper-carrier having oppositely-extending
 70 journals mounted to slide and rock in fixed bearings, a rigid bar or rod having an inner portion inclined at an angle to the axis of the driving-shaft, and eccentrically connected thereto, and having an outer portion
 75 lying in a plane substantially parallel with the axis of the driving-shaft, and means for adjusting the outer portion with relation to the axis of the driving-shaft, said rigid bar or rod being operatively connected with the
 80 looper-carrier; substantially as described.

5. A looper-operating mechanism for sewing-machines comprising a driving-shaft having a collar thereon with an inclined projection, a rod or pin having an inclined portion
 85 adjustably secured to said projection and having an outer portion arranged with its axis substantially parallel with the axis of the driving-shaft, a looper-carrier mounted to slide and rock in fixed bearings to which
 90 carrier said rod or pin is operatively connected; substantially as described.

6. A looper-operating mechanism comprising a carrier having oppositely-extending
 95 journals mounted to slide and rock in fixed bearings, a rigid bent pin or rod operatively connected with the driving-shaft and operatively connected to the looper-carrier, with means for adjusting the bent pin to vary the
 100 amount of sliding movement of the looper-carrier journals; substantially as described.

7. A looper-operating mechanism comprising a driving-shaft, a looper-carrier having
 105 journals mounted to slide and rock in fixed bearings, a rigid bent pin eccentrically connected with the driving-shaft and adjustable axially with respect thereto, and operatively connected with the looper-carrier, and means for adjusting the looper-carrier circumferen-
 110 tially on its supporting-axis to bring it nearer to or farther from the needle; substantially as described.

8. A looper-operating mechanism for sewing-machines comprising a shaft mounted to
 115 slide and rock in fixed bearings on the machine-frame, said shaft being provided with a screw-threaded shoulder, a looper-carrier arranged on said shaft and a screw-threaded collar for holding said looper-carrier in position; substantially as described.
 120

9. A looper-operating mechanism comprising a shaft having projecting portions with
 125 screw-threaded openings therein, a looper-carrier on said shaft, said looper-carrier being provided with projections and adjusting-screws passing through said projecting portions and bearing against the projections on the looper-carrier, whereby the latter is ad-
 130 justed radially with respect to the axis of the shaft; substantially as described.

10. A looper-operating mechanism for sewing-machines comprising a shaft mounted to
 slide and rock in fixed bearings on the machine-frame, a looper-carrier on said shaft

capable of circumferential movement around the same, and screws, one above and one below the central longitudinal axis of the shaft on which the carrier is supported said screws bearing on the carrier and means for supporting said screws; substantially as described.

11. A looper-operating mechanism comprising a sliding and rocking carrier, a driving-shaft, an inclined crank-pin eccentrically connected with the driving-shaft, and operatively engaging the carrier and means for adjusting said crank-pin in the direction of its length; substantially as described.

12. A sewing-machine comprising a bed-plate and a driving-shaft, a looper-carrier supporting a thread-carrying looper journaled in the forward end of the bed-plate, means on the forward end of the driving-shaft for oscillating the looper longitudinally and vibrating it laterally, said means comprising a crank-pin having an inclined portion engaging the looper-carrier and a substantially straight portion also engaging the looper-carrier, and means for actuating the driving-shaft substantially as described.

13. A sewing-machine comprising a bed-plate and a driving-shaft, a looper-carrier

supporting a thread-carrying looper journaled in the forward end of the bed-plate, means on the forward end of the driving-shaft for oscillating the looper longitudinally and vibrating it laterally, said means consisting of a crank-pin eccentrically connected with the driving-shaft and having an inclined portion engaging the looper-carrier and a substantially straight portion also engaging the looper-carrier, and means for actuating the driving-shaft; substantially as described.

14. A looper-operating mechanism for sewing-machines comprising a looper-carrier, a shaft to which the looper-carrier is attached having oppositely-extending pivot-points, and screws, one above and one below the central axis of the shaft, and means for supporting said screws adjacent the carrier to bear upon the same whereby it is adjusted, substantially as described.

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

LANSING ONDERDONK.

Witnesses:

CHAS. L. STURTEVANT,
HARRY Y. DAVIS.