

No. 721,080.

PATENTED FEB. 17, 1903.

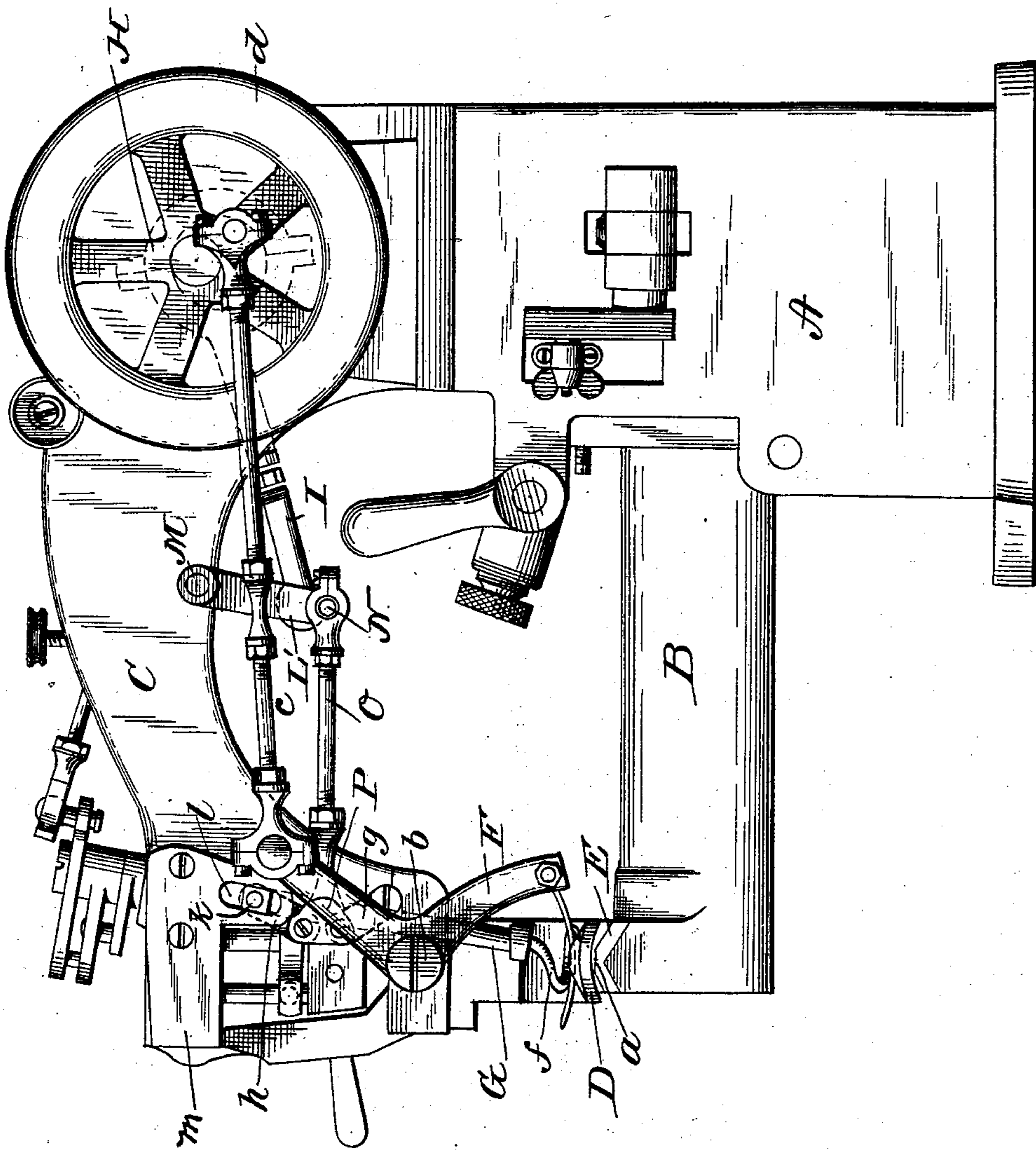
L. ONDERDONK.

# LOOPER MECHANISM FOR SEWING MACHINES.

APPLICATION FILED DEC. 22, 1899.

NO MODEL.

2 SHEETS--SHEET 1..



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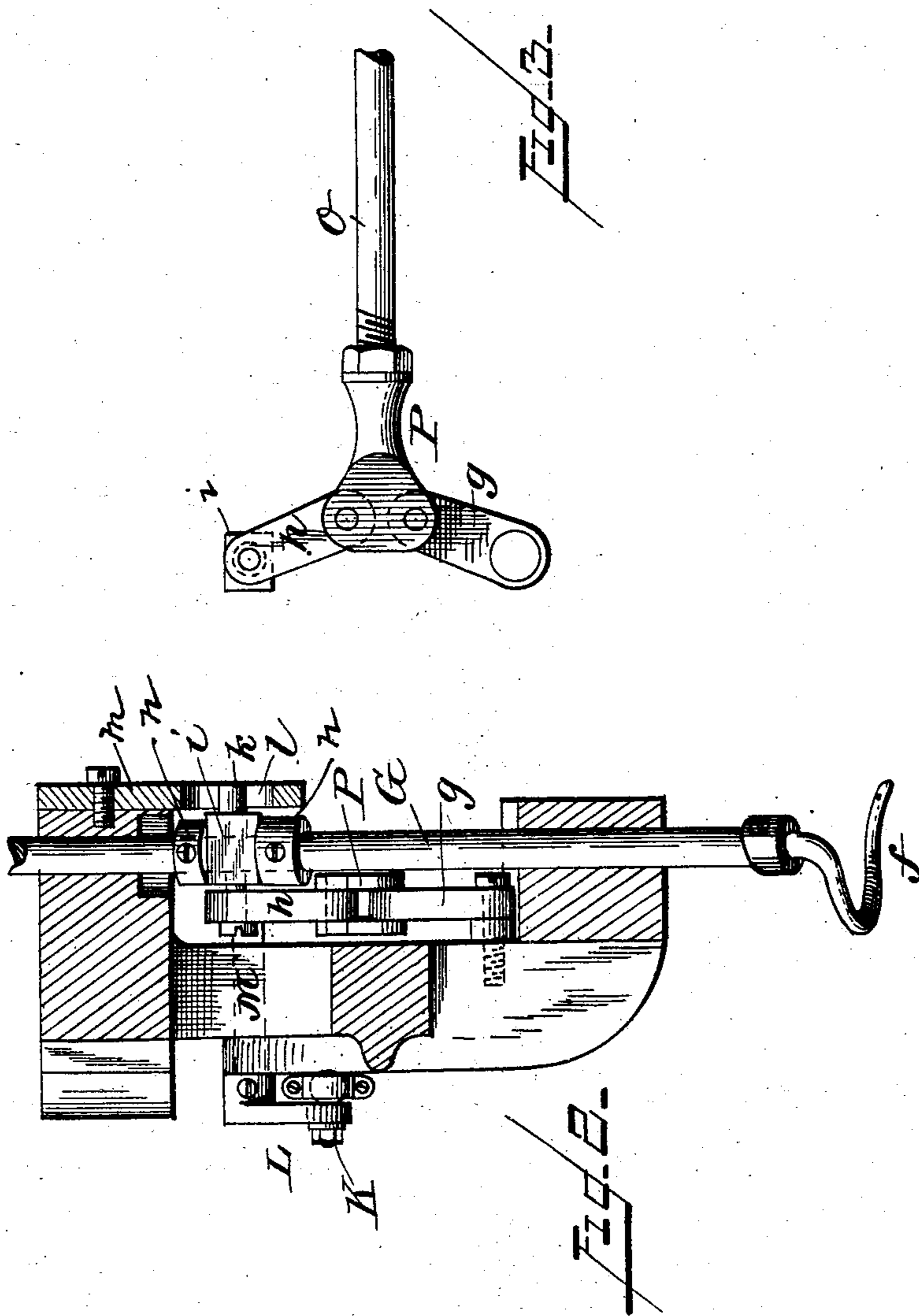
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# UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF NEW YORK, N. Y., ASSIGNOR TO THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## LOOPER MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 721,080, dated February 17, 1903.

Application filed December 22, 1899. Serial No. 741,227. (No model.)

*To all whom it may concern:*

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Looper Mechanism for 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 has special reference to a machine of the type illustrated in my application, Serial No. 711,025, filed March 25, 1899, the object of the present invention being to provide a novel mechanism for bodily raising and lowering the looper as it oscillates from one extremity of its movement to the other to take and leave the needle-loop.

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 front side elevation of a sewing-machine embodying my invention. Fig. 2 is a front end view of the same, and Fig. 3 is a detail view of the toggle-links for raising and lowering the looper-supporting shaft.

In the drawings, A is the machine frame or standard; B, the cylindrical bed-plate; C, the gooseneck; D, the presser-foot; E, the throat-plate, beveled and provided with the ridge *a* over which the material to be sewed is crimped.

F is the needle-lever pivoted to the head of the machine at *b*, operated by the pitman connection *c* from the wheel *d*, mounted on the main shaft. This needle-lever F carries at its lower end the curved needle *e*, which moves in a substantially horizontal plane back and forth across the line of the seam, engaging the crimped portion of the goods.

G is the looper-bar carrying on its lower end the looper *f*, which may or may not carry a thread. This looper-bar G is inclined from the perpendicular and has bearings in lugs on the machine-frame. It is oscillated to cause the looper to cooperate with the needle to form stitches, and the mechanism for os-

cillating the shaft or bar G is herein shown as similar to that of my application above referred to and comprises a pivoted angle-frame suitably connected with the upper end of the looper-shaft and having a free-joint connection with a pitman operated from the driving-shaft in a manner similar to that in which the pitman connection *c* is operated. This is shown in Fig. 1 and need not be further described. By arranging the looper on an inclined shaft and giving it the oscillation referred to it will cooperate with the needle to form stitches, taking the needle-loop at one point and then carrying its own thread (if a double-chain-stitch looper) or the needle-thread (if a single-chain-stitch looper) into position to allow the needle to pass through it. It is desirable, however, to give to the looper a bodily vertical movement as it is passing from one position to the other in order to lift it over seams or other obstructions, and the mechanism I have devised for this purpose will now be described, and it will be understood that so far as the mechanism for raising and lowering the looper-supporting shaft is concerned I do not wish to be limited to the special construction or inclination of the said looper-supporting bar.

Upon the driving-shaft adjacent the belt-wheel is an eccentric H, from which a connection-rod I runs to and embraces the stud K on the arm L of the rocking shaft M, passing through the gooseneck C, and upon the opposite side this shaft has an arm L', provided with a pivotal ball-stud N, embraced by the pitman O, carrying on its front end a head P, between the faces of which are respectively pivoted the upper and lower ends of the links *g h*. The link *h* at its lower end is pivoted to the head of the machine, and the link *g* at its upper end is pivoted to the block *i*, through which the looper-supporting shaft passes, said block having on its front end a projection *k*, guided in a slot *l* in the part *m*, secured to the machine-frame. The looper-shaft oscillates in the block *i*, but is prevented from vertical movement independent thereof by the collars *n n*. By this construction it will be seen that as the looper-supporting shaft oscillates the mechanism described

will cause the toggle-link *g h* to straighten and crook alternately, and thus raise and lower the looper bar or shaft.

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

1. In a sewing-machine having a reciprocating needle, a looper cooperating therewith to form stitches, said looper being supported on a bar or rod, with means for oscillating the latter on its longitudinal axis, and means for bodily reciprocating said looper-supporting bar or rod in the direction of its length, said means comprising toggle-links operatively connected with the looper bar or rod; substantially as described.

2. In a sewing-machine having a reciprocating needle, a looper cooperating therewith to form stitches, said looper being supported on a bar or rod, with means for oscillating the latter on its longitudinal axis, both looper and needle operating above the bed-plate of the machine, and means for bodily reciprocating said looper-supporting bar or rod in the direction of its length, said means comprising toggle-links operatively connected with the looper bar or rod; substantially as described.

3. In a sewing-machine having a reciprocating needle, a looper cooperating therewith to form stitches, said looper being supported on an approximately vertical bar or rod, and both looper and needle operating above the bed-plate of the machine, means for oscillating said looper-supporting bar or rod, and means independent of the looper for bodily raising and lowering said looper-supporting bar or rod, said means comprising toggle-links operatively connected with the looper bar or rod; substantially as described.

4. In a sewing-machine having a reciprocating needle, and a looper cooperating therewith to form stitches, means for oscillating said looper and means for bodily moving the looper, said means including a link pivoted at one end to the machine-frame, a second link pivoted at one end to a sliding block in which the looper-supporting shaft is journaled, said links being pivoted at their adjacent ends to a common operating connection; substantially as described.

5. In a sewing-machine having a reciprocating needle, a looper cooperating therewith to form stitches, said looper being supported on an approximately vertical bar or rod, and both looper and needle operating above the bed-plate of the machine, means attached to

the upper end of said looper-supporting bar or rod for oscillating it on its longitudinal axis, a block through which the looper-supporting bar or rod passes and in which it oscillates, and means for raising and lowering the block; substantially as described.

6. In a sewing-machine having a reciprocating needle, a looper cooperating therewith to form stitches, said looper being supported on an approximately vertical bar or rod, and both looper and needle operating above the bed-plate of the machine, means attached to the upper end of said looper-supporting bar or rod for oscillating it on its longitudinal axis, a block supported and guided upon the machine-frame, through which the looper-supporting bar or rod passes, and in which it oscillates, collars secured to the looper-supporting bar or rod upon opposite sides of the block, with means for raising and lowering the block, whereby when the latter is raised or lowered the looper-supporting bar or rod is raised or lowered; substantially as described.

7. In a sewing-machine having a needle reciprocating in a substantially horizontal plane, a looper mounted upon an inclined shaft and cooperating with said needle to form stitches, means for oscillating the looper-supporting shaft, and means for raising and lowering the looper-shaft as it oscillates, said means including, the toggle-links *g, h*, with suitable connections between them and the looper-shaft and between them and the driving-shaft; substantially as described.

8. In a sewing-machine having a needle reciprocating in a substantially horizontal plane, a looper mounted upon an inclined shaft and cooperating with said needle to form stitches, means for oscillating the looper-supporting shaft, and means for raising and lowering the looper-shaft as it oscillates, said means including, the toggle-links *g, h*, one pivoted at its lower end to the machine-frame, a block to which the upper end of the other link is pivoted, said block embracing the looper-shaft, a guide for said block, and a pitman driven from the main shaft and to which the links *g, h*, are pivoted; substantially as described.

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

LANSING ONDERDONK.

Witnesses:

F. A. NORTH,  
J. H. HOWELL.