

No. 720,733.

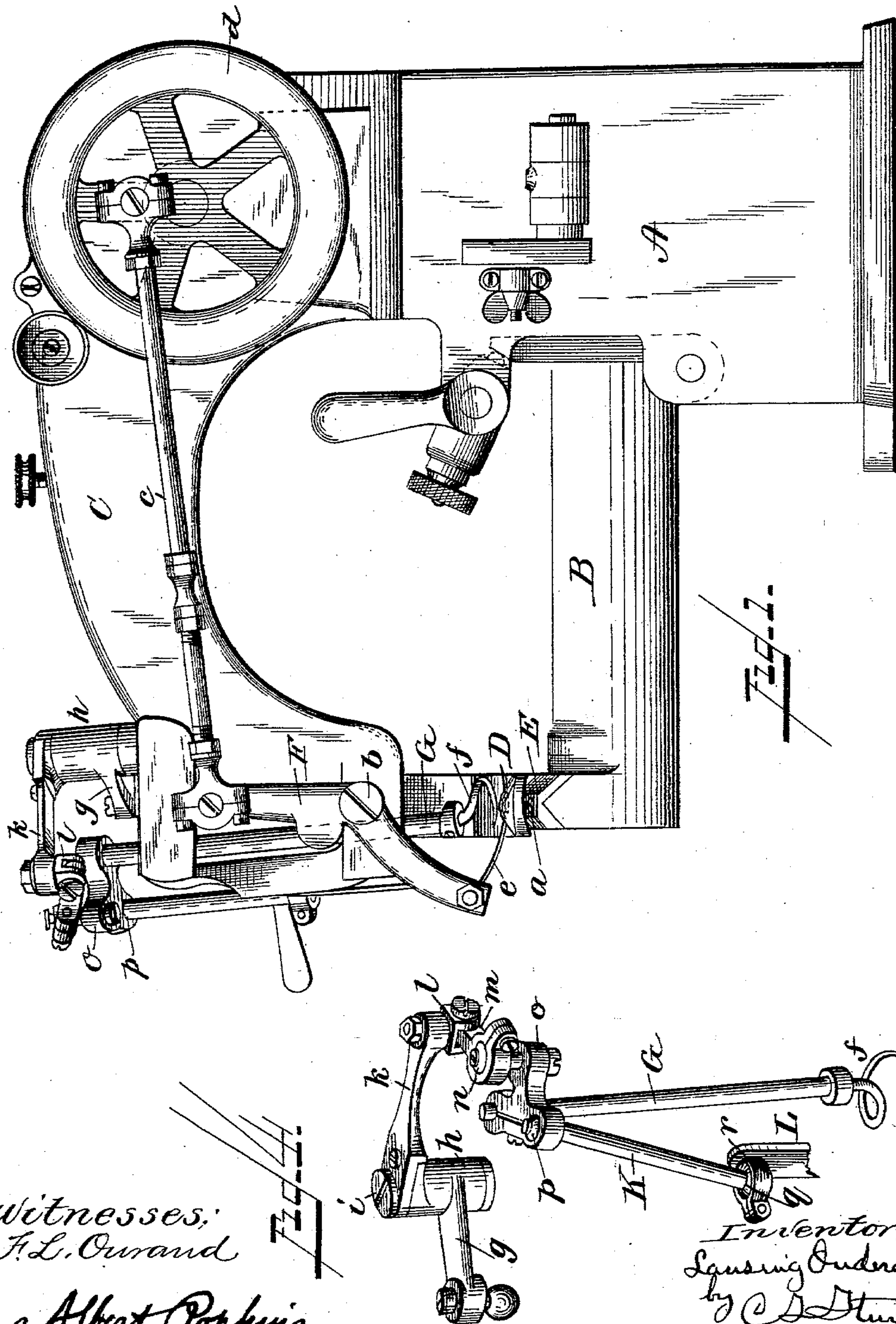
PATENTED FEB. 17, 1903.

L. ONDERDONK.
LOOPER MECHANISM FOR SEWING MACHINES.

APPLICATION FILED DEC. 22, 1899.

NO MODEL.

2 SHEETS—SHEET 1.



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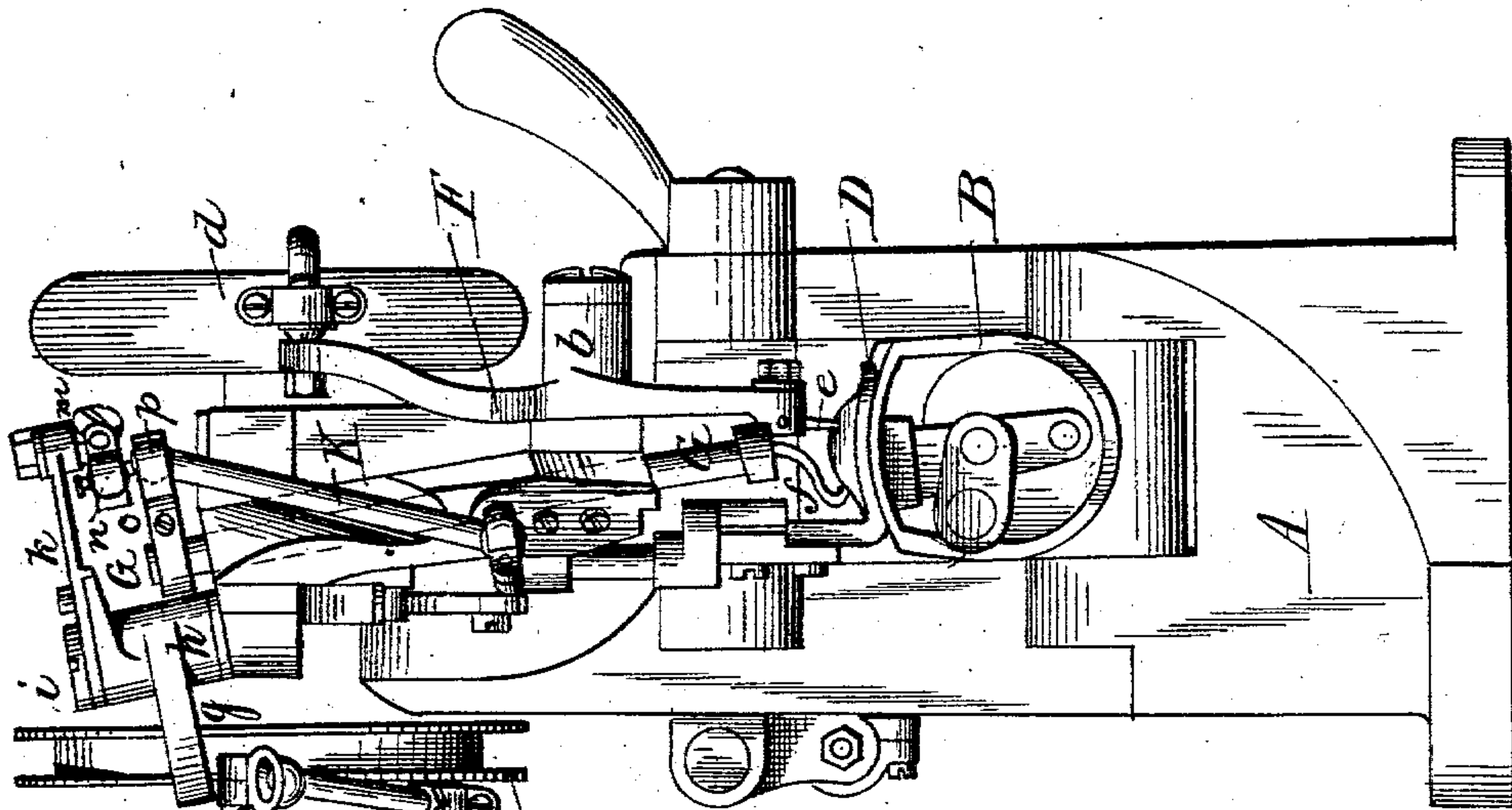


FIG. 3-

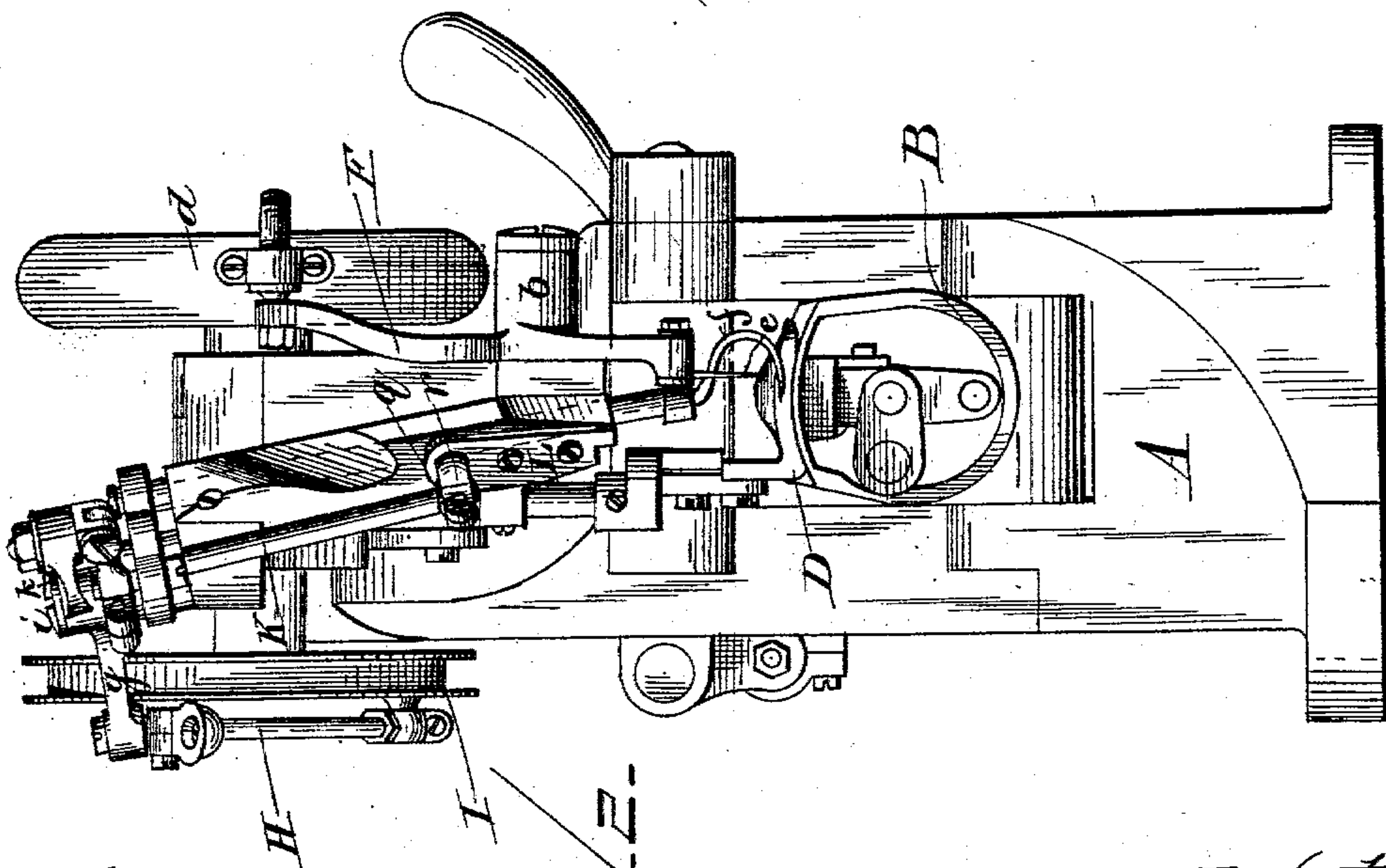


FIG. 2-

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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. 720,733, dated February 17, 1903.

Application filed December 22, 1899. Serial No. 741,229. (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. Figs. 2 and 3 are front end views of the machine, showing the looper-operating mechanism in its two opposite positions; and Fig. 4 is a detail view of the mechanism for raising and lowering the looper-bar.

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 herein shown as inclined from the perpendicular and has bearings in lugs on the machine-frame. This

looper-bar is oscillated to cause the looper to cooperate with the needle to form stitches. The mechanism for oscillating the looper bar or shaft includes the pitman H, operated from the belt-wheel I, this pitman having a ball-joint connection with the arm *g* on the sleeve *h*, pivoted on the stud *i*, secured to the head of the machine. A second arm *k*, projecting from the sleeve, pivotally embraces a forked stud *l*, between the forks of which is pivoted the part *m*, having a head embracing a ball-stud *n* on the angle-lever or crank *o*, rigidly clamped at one end to the looper-bar G. As the driving-shaft rotates, therefore, the looper-bar G oscillates to impart the proper movement to the looper. By arranging the looper in 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 for lifting the looper-bar is shown in detail in Fig. 4. The angle-lever or crank *o* is formed with a socket to receive the ball *p* on the upper end of the rod K, which at its lower end has a ball *q*, fitting in a socket *r* in the part L, secured to the head of the machine. It will be seen, therefore, that as the arm or rod K by reason of the movement of the angle-lever *o* gyrates on its pivot *q* it will force the said angle-lever or crank *o* up and down, thus raising and lowering the looper-bar G, the ball and other pivotal connections between the angle-lever *o* and the pitman H preventing any bind, and it will be seen that so far as the mechanism for raising and lowering the looper-supporting bar is concerned I do not wish to be limited to the special construction of such looper-supporting bar.

Various minor modifications and changes in the construction of the various parts may be made without departing from the spirit of my invention.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine having a suitable needle and looper, means for reciprocating the 5 needle and for oscillating the looper in a curved path in the direction of its length, and means for imparting to the looper as it oscillates a bodily movement on its axis of oscillation, said means including a gyratory rod 10 pivoted at one end to a stationary part of the machine-frame, and at its other end operatively connected to the looper; substantially as described.

2. In a sewing-machine having a reciprocating needle and a supporting bar or rod 15 carrying a looper, which coöperates with said needle to form stitches, means for oscillating the looper-supporting bar or rod about its longitudinal axis, and means whereby in the oscillatory movement of the looper-supporting bar or rod, a bodily vertical movement is 20 imparted to it, said means including a gyratory rod, pivoted at one end to a stationary part of the machine-frame and at its other end connected to the looper-supporting bar or rod; substantially as described.

3. In a sewing-machine having a reciprocating needle, and a looper mounted on an oscillating and sliding support, means for oscillating said looper-support, and means for 30 sliding it in its bearings comprising a gyratory rod, pivoted at one end to a stationary part of the machine-frame and at its other end in connection with the looper-support; substantially as described.

4. In a sewing-machine having a reciprocating needle, and a looper mounted upon an upright shaft, means for oscillating said shaft, and a gyratory rod pivoted at one end to a stationary part of the machine-frame and at 40 the other end having pivotal connection with the looper-shaft, whereby as the latter oscillates, the gyratory rod causes it to raise and lower; substantially as described.

5. In a sewing-machine having a reciprocating needle, and a looper mounted upon a shaft inclined from the vertical, means for oscillating said shaft, and a rod K universally pivoted at one end to the machine-frame, and at its opposite end universally pivoted to a 50 portion of the looper-shaft-driving mechanism; substantially as described.

6. In a blind-stitch sewing-machine having a needle reciprocating in a substantially horizontal plane, a looper coöperating therewith 55 to form stitches, an inclined shaft on which the looper is mounted, means for oscillating said shaft comprising an angle-lever *o* fixed to the looper-shaft, and having suitable connections to the driving-shaft and a rod as K 60 universally pivoted at one end to the angle-lever *o* and at the other end to a stationary part of the machine-frame; substantially as described.

In testimony whereof I affix my signature 65 in presence of two witnesses.

LANSING ONDERDONK.

Witnesses:

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