

(No. Model.)

L. ONDERDONK.

LOOPER ACTUATING MECHANISM FOR SEWING MACHINES.

No. 591,419.

Patented Oct. 12, 1897.

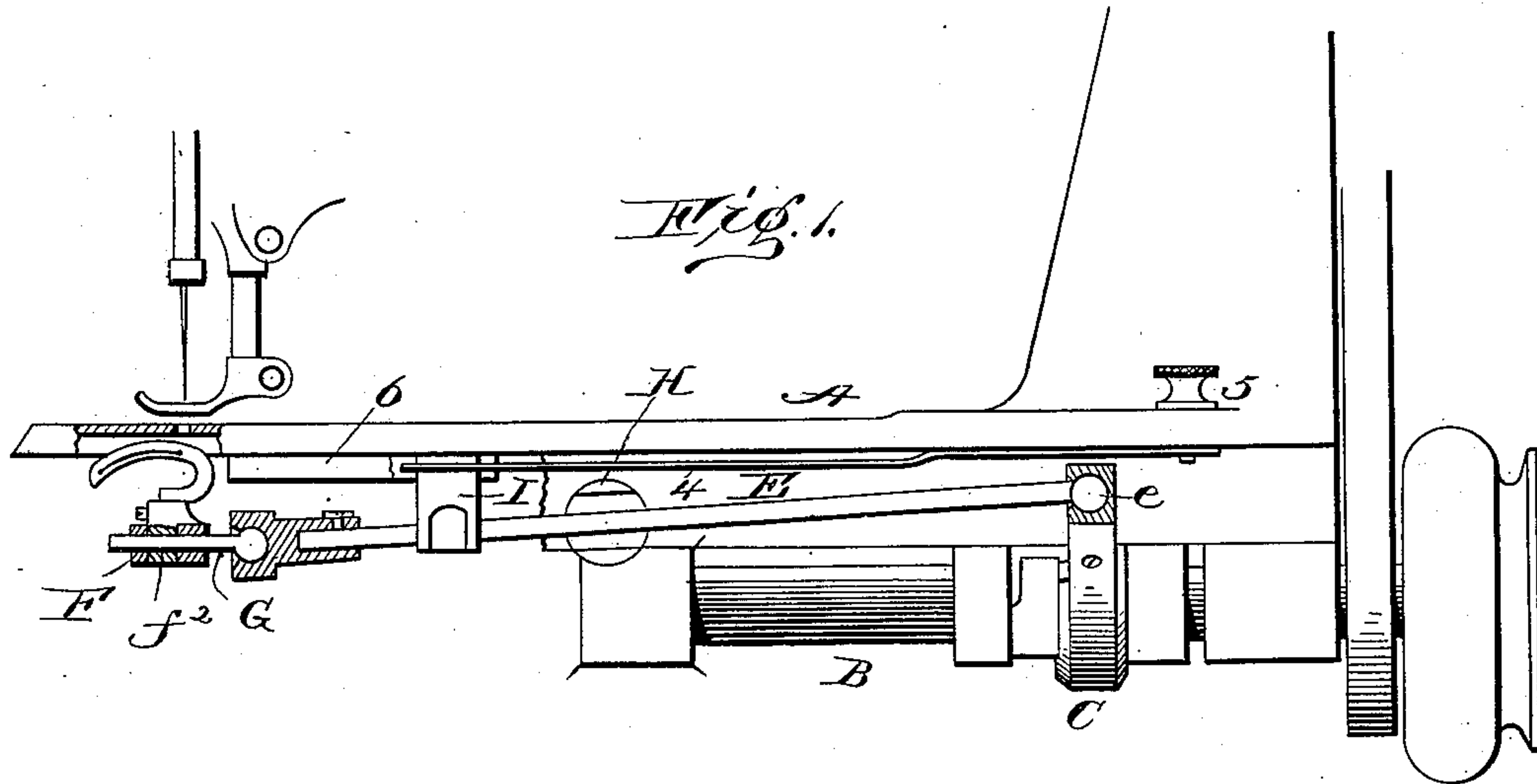


Fig. 2

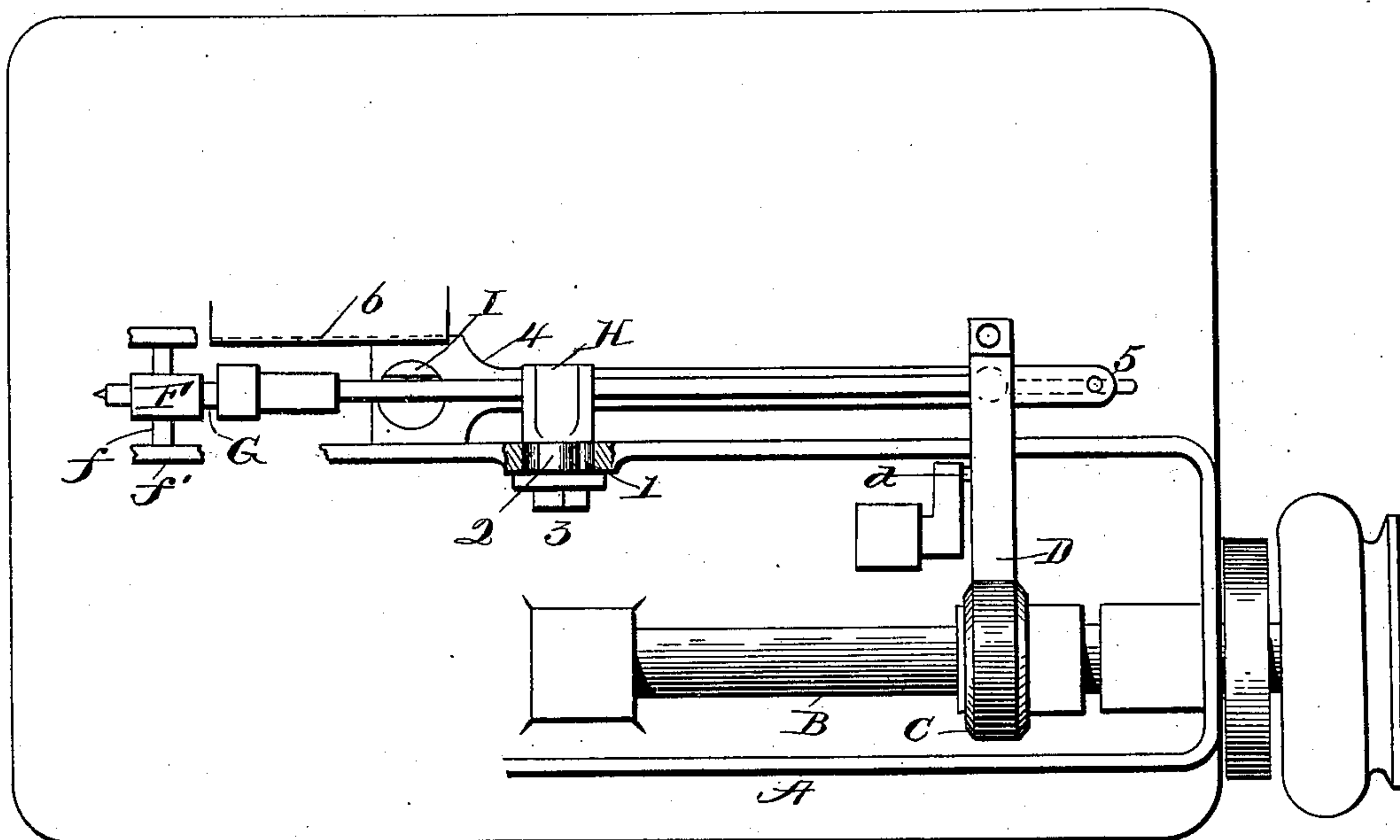
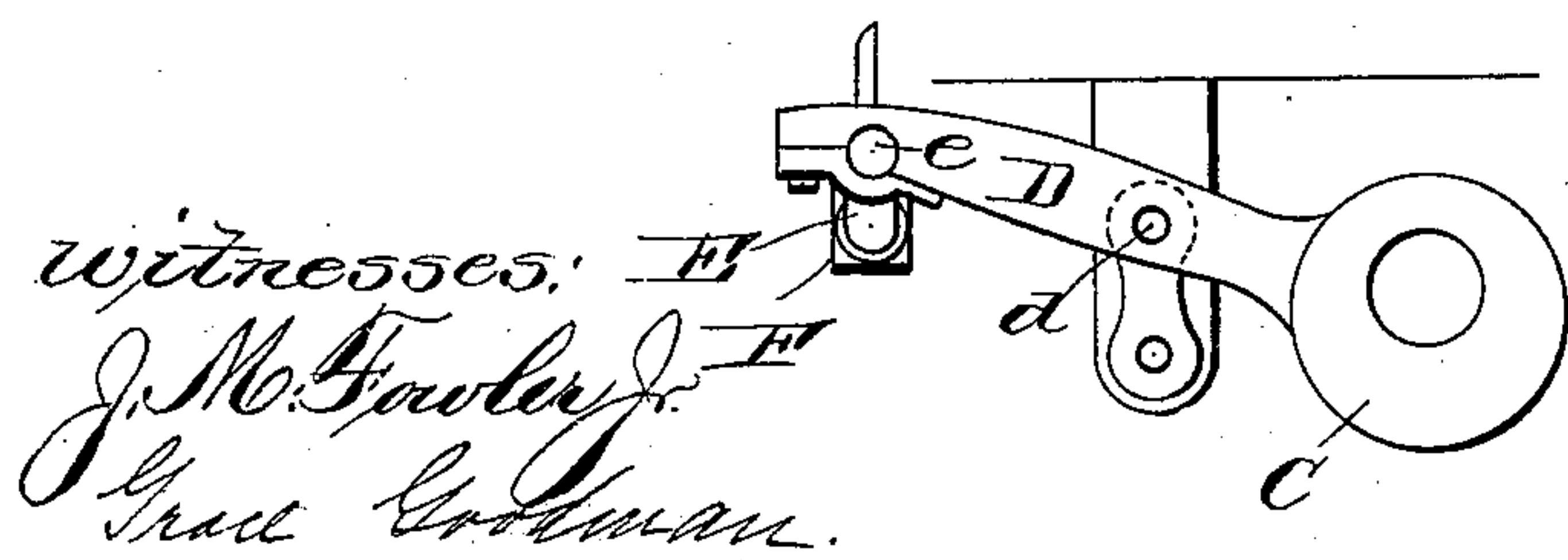


Fig. 3



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UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
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LOOPER-ACTUATING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 591,419, dated October 12, 1897.

Application filed September 1, 1896. Serial No. 604,512. (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.

This invention relates to sewing-machines, and more particularly to the looper mechanism thereof, its object being to provide an actuating mechanism for the looper which will be simple in structure, noiseless in operation, and effective to impart to the looper positive action in all its movements. Therefore the invention consists in the matters hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of a portion of a sewing-machine embodying my invention. Fig. 2 is a bottom plan view of the same, and Fig. 3 a detail of a portion thereof.

My invention is applicable to all machines which employ a looper coöperating with a needle for making either a chain-stitch or lock chain-stitch, but is particularly applicable to those machines wherein the looper has imparted to it four substantially distinct movements.

The letter A indicates the frame of the machine, in which is journaled the main actuating-shaft B, which in the instance shown is located below the bed-plate and carries an eccentric C, actuating a strap-lever D, pivoted at *d* to the bed-plate in any convenient manner.

It will be obvious that the main or actuating shaft in certain classes of machines may be in the overhanging arm of the frame, in which case the strap-lever will depend and be pivoted in the vertical arm portion of the frame.

E indicates the looper-actuating lever, and F the looper-carrier. The actuating-lever has a ball-and-socket connection *e* at one end with the strap-lever and its other end has connected thereto in any suitable manner an actuating-pin G, which engages and actuates the looper-carrier, as hereinafter described,

this actuating-pin being herein shown as mounted in the end of lever E by a ball-and-socket connection. The actuating-lever is provided between its ends with two independent fulcrums H I.

The fulcrum-pin H is the supporting-fulcrum and is horizontally disposed relative to the bed-plate and transversely of the actuating-lever. This fulcrum is made adjustable in its support in the frame of the machine by providing an elongated slot 1 in said frame to receive the reduced portion 2 of the fulcrum-pin, the outer portion of which is screw-threaded and provided with a clamping-nut 3 for securely holding the parts in position. The supporting end of the pin H is apertured for the passage and support of the actuating-lever. The adjustment of this fulcrum-pin will regulate the amount of forward-and-backward or longitudinal movement imparted to the looper.

The fulcrum-pin I is vertically disposed relative to the frame in which it is supported and, as herein shown, is adjustable longitudinally of the actuating-lever by means of a slide-bar 4, held in its adjusted position by means of a set-screw passing through the frame, as shown at 5. The pin I is guided and supported in the frame, as at 6, and is also apertured at its outer end for the passage of the actuating-lever. The adjustment of this fulcrum-pin regulates the amount of sidewise movement imparted to the looper.

The looper-carrier F consists of a frame having oppositely-extending journals *f*, rocking in the frame of the machine at *f'*, and having also a sliding lateral movement therein. Said carrier-frame is also provided with a transverse aperture for the passage of the actuating-pin G, the upper and lower walls of said aperture constituting substantially parallel wings, and suitably journaled between said wings in said aperture is a journal-post *f*², through the medium of which the carrier is given its sidewise movement and wear upon said carrier and its actuating-pin is avoided. Any number of loopers may be fixed in said carrier, and means may be provided for adjusting the same vertically and axially.

The operation of the parts will be obvious

upon an inspection of the drawings. The rotation of the main shaft causes a vertical and lateral movement to be imparted to the strap-lever, which in turn imparts a gyratory movement to the actuating-lever. This gyratory movement of the lever imparts the requisite rocking or forward-and-backward movements to the looper for entering and receding from the needle-loop and also imparts the bodily sidewise movements for avoiding the needle and aiding in opening the loop for the subsequent passage of the needle. By reason of the looper-carrier being journaled in fixed bearings the gyratory motion of the actuating-lever is transformed into four substantially distinct movements—two in the arc of a circle and two in a right line—the arc movements alternating with the right-line movements.

Having thus described my invention, what I claim is—

1. A looper mechanism for sewing-machines, comprising a looper-carrier having four substantially distinct movements, means for imparting such movements, including a gyratory lever, and means for adjusting the extent of each of the looper-carrier's movements, substantially as described.

2. A looper mechanism for sewing-machines, comprising a looper-carrier having four substantially distinct movements, means for imparting such movements, and means for adjusting the extent of each of such movements, substantially as described.

3. A looper mechanism for sewing-machines, comprising a gyratory lever and means for positively actuating the same in all its

movements, an independent looper-carrier journaled to rock and slide in fixed bearings and operative connections between the lever and carrier, whereby the gyratory movement of the lever is transformed into four substantially independent and positive movements of the looper-carrier.

4. A looper-operating mechanism for sewing-machines comprising a gyratory lever and means for actuating the same, a looper-carrier journaled to rock and slide in fixed bearings and an independent actuating-pin connected to the gyratory lever and operatively engaging the looper-carrier.

5. A looper-operating mechanism for sewing-machines comprising a gyratory lever and means for actuating the same, a looper-carrier journaled to rock and slide in fixed bearings, an actuating pin or rod as G, mounted in a universal joint in said gyratory lever and operatively engaging the looper-carrier.

6. A looper mechanism for sewing-machines, comprising a gyratory lever, means for actuating the same, an independent looper-carrier journaled to rock and slide in fixed bearings, and operative connections between said lever and carrier, said lever being provided with means for adjusting the extent of the rocking and sliding movements given the looper-carrier, substantially as described.

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

LANSING ONDERDONK.

Witnesses:

A. H. HATCH,
A. L. COOMBS.