

(No Model.)

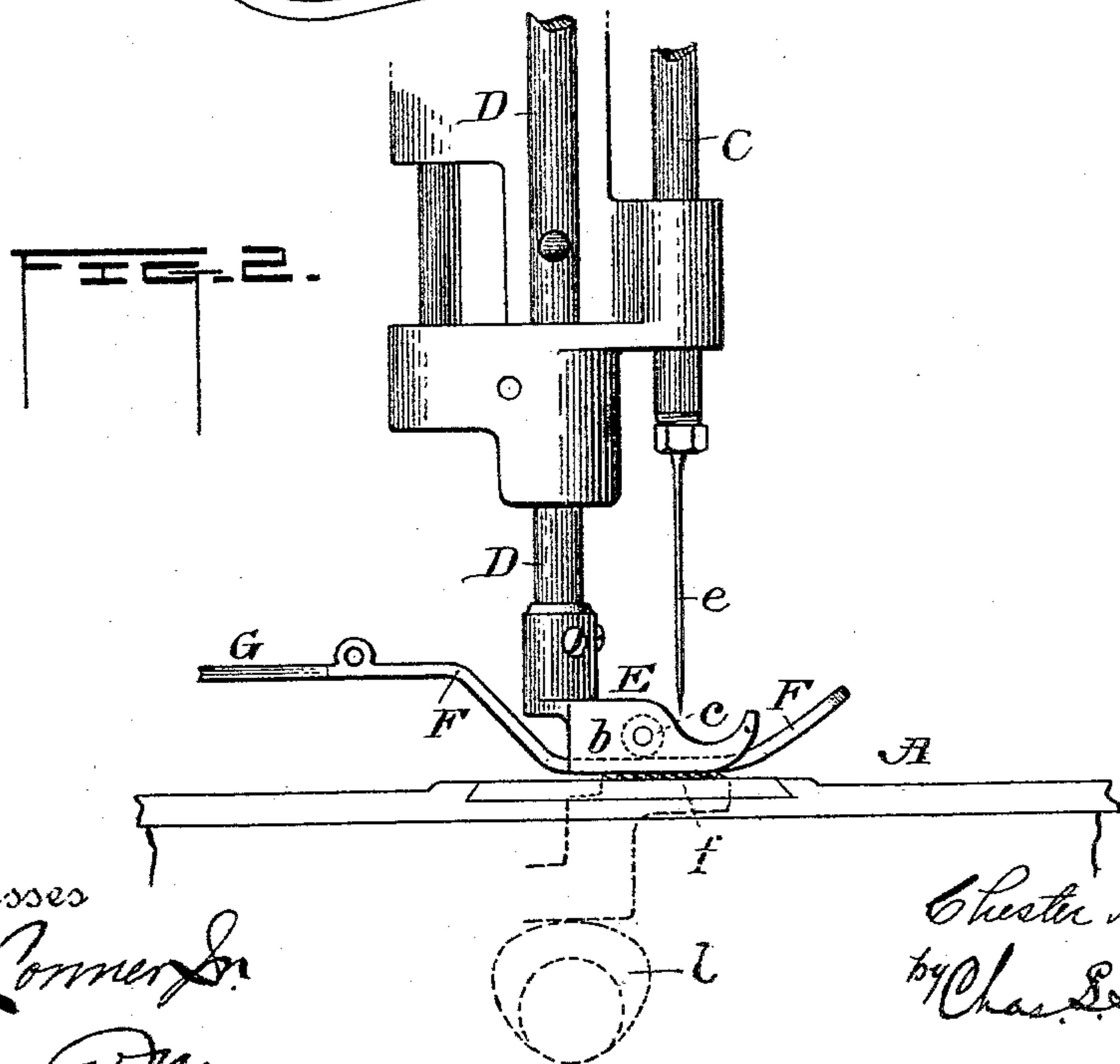
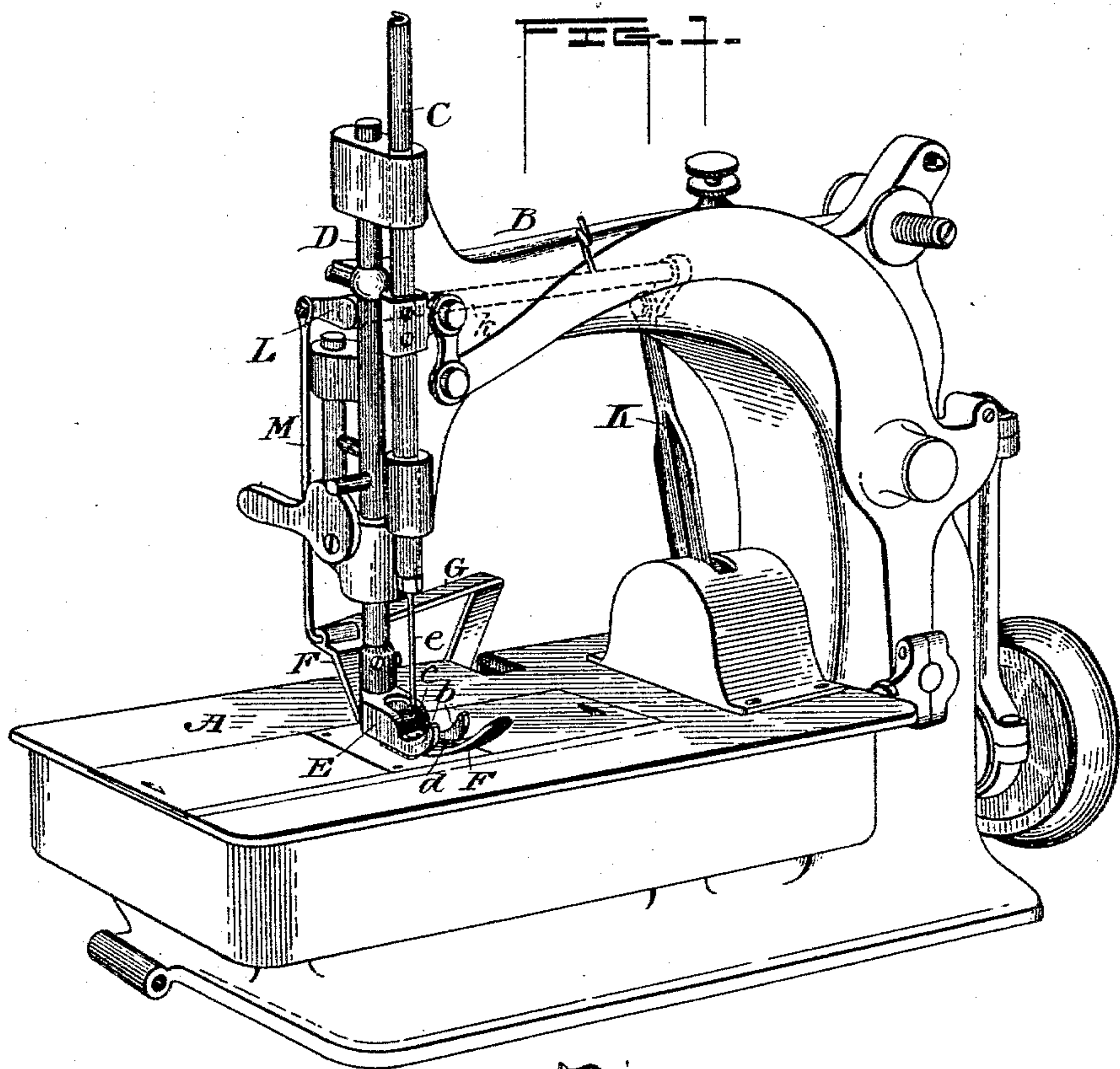
3 Sheets—Sheet 1.

C. McNEIL.

FEEDING MECHANISM FOR SEWING MACHINES.

No. 559,734.

Patented May 5, 1896.



Witnesses  
*L. A. Comer*  
*Giles G. Moore*

Inventor  
*Chester McNeil*  
by *Chas. S. Sturtevant*  
his Attorney

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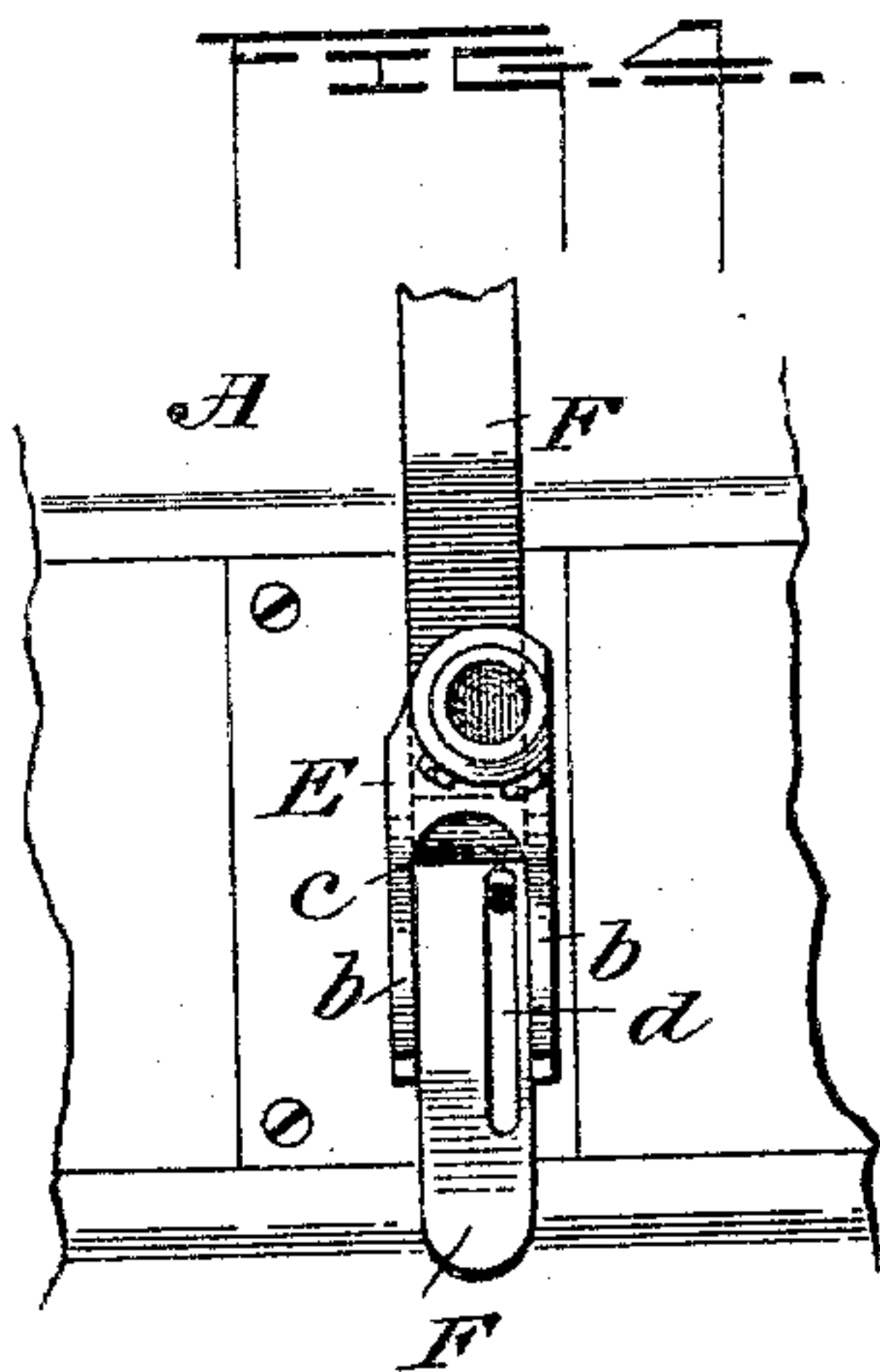
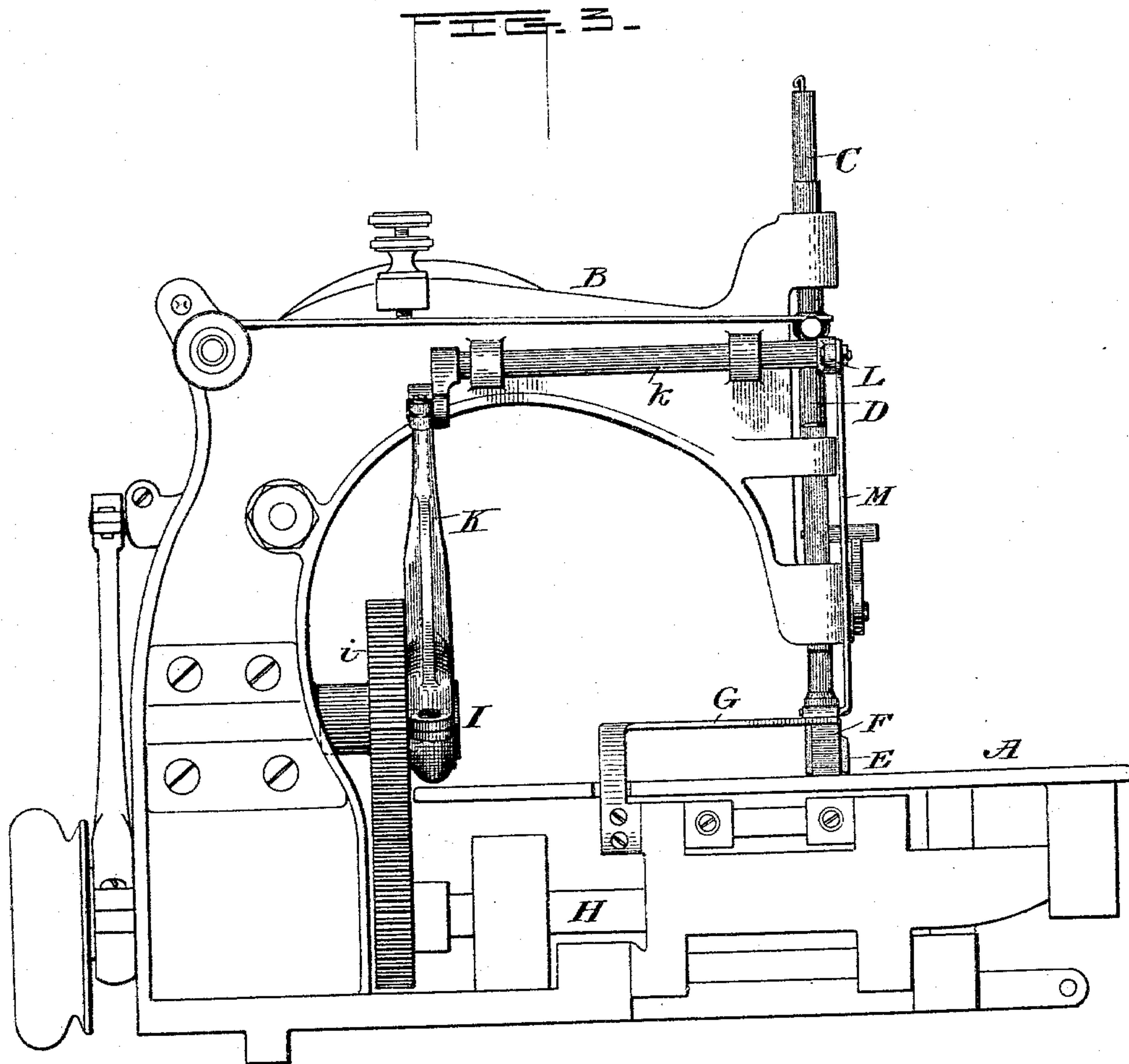
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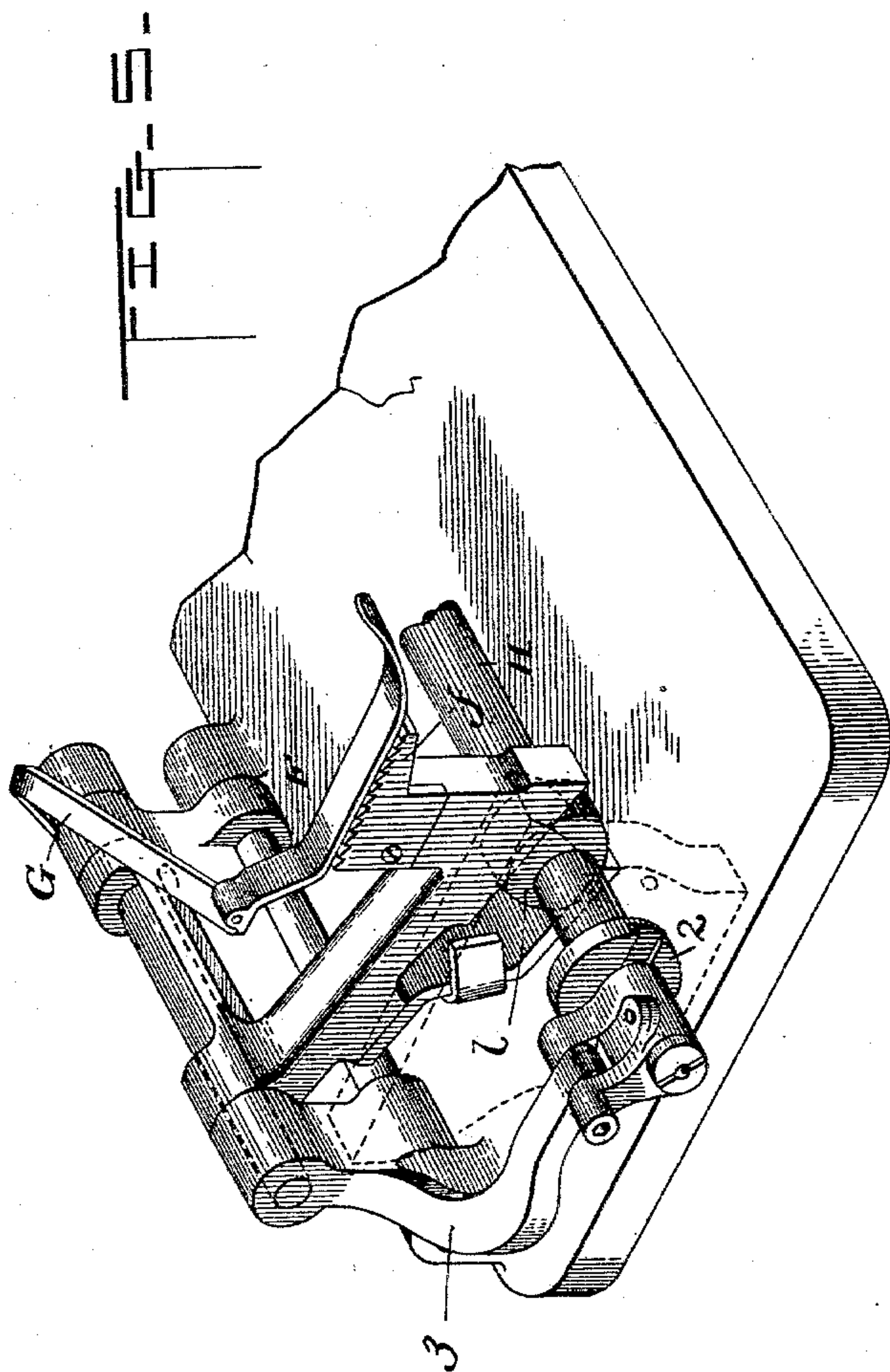
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Patented May 5, 1896.



Witnesses,  
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Attorney



# UNITED STATES PATENT OFFICE.

CHESTER McNEIL, OF ROGERS PARK, ILLINOIS, ASSIGNOR TO THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

## FEEDING MECHANISM FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 559,734, dated May 5, 1896.

Application filed April 12, 1893. Serial No. 470,095. (No model.)

*To all whom it may concern:*

Be it known that I, CHESTER McNEIL, a citizen of the United States, residing at Rogers Park, in the county of Cook and State of Illinois, 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 an improvement in sewing-machines, and particularly to the mechanism for feeding forward the material.

The object of the invention is to provide a device primarily for operation in connection with the ordinary feeding mechanism of a sewing-machine to act upon the top of the fabric so that in sewing more than one thickness of goods the top feed will press down upon the upper layer of fabric as the bottom is pressing on the lower and the two moving from the front to the rear simultaneously, thereby clamping the thicknesses firmly together and preventing slipping or feeding of the lower portion without the upper. It will be seen that this invention will be very useful when applied to goods having a comparatively smooth surface and being thereby liable to slip one upon the other. I have herein shown the bottom part of my improved attachment which bears upon the fabric as smooth and acting merely to clamp the thicknesses of material together while the feed is operating, but it will be understood that it may be serrated and act in the manner of the ordinary feed, it and the lower feed acting in unison, and for convenience I have referred to said upper part throughout the claims by the term "upper feed device."

It will be apparent to any one skilled in the art that this device being operated as it is from the usual feed-operating parts of the sewing-machine may be used as the sole feed for certain kinds of goods, the throat-plate in this instance being the opposing member, and it is not deemed necessary to specially illustrate the same herein.

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

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

Figure 1 is a perspective view of a sewing-machine to which my invention is applied, and Fig. 2 is a detail view in elevation. Fig. 3 is a rear view of a sewing-machine embodying my invention, and Fig. 4 a plan view of the foot. Fig. 5 is a view illustrating the mechanism for giving the rise and fall and also the feeding movement to the rocking frame which carries and connects the two feeding devices.

In the drawings, A represents the bed-plate of a sewing-machine, B the gooseneck, C the needle-bar, and D the presser-bar, all being of the well-known construction of "Union Special Machine."

E represents the presser-foot attached to the presser-foot bar in the ordinary way, but the central portion is entirely cut away, as shown at *a*, leaving only the sides *b*, which bear upon the fabric. Fitting in the space between the sides *b*, so as to slide therein, is a bar F, formed either with a flat or serrated surface and acting to bear upon the fabric and to partake of its movement, moving as the fabric feeds. This bar when not serrated acts in reality as a moving part of the presser-foot, holding the material tightly down upon the feed and assisting to feed it. When serrated, it would act as the feed alone. The movement of this bar is made easier by the insertion of a roller *c* between the sides of the presser-foot, bearing on said bar and preventing its binding. This bar is provided with the usual opening *d* for the passage of the needles *e* and has its forward end upturned like the toe of the ordinary presser-foot. The feeding-dogs are of ordinary construction.

The rear portion of the bar F is attached to an angle iron or rod G of the form shown, which is secured to the feed-rocker. This feed-rocker is constructed in the usual manner, as shown in Fig. 5, being the same as shown in patent to Muther and Dearborn of June 3, 1884, No. 299,568, and through the connecting-rod G transmits the forward and backward movement to the bar F corresponding to the forward and backward movements of the feed-dogs *f*. The upward and downward movement of the lower feed-dog is given by means of the cam 1 on the main shaft and



the forward and backward movements by means of the crank-disk 2 on the end of the main shaft and the arm 3 radially adjustable across the face of said disk and connected to the rocking frame. It is desirable to give the sliding bar F vertical movements corresponding to those of the feed-dogs, so that when the fabric is being fed forward the sliding bar will bear firmly upon the fabric, while in moving toward the front of the machine the pressure will be taken off. In order to accomplish this, I have provided a series of connections between the main shaft and the bar to give the latter the desired movements.

The main shaft H is provided with a gear which meshes with a second gear *i*, having an eccentric I attached to it. To this is secured a connecting-rod K, which imparts a rocking motion to a shaft *k*, journaled on the gooseneck of the machine. To the other end of the shaft is attached an arm L, which, when the rock-shaft is oscillated, has an up-and-down movement. To this arm is pivoted a connection M, which is attached to the sliding bar F. It will thus be seen that this bar F has a forward and back movement precisely the same as the feed and in unison therewith, and by the connection to the rock-shaft it will be raised from the fabric while it is moving toward the front of the machine and dropped down upon the feed-dog when it is feeding forward the material, these two movements taking place reversely to those of the feed-dog; while when operating in conjunction with the ordinary feeding-dogs *f* the sliding bar F is in effect a movable part of the presser-foot, since it acts as a clamp to hold the goods against the feed when moving from the front to the rear, and in moving from the rear to the front it is raised clear of the goods against the pressure of the presser-bar. Nevertheless it will be seen that it can be used as a feed alone. Moreover, the connection between the upper feed device and presser-foot affords a guide for the former and insures the vertical reciprocation of the latter with the former.

I claim—

1. In a sewing-machine the combination with upper and lower feed devices carried by a single frame, of mechanism for operating said frame whereby is imparted to both said devices their feeding movements, means for imparting to the lower feed device its vertical movement, and independent mechanism for imparting to the upper feed device its vertical movements reversely to the vertical movements of the lower feed device; substantially as described.

2. In a sewing-machine the combination with the presser-foot mechanism and upper and lower feed devices, of mechanism connecting the feed devices, comprising means for imparting thereto their longitudinal movements and to the lower feed device its vertical movement, and independent mechanism for imparting to the upper feed device and to the presser-foot vertical movements reversely to the vertical movements of the lower feed device; substantially as described.

3. In a sewing-machine the combination with upper and lower four-motion feed mechanisms of a presser-foot having a guide for the feed device of the upper mechanism and an antifriction device between the foot and feed device; substantially as described.

4. In a sewing-machine the combination with an upper and lower feed mechanism of a presser-foot having a guide for the feed device for the upper mechanism, and connected to said device to be actuated vertically thereby; substantially as described.

5. In a sewing-machine the combination with the presser-foot, of a four-motion feed mechanism, said foot having a guide for the feed device of said mechanism, and said foot and device being operatively connected for unitary vertical reciprocation; substantially as described.

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

CHESTER McNEIL.

Witnesses:

MORTON McNEIL,  
A. P. DUDERSTADT.