

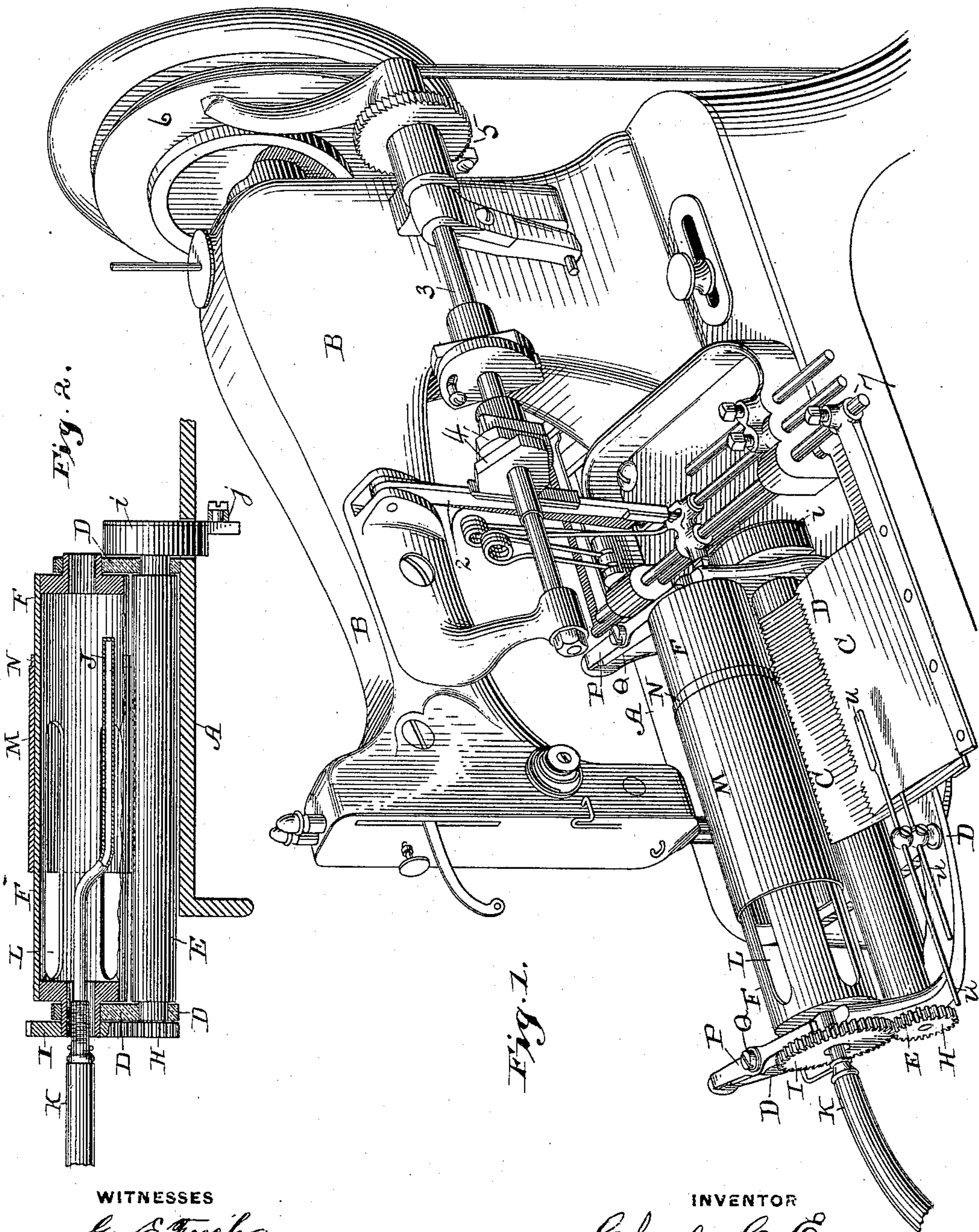
(No Model.)

4 Sheets—Sheet 1.

C. C. EMMONS.  
SEWING AND PLAITING MACHINE.

No. 540,209.

Patented May 28, 1895.



WITNESSES

*Geo. E. French.*

*Robt. A. Fitzgerald.*

INVENTOR

*Charles C. Emmons*  
*per*  
*Lehmann Pattison Nesbit*  
*Attys.*



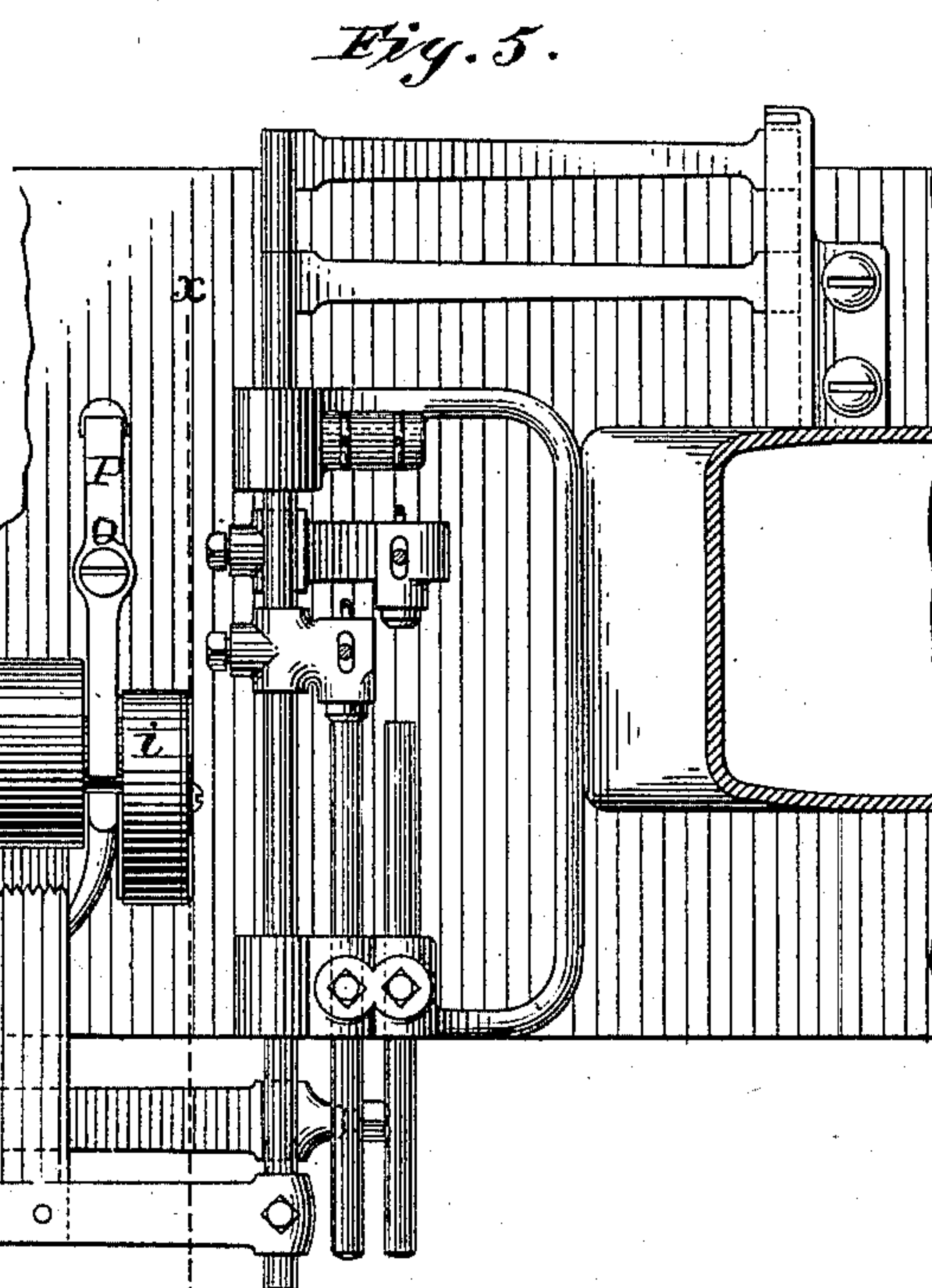
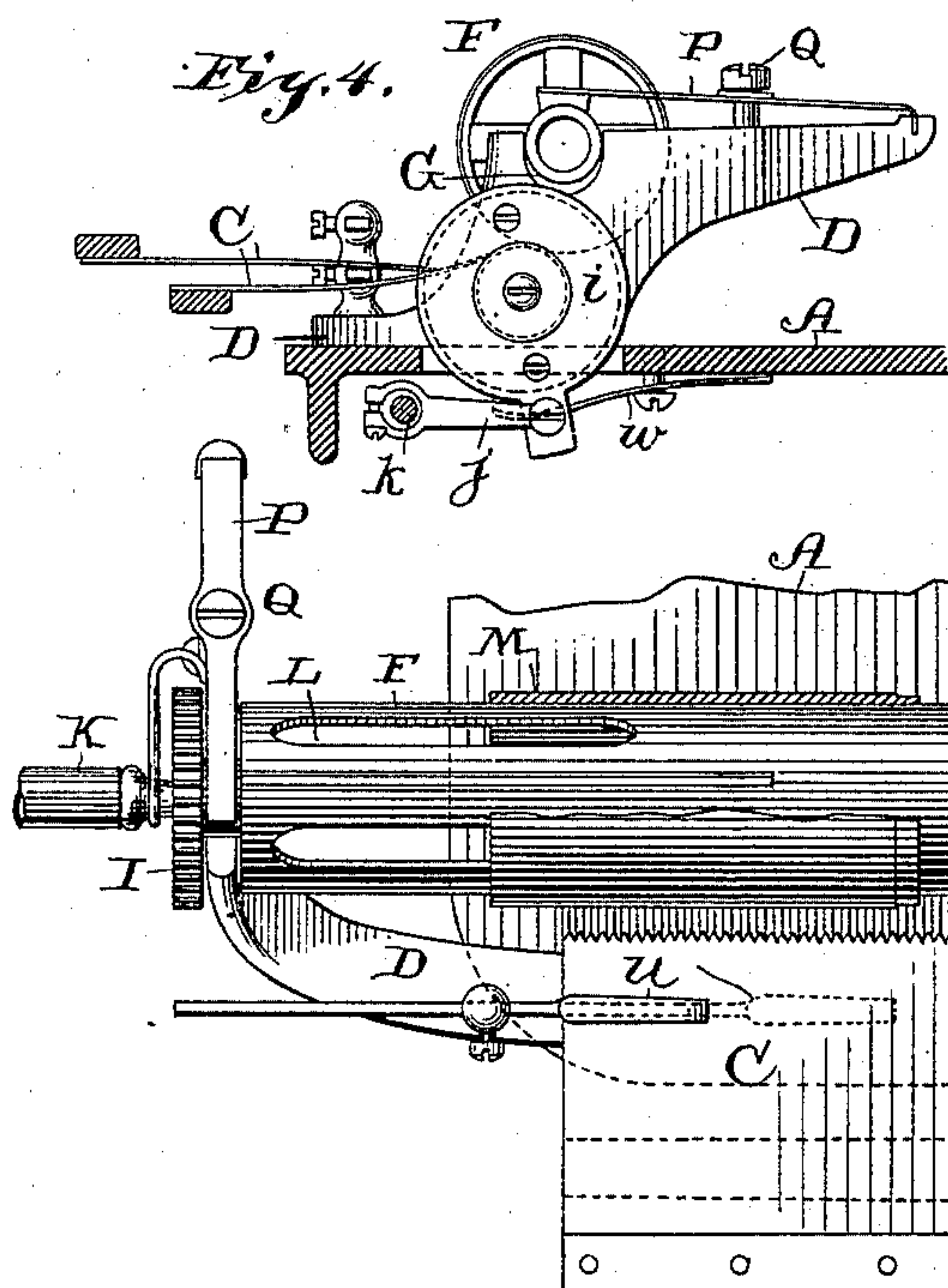
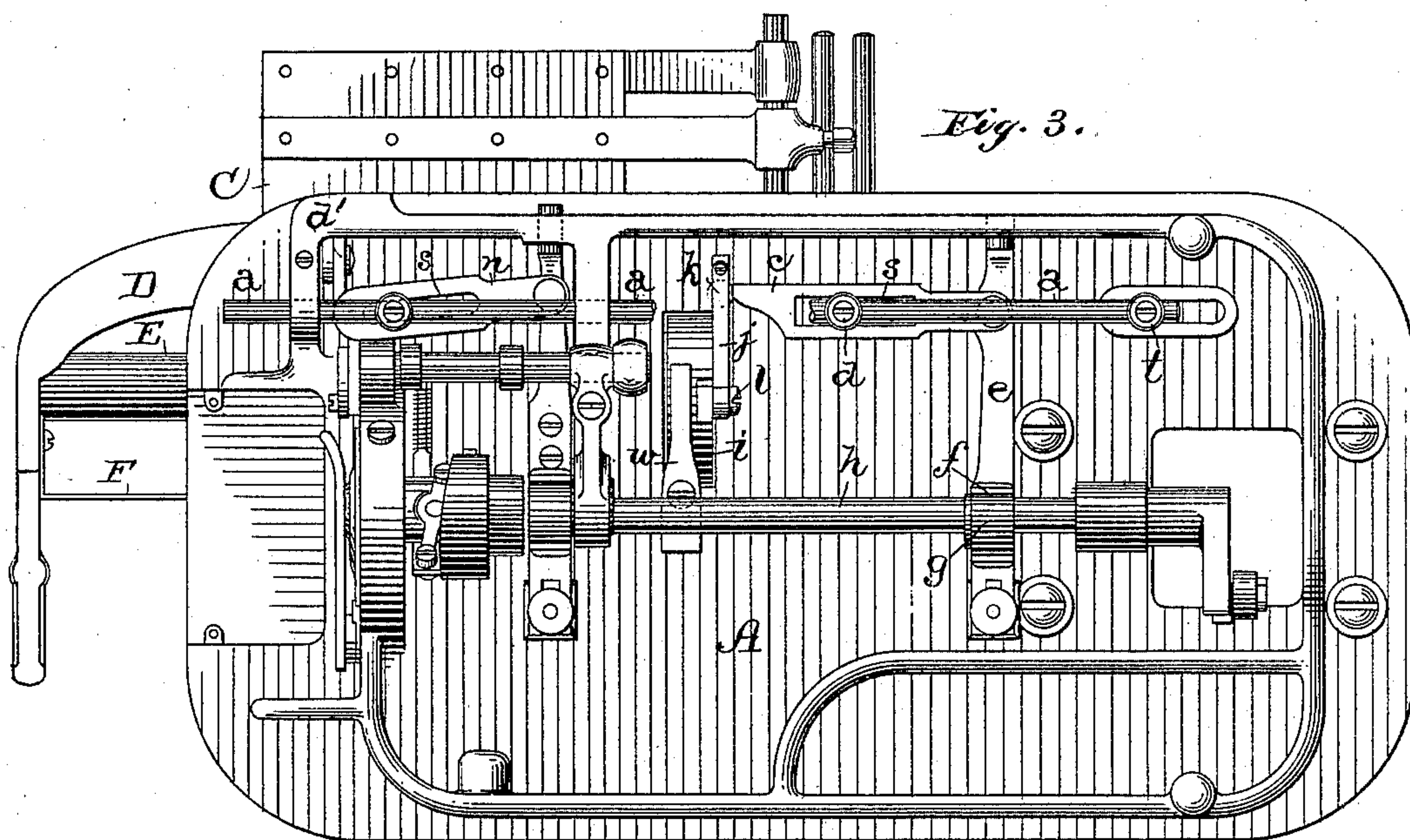
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C. C. EMMONS.  
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Patented May 28, 1895.



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(No Model.)

4 Sheets—Sheet 3.

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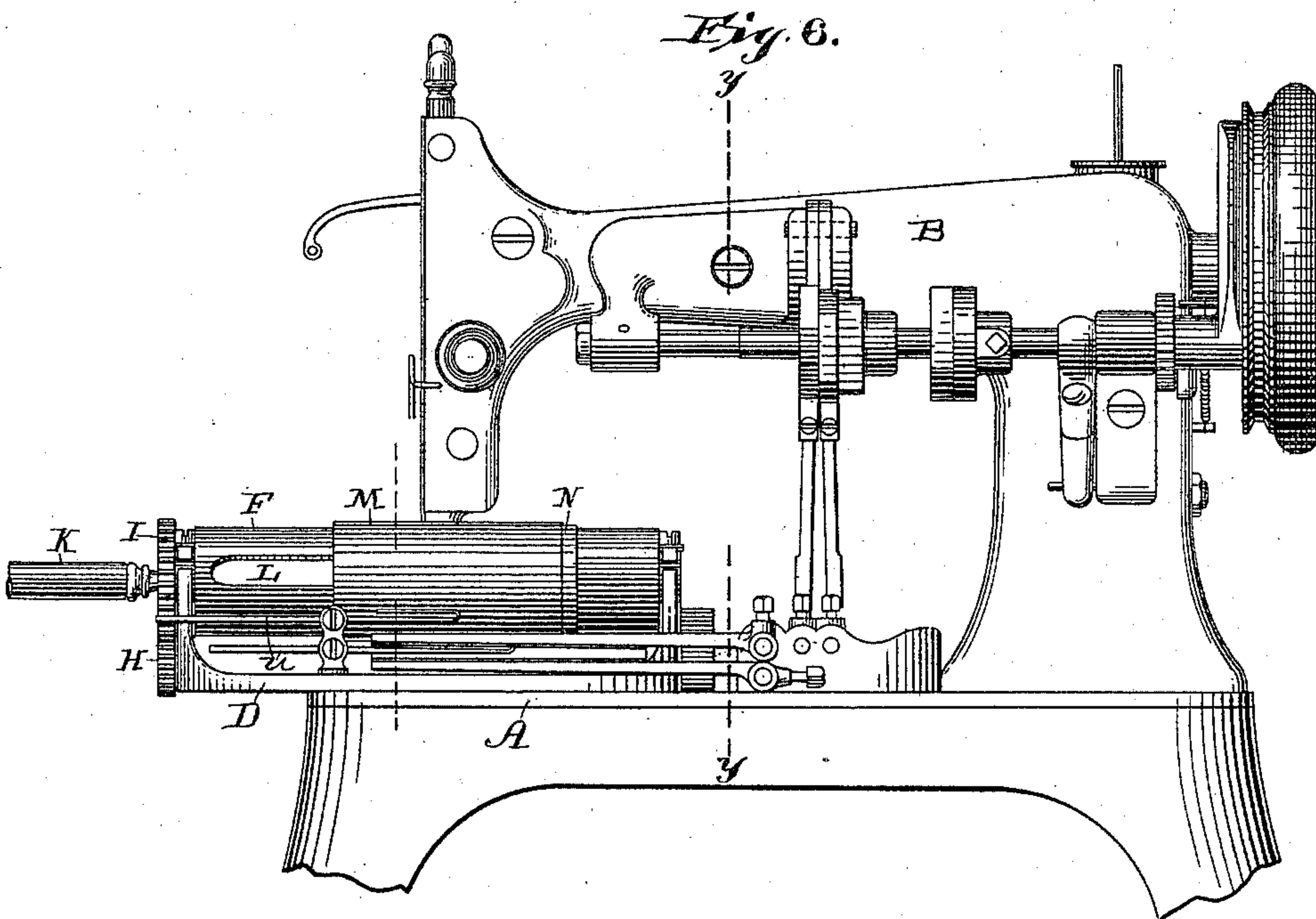
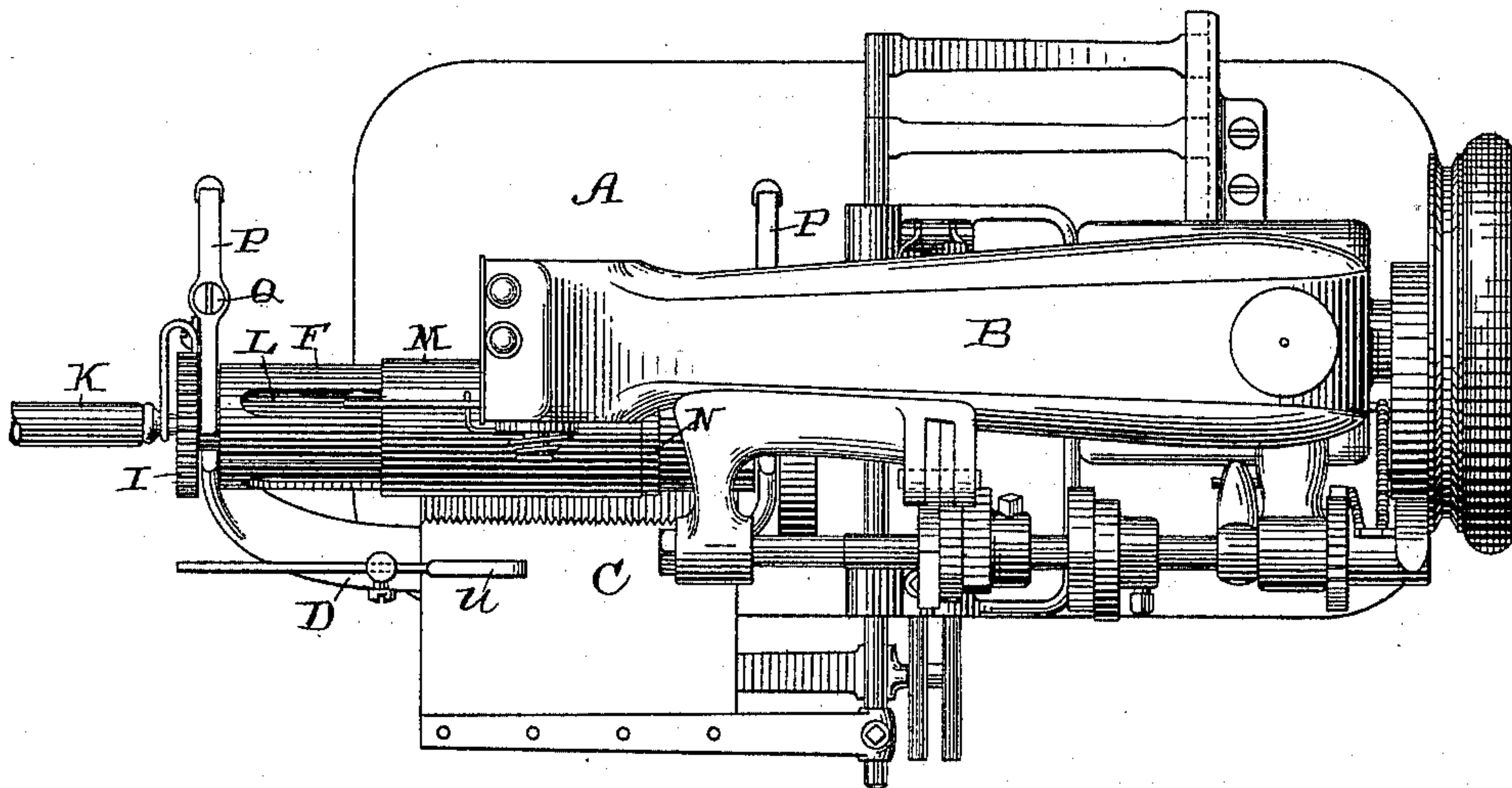


Fig. 7.



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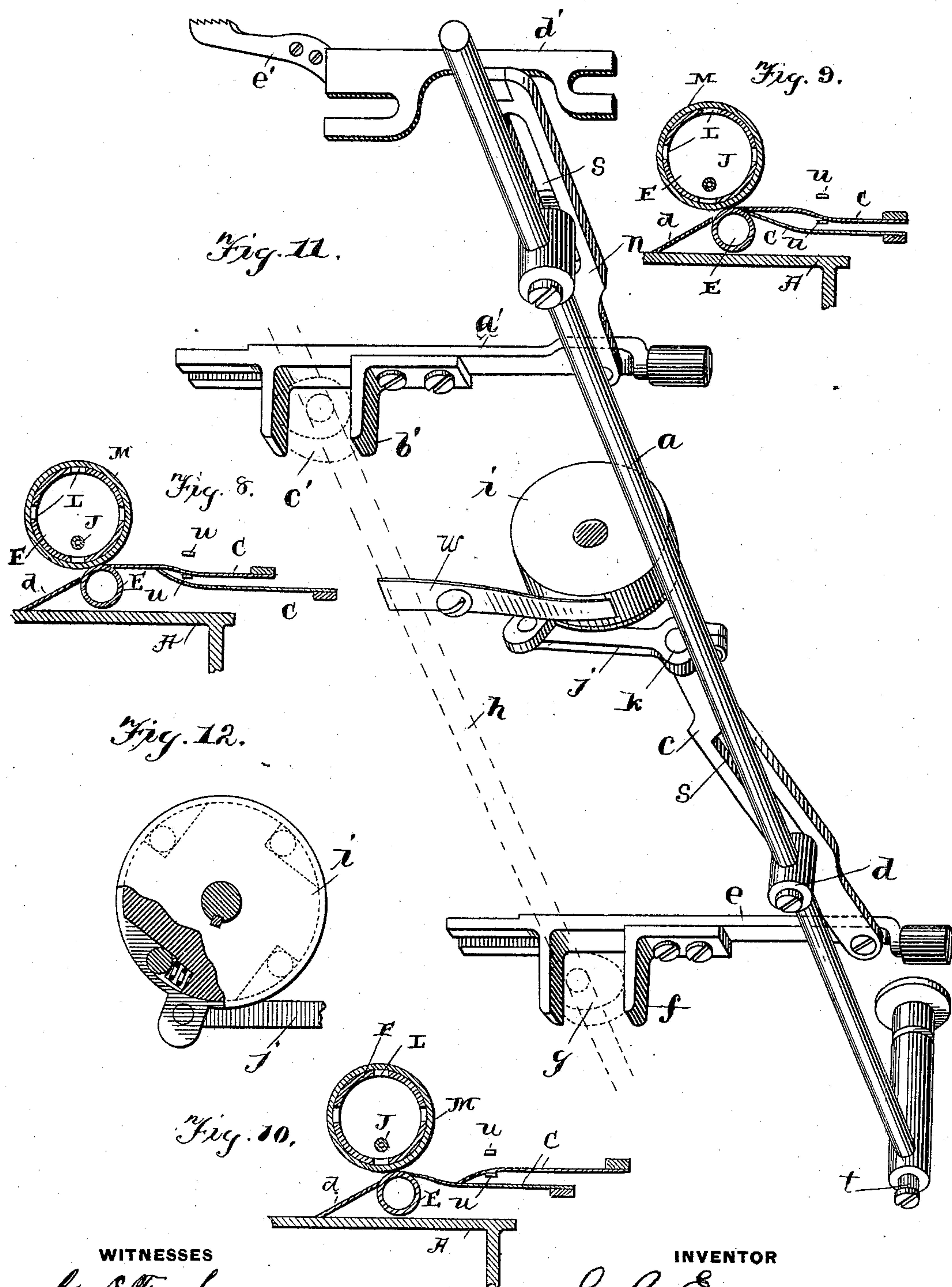
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4 Sheets—Sheet 4.

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# UNITED STATES PATENT OFFICE.

CHARLES C. EMMONS, OF PITTSBURG, PENNSYLVANIA.

## SEWING AND PLAITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 540,209, dated May 28, 1895.

Application filed September 12, 1892. Serial No. 445,711. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. EMMONS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Sewing and Plaiting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in sewing and plaiting machines; and it consists in the construction, combination and arrangement of parts which will be fully described hereinafter and particularly referred to in the claims.

The object of my invention is to add to a sewing machine, a plaiting and ironing attachment, both of which are operated by the sewing mechanism, as hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view of a plaiting-machine with my attachment applied thereto. Fig. 2 is a detached enlarged vertical longitudinal sectional view of the irons. Fig. 3 is an inverted plan view of the machine, showing the mechanism for revolving the irons in unison with the feed of the machine. Fig. 4 is a vertical sectional view taken on the dotted line *x x* of Fig. 5. Fig. 5 is a plan view of the machine with arm removed and a portion of the upper iron shown in section. Fig. 6 is a side elevation of a machine with my invention applied thereto. Fig. 7 is a plan view of the same. Figs. 8, 9, and 10 are sectional views of the irons and plaiter-blades, showing their relative positions to the irons when in the act of plaiting the goods, and feeding it in its plaited form to the irons. Fig. 11 is an inverted perspective view of the mechanism for operating the feed-dog and the clutch. Fig. 12 is a detached view, partly in section, of the clutch.

A indicates the bed plate and B the arm of a machine carrying a plaiting mechanism for operating the plaiter blades C, which mechanism in construction and operation is similar to that shown, described and claimed in a pending application filed January 13, 1892, bearing serial number 417,986. The principal

difference is that I here show only one set of plaiter blades and cams for operating them, while in the said pending application two sets of blades and cams for operating them are shown.

The mechanism for operating the plaiting blades being fully described in the above noted patent, it is only necessary to state in this case in a general way, that the blades are moved back and forth by means of levers 2 pivoted at their upper ends and having their lower ends engage rods 7 to which the blades are attached, the levers being actuated by cams 4 on shaft 3, which is in turn operated by a ratchet mechanism 5, actuated by a cam 6 of the needle bar operating shaft.

In my present invention, a U-shaped frame D is suitably secured to the bed plate A, and is provided with bearings for a lower hollow revolving roller or iron E, and with slots G above this roller in which an upper large hollow roller or iron is journaled. The lower iron is given a rotary movement by means of the following mechanism:—Reference is now made to the inverted view Fig. 3, in which *a*, is a fulcrum rod, shown broken away to prevent hiding a part of the mechanism to be now described. The feed driving shaft *h*, carries a cam *g*, with which a yoke *f*, upon a sliding bar *e*, engages, and by means of which the said bar *e* is reciprocated. A clutch feed lever *c* has one end pivotally connected with this sliding bar *e*, and is connected between its ends with a fulcrum screw or point *d*, which is adjustably clamped to the rod *a*. The opposite end of this feed lever *c* is connected by means of a ball joint *k*, with a pitman *j*, and the opposite end of this pitman is pivotally connected with a clutch *i*, that is carried by the shaft of the lower roller or iron E. This clutch *i* is of any ordinary construction, whereby when it is oscillated it gives to the shaft of the roller and thereby to the roller E an intermittent revolving movement. By means of the sliding bar *e*, and the feed lever *c* pivoted between its ends, the clutch is given an oscillating movement as will be clearly understood from Figs. 3 and 4. The upper and large iron F is given a corresponding intermittent revolving movement by means of the gears H and I, whereby they move together but in opposite directions, so that any goods



passed between them are fed to the stitching mechanism at the opposite side thereof.

Placed within the large upper iron or roller is a gas pipe J which is provided with sufficient openings to provide gas for burning and heating the irons, and this pipe J is connected with the gas pipes of a house by means of a flexible or other suitable tube K.

Made in the upper iron are several longitudinal openings L, which admit air for combustion, and allow the products of combustion to escape from the roller, and surrounding this roller and movable longitudinally thereon is a sleeve M. This sleeve moves longitudinally upon the iron to adapt it for goods of varying widths, and is provided at its inner edge with a reduced portion N, to allow for the additional thickness caused by a hem, so that the irons will engage the goods equally throughout their widths. Springs P have their outer ends secured to the ends of the U-shaped frame D, and their inner free ends to bear upon the journals of the upper large iron F, whereby it is held upon the goods, and yet yieldingly, to permit different thicknesses of goods to freely pass between them. Passing through the springs P and into the frame D are the regulating screws Q, by means of which the springs can be made to bear upon the upper roller with any desired degree of tension.

Referring again to the mechanism for operating the clutch *i*, I desire to call attention to the fact, that the feed lever *n*, for imparting a horizontal movement to the feed bar is connected with the longitudinally movable rod *a*, and that the lever *n* and the iron-feed-lever *c*, are each provided with longitudinal slots *s* to receive the fulcrum points thereof. One end of the lever *n*, is pivoted to the rod *a'*, which is reciprocated by the cam *c'*, upon the shaft *h*, engaging the yoke *b'*. The opposite end of this lever *n*, reciprocates a plate or feed bar *d'* horizontally, which carries a feed dog *e'*. Any ordinary means may be employed for giving the rise and fall to the feed bar. This rod *a* is held in the desired adjusted position by means of the clamping screw *t*.

From the above it will be understood, that the movement given to the clutch *i*, and the movement given to the stitching feed are regulated by the position of the fulcrum points of the said levers. It will also be seen that the position of these fulcrum points in the slots *s* of the said levers *n* and *c* is simultaneously and correspondingly regulated when the rod *a* is adjusted. The object of this is, that when the feed of the stitching mechanism is regulated, the feed of ironing rollers is correspondingly and simultaneously regulated,

whereby the rollers feed the goods at the same rate of speed as does the stitching feed. The movement of the rolls at their circumference is so timed as to move the same distance at each stitch as does the feed of the stitching mechanism, whereby they move in unison, and the crowding of the plaits avoided, or the dragging apart thereof prevented, which would result if there were any difference between the amount of movement of the periphery of the rolls and the stitching mechanism.

Two adjustable guides *u*, are supported by the frame D, one above and the other below the upper blade, through which can be passed the goods to be plaited, keeping the goods in position as set to the rolls and the needle of the machine.

*w* is a break which operates upon the clutch and keeps it from reversing its movement.

I desire to call attention to the fact, that the plaits formed by the blades C are fed to the ironing rollers instead of to the stitching mechanism as heretofore, and then delivered by the rollers to the presser foot and needle of the machine to be stitched, the said rollers thus being between the plaiting mechanism and the stitching mechanism.

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

1. The combination with a sewing machine, of a pair of rollers journaled above the bed and extending longitudinally thereof, a connection between the feed mechanism and said rollers, reciprocating plaiter rods supported above the bed at a point inside the inner ends of the rollers and extending transverse the bed of the machine, plaiter blade arms extending from said rods parallel with said rollers and at their inlet sides, plaiter blades carried by said arms, a needle bar driving shaft, and operating connections between said needle bar shaft and plaiter rods for moving them endwise, substantially as specified.

2. The combination with a sewing machine comprising a reciprocating feed bar, of a pair of rollers, a lever for the said reciprocating feed bar, a vibrating lever operatively connected with the rollers, and a bar carrying pivotal points for both levers, the said pivotal points being adjustable in a direction lengthwise the levers for the purpose described.

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

CHARLES C. EMMONS.

Witnesses:

H. C. AVERY,  
CHAS. WAIN.