

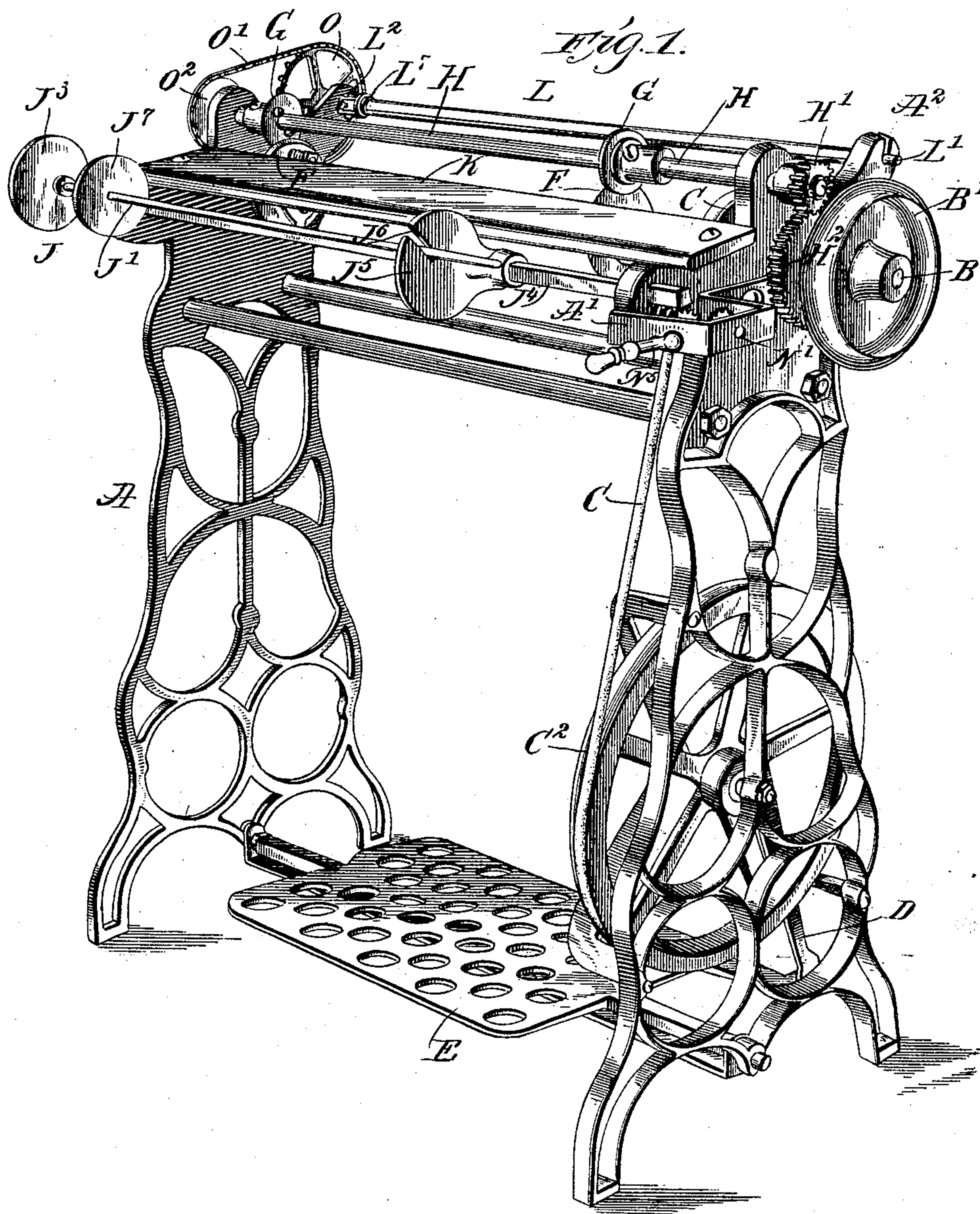
No. 754,818.

PATENTED MAR. 15, 1904.

N. M. SCHUSTER.  
TRIMMING MACHINE.  
APPLICATION FILED SEPT. 3, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

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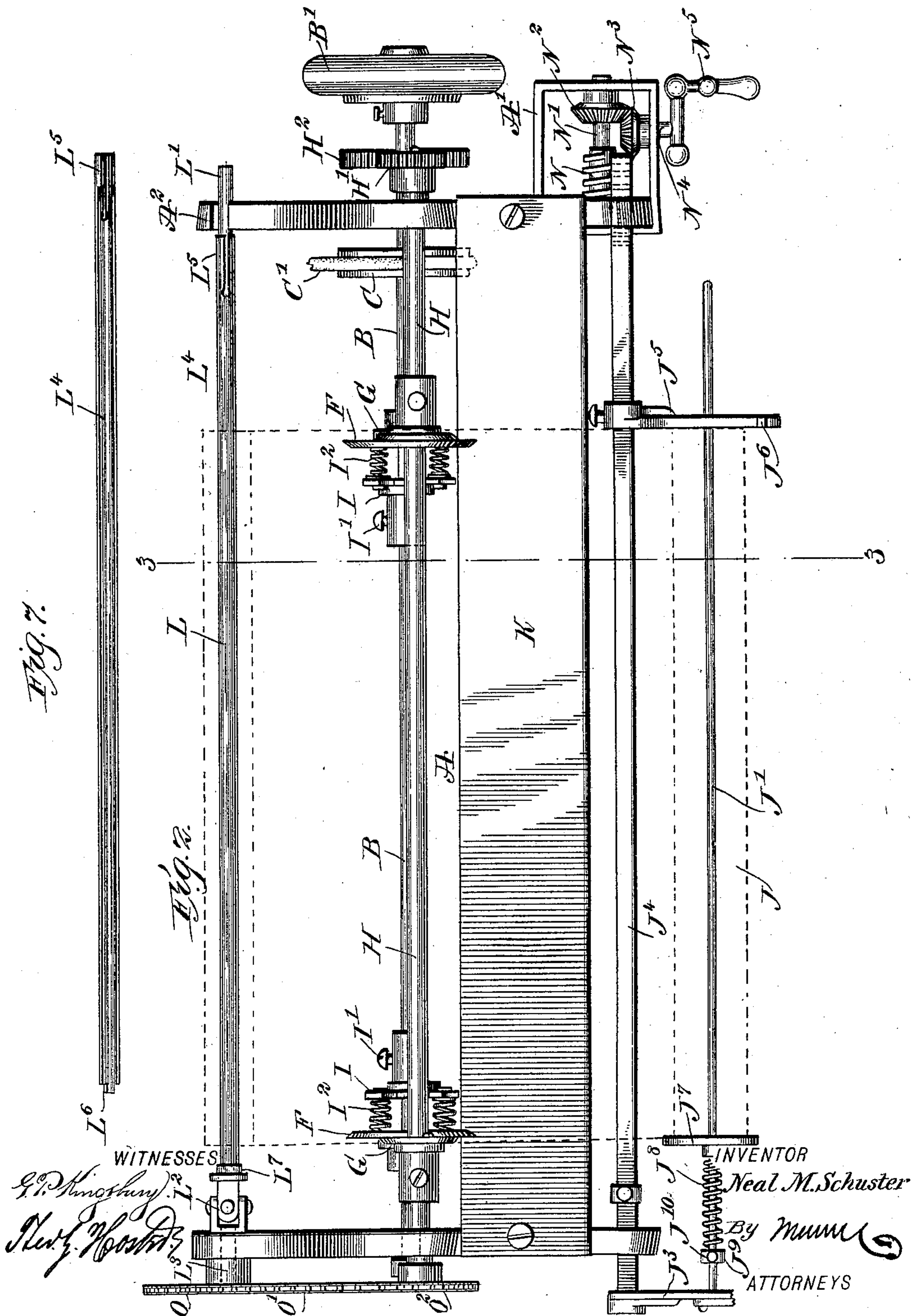
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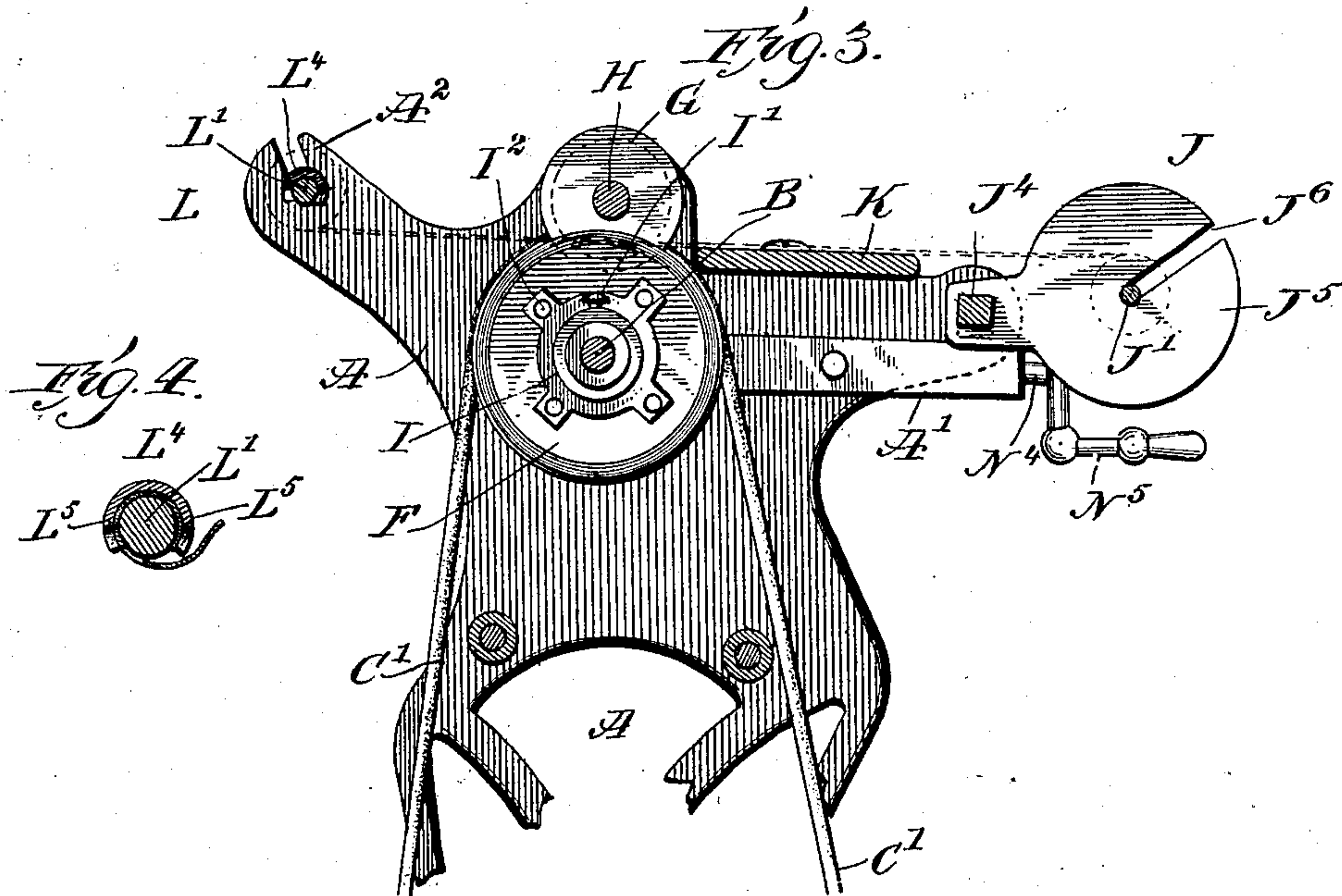
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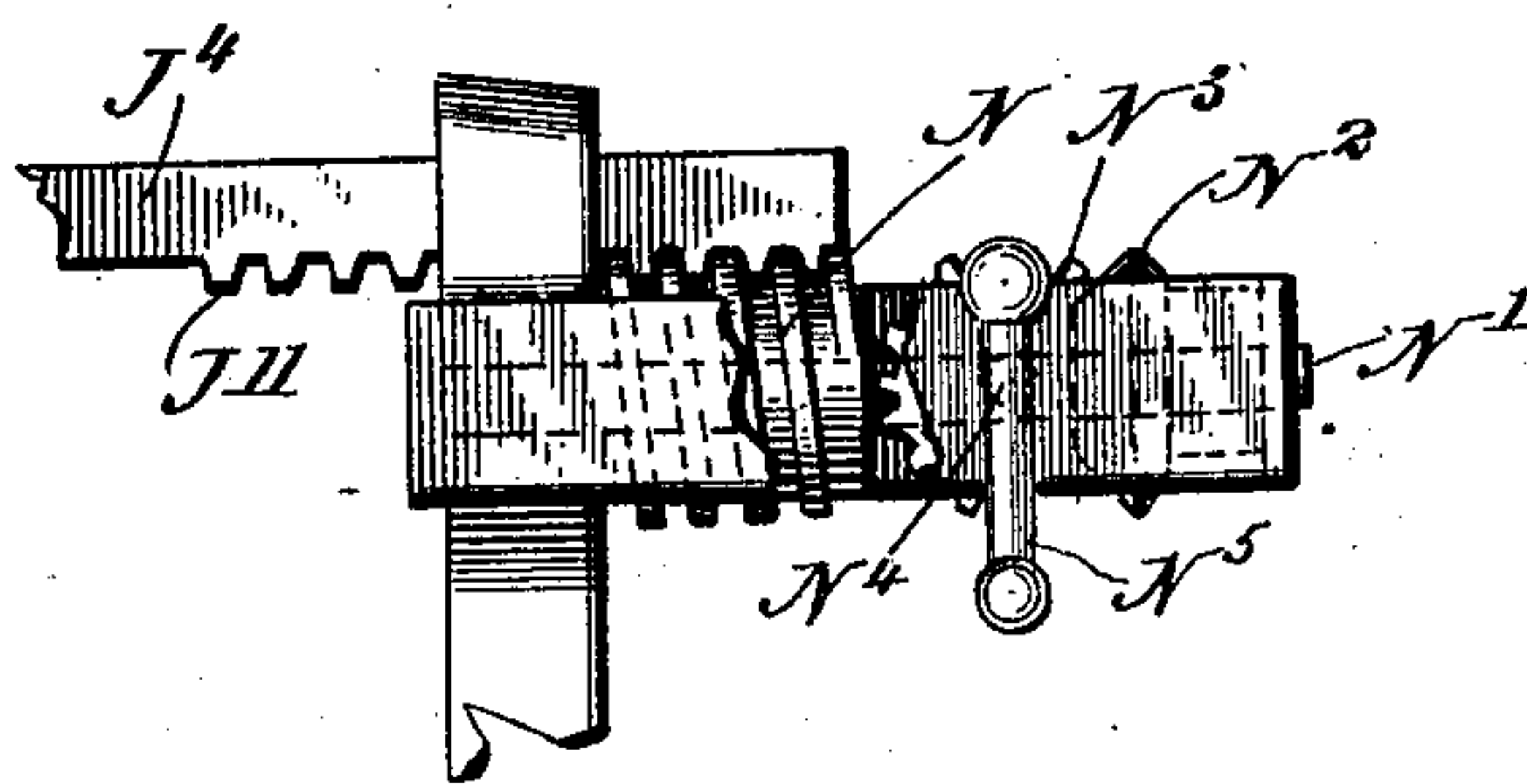
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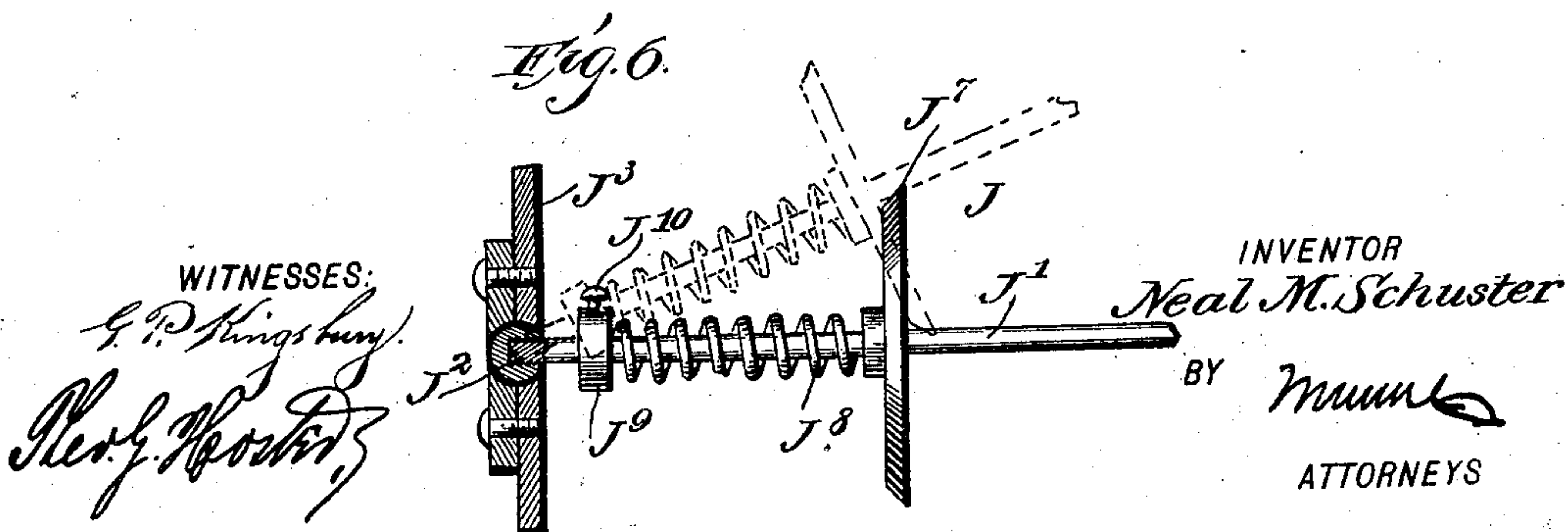
3 SHEETS—SHEET 3.



*Fig. 5.*



*Fig. 6.*





# UNITED STATES PATENT OFFICE.

NEAL MARSHAL SCHUSTER, OF KIRKSVILLE, MISSOURI.

## TRIMMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,818, dated March 15, 1904.

Application filed September 3, 1903. Serial No. 171,750. (No model.)

*To all whom it may concern:*

Be it known that I, NEAL MARSHAL SCHUSTER, a citizen of the United States, and a resident of Kirksville, in the county of Adair and State of Missouri, have invented a new and Improved Trimming-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved trimming-machine, more especially designed for trimming wall-paper and the like and arranged to insure an accurate trimming of the roll at a high velocity and to allow of adjusting the roll according to the width of the margin and while the machine is in operation.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section of the same on the line 3 3 of Fig. 2. Fig. 4 is a cross-section of the paper-clamp on the winding-up device. Fig. 5 is an enlarged side elevation of the roll-adjusting device, parts being broken out. Fig. 6 is an enlarged sectional side elevation of the ball-joint for the roll-supporting rod of the unwinding device, and Fig. 7 is a face view of the clamping-sleeve for locking the paper on the winding-up roller.

The improved trimming-machine is mounted on a suitably-constructed frame A, in which is journaled the main shaft B, carrying on one outer end a fly-wheel B' and provided with a grooved pulley C, over which passes a belt C', also passing over a grooved driving-pulley C<sup>2</sup>, connected by a pitman D with a treadle E, journaled on the main frame and under the control of the feet of the operator. Thus when the treadle E is actuated a rotary motion is given to the main shaft B. On the latter are mounted disk knives F, operating in conjunction with disk knives G, located

above the disk knives F and somewhat in front of the same, and the said upper disk knives G are secured by set-screws or other means on a shaft H, journaled in the upper portion of the main frame A, as plainly shown in the drawings. On the shaft H is secured a pinion H' in mesh with a gear-wheel H<sup>2</sup>, secured on the main shaft B, so that when the latter is rotated, as previously mentioned, then a rotary motion is given to the shaft H and the upper disk knives G, secured on the said shaft H.

The disk knives F are mounted to rotate loosely on the main shaft B and are pressed in contact with the upper disk knives G and are caused to rotate by the following device.

On the main shaft B are secured carriers I by means of set-screws I', and on the said carriers are fastened coiled springs I<sup>2</sup>, pressing with their free ends against the inner faces of the disk knives F, so as to press the outer faces thereof in engagement with the inner faces of the disk knives G. Now when the main shaft B is rotated, as previously described, then the carriers I turn with the said shaft, and consequently the springs I<sup>2</sup>, pressing on the lower disk knives F, tend to rotate the latter, so that the paper passed between a pair of knives F and G is cut.

By the arrangement described the disk knives G and F are not liable to tear the paper or to bruise the same; but owing to the yieldingly-mounted lower disk knives F a clean cut is at all times insured, it being, however, understood that the pairs of knives F and G are pressed apart to the width of the trimmed sheet.

The roll of paper is supported and unwinds on the rod J' of a device J, and the paper passes over a fixed platform K, to then pass between the pairs of disk knives F and G to be trimmed, and then the trimmed sheet is wound up on a driven winding-up device L, located in the rear of the machine.

The roll supporting and unwinding device J is mounted to slide bodily in the direction of the length of the roll to be trimmed, so that the variation in the width of the margin to be cut off the roll can be compensated for by the operator shifting the device J bodily



either to the right or left, as the case may be. The rod  $J'$  of the said roll supporting and unwinding device  $J$  has a ball-and-socket connection  $J^2$  with a bracket  $J^3$ , (see Figs. 2 and 5 6,) secured at the left-hand end of a bar  $J^4$  of polygonal cross-section, mounted to slide lengthwise in suitable bearings arranged on the main frame  $A$ . On the bar  $J^4$  is adjustably secured by a set-screw a bracket  $J^5$ , having a radial slot  $J^6$ , into which passes the free end of the bar  $J'$  after the roll to be trimmed has been slipped on the rod  $J'$ . The right-hand end of the roll is adapted to rest against the inner face of the bracket  $J^5$ , while the left-hand end of the said roll abuts against a flange  $J^7$ , held loosely on the rod  $J'$  and pressed toward the right by a spring  $J^8$ , coiled on the rod  $J'$  and abutting against a collar  $J^9$ , adjustably secured on the rod  $J'$  by a set-screw  $J^{10}$ .  
 Now by the arrangement described the roll of paper to be trimmed is held on the rod  $J'$  between the bracket  $J^5$  and the flange  $J^7$ , and the said bracket  $J^5$  is adjusted lengthwise on the bar  $J^4$  to bring the roll in proper position relative to the pairs of knives  $F$  and  $G$ . On the right-hand end of the bar  $J^4$ , and preferably on the under side thereof, is formed a worm  $J^{11}$ , (see Fig. 5,) in mesh with a worm-wheel  $N$ , fastened on a shaft  $N'$ , journaled in suitable bearings  $A'$ , attached to or forming part of the main frame  $A$ .

On the shaft  $N'$  is secured a bevel gear-wheel  $N^2$  in mesh with a bevel gear-wheel  $N^3$ , attached to a shaft  $N^4$ , provided with a crank-arm  $N^5$ , under the control of the operator, so that when the latter turns the crank-arm  $N^5$  a turning motion is given to the shaft  $N^4$ , which by the gear-wheels  $N^3$   $N^2$  rotates the shaft  $N'$  and the worm-wheel  $N$ , so that the latter moves the bar  $J^4$  lengthwise either to the right or to the left, according to the direction in which the crank-arm  $N^5$  is turned.

Now when the operator notices that the margin on the roll of paper runs narrower at one side and wider on the other then the crank-arm  $N^5$  is correspondingly turned to shift the bar  $J^4$ , and with it the roll, to allow the disks  $F$  and  $G$  to accurately trim the roll.

The winding-up device  $L$  is provided with a winding-up roller or drum  $L'$  in the shape of a shaft, connected at one end by a universal joint  $L^2$  with a shaft  $L^3$ , journaled in the main frame  $A$ , and on this shaft  $L^3$  is secured a sprocket-wheel  $O$ , connected by a sprocket-chain  $O'$  with a sprocket-wheel  $O^2$  on the shaft  $H$ , so that when the treadle is actuated, as previously described, and the shafts  $B$  and  $H$  are driven then the shaft  $H$  by the said sprocket-wheels  $O^2$  and  $O$  and the sprocket-chain  $O'$  imparts a rotary motion to the shaft  $L^3$ , which by the universal joint  $L^2$  rotates the drum or roller  $L'$ , the free end of which turns in a slot  $A^2$ , formed in the main frame  $A$ . Now by having the universal joint  $L^2$  the

drum  $L'$  can be swung upward to disengage its free end from the slot  $A^2$  to allow slipping the trimmed roll off the drum.

In order to hold the forward end of the roll in position on the drum  $L'$ , a clamping-sleeve  $L^4$  is provided, made half-round throughout the major portion of the sleeve to fit over the paper onto the drum, as plainly illustrated in Fig. 4. The right-hand end of the sleeve  $L^4$  is provided with flexible clamping-jaws  $L^5$  for holding the sleeve to the roller, and the other end of the said sleeve is provided with a projecting lug  $L^6$ , adapted to engage the under cut on a collar  $L^7$ , secured to the drum  $L'$  adjacent to the universal joint  $L^2$ . Now by shifting the sleeve  $L^4$  to the right the lug  $L^6$  disengages the collar  $L^7$ , and then the sleeve may be removed from the drum  $L'$  by forcing the jaws  $L^5$  apart, after which the paper can be passed onto the drum and then the sleeve placed in position over the paper and its jaws  $L^5$  engaged with the drum to securely clamp the paper in position on the said drum. The sleeve  $L^4$  is then slipped to the left to engage the lug  $L^6$  with the collar  $L^7$  to cause the sleeve to rotate with the drum  $L'$ .

The operation is as follows: The operator sitting in front of the machine first swings the rod  $J'$  into an angular position, (see dotted lines, Fig. 6,) then slips the roll to be trimmed onto the said rod, after which the latter is swung back into its normal position, as shown in Fig. 2, to hold the roll between the bracket  $J^5$  and the flange  $J^7$ . The end of the paper is now passed over the platform  $K$  and between the pairs of knives  $F$  and  $G$ , and then the end of the paper is fastened to the drum  $L'$ , as above described, after which the operator actuates the treadle  $E$ , so that the winding-up device winds up the trimmed paper, while the pairs of disks  $F$  and  $G$  trim the roll of paper, as before explained.

Any discrepancy in the width of the margin of the roll can be readily compensated for by the operator turning the crank-arm  $N^5$  to the right or left, as the case may be.

By the arrangement described a large number of rolls may be trimmed off accurately in a comparatively short time, as it is not necessary to stop the machine for adjusting the roll in case the margin runs narrower or wider, and hence a large amount of time is saved.

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

1. A trimming-machine, comprising pairs of revoluble disk knives, a treadle device for driving the knives, and a roll-supporting device comprising a bar mounted to slide lengthwise, brackets carried by the bar, and a rod fulcrumed on one bracket and engaging the other bracket, as set forth.

2. A trimming-machine having a roll-supporting device comprising a bar mounted to slide lengthwise, means for moving the bar lengthwise, brackets secured on the bar, and



a rod fulcrumed on one bracket and engaging the other bracket, as set forth.

3. A trimming-machine having a roll-supporting device comprising a bar mounted to slide lengthwise, means for moving the bar lengthwise, brackets, of which one is permanently secured on the bar and the other adjustably fastened on the bar and provided with a slot, and a rod fulcrumed on the fixed bracket and adapted to pass with its free end into the slot of the adjustable bracket, as set forth.

4. A trimming-machine having pairs of trimmers, a support for the roll to be trimmed, and manually-controlled means for shifting the said support bodily in the direction of the length of the roll, the said means consisting of a slide-bar having a worm, a worm-wheel in mesh with the worm and a gearing for turning the worm, as set forth.

5. A trimming-machine, having trimming-knives, a roll-supporting device comprising a bar mounted to slide lengthwise, brackets secured to the bar, and a rod fulcrumed on one bracket and engaging the other bracket, and a winding-up device, as set forth.

6. A trimming-machine comprising trimmers mounted to rotate, a support for the roll to be trimmed, manually-controlled means for shifting the support bodily in the direction of the length of the roll, the said means consisting of a bar mounted to slide and provided at

one end with a worm, a worm-wheel in mesh with the worm, and means for turning the worm-wheel, and a winding-up device for the roll, as set forth.

7. A trimming-machine, comprising pairs of revoluble trimmers, a roll-supporting device comprising a bar mounted to slide lengthwise, brackets on the bar, and a rod fulcrumed on one bracket and engaging the other bracket, means for shifting the said bar, a winding-up device, and a treadle device for driving the trimmers and winding-up device, as set forth.

8. A trimming-machine, comprising pairs of trimming-knives, a winding-up device, means for driving the knives and winding-up device, and a roll-supporting device comprising a bar mounted to slide, a bracket on the said bar, a rod adapted to receive the roll and having at one end a ball-and-socket connection with the said bracket, and an adjustable bracket on the bar having a radial slot to receive the free end of the rod, the said bracket being adapted to engage one end of the roll, and means on the rod for engaging the other end of the roll, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NEAL MARSHAL SCHUSTER.

Witnesses:

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MICHEAL B. FONCANON.