

(No Model.)

3 Sheets—Sheet 1.

J. BUNN.  
CIGAR ROLLING MACHINE.

No. 579,859.

Patented Mar. 30, 1897.

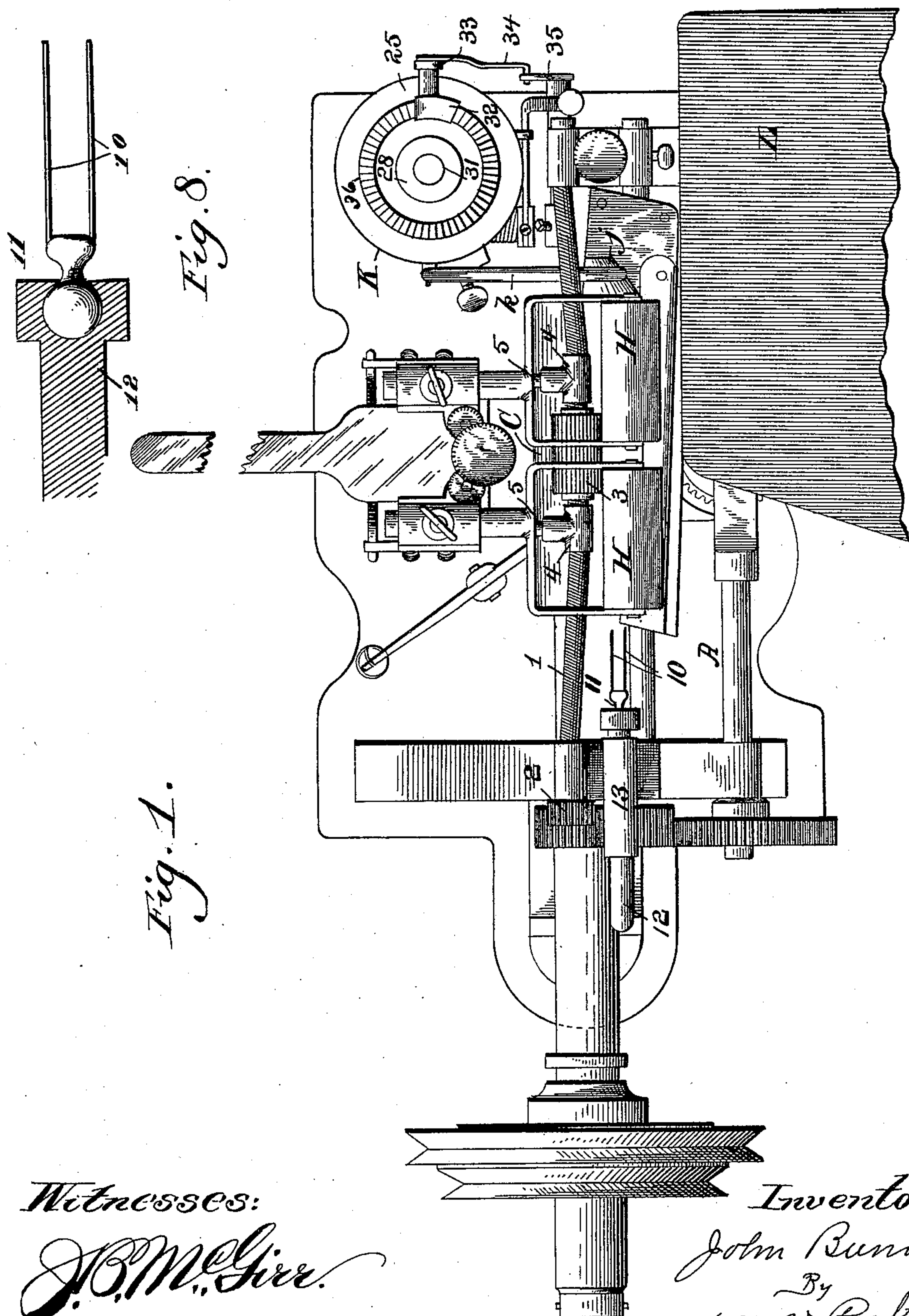


Fig. 1.

Fig. 8.

Witnesses:

J. B. McGirr.

H. Homer.

Inventor.

John Bunn

By

M. W. Peck

His Attorney

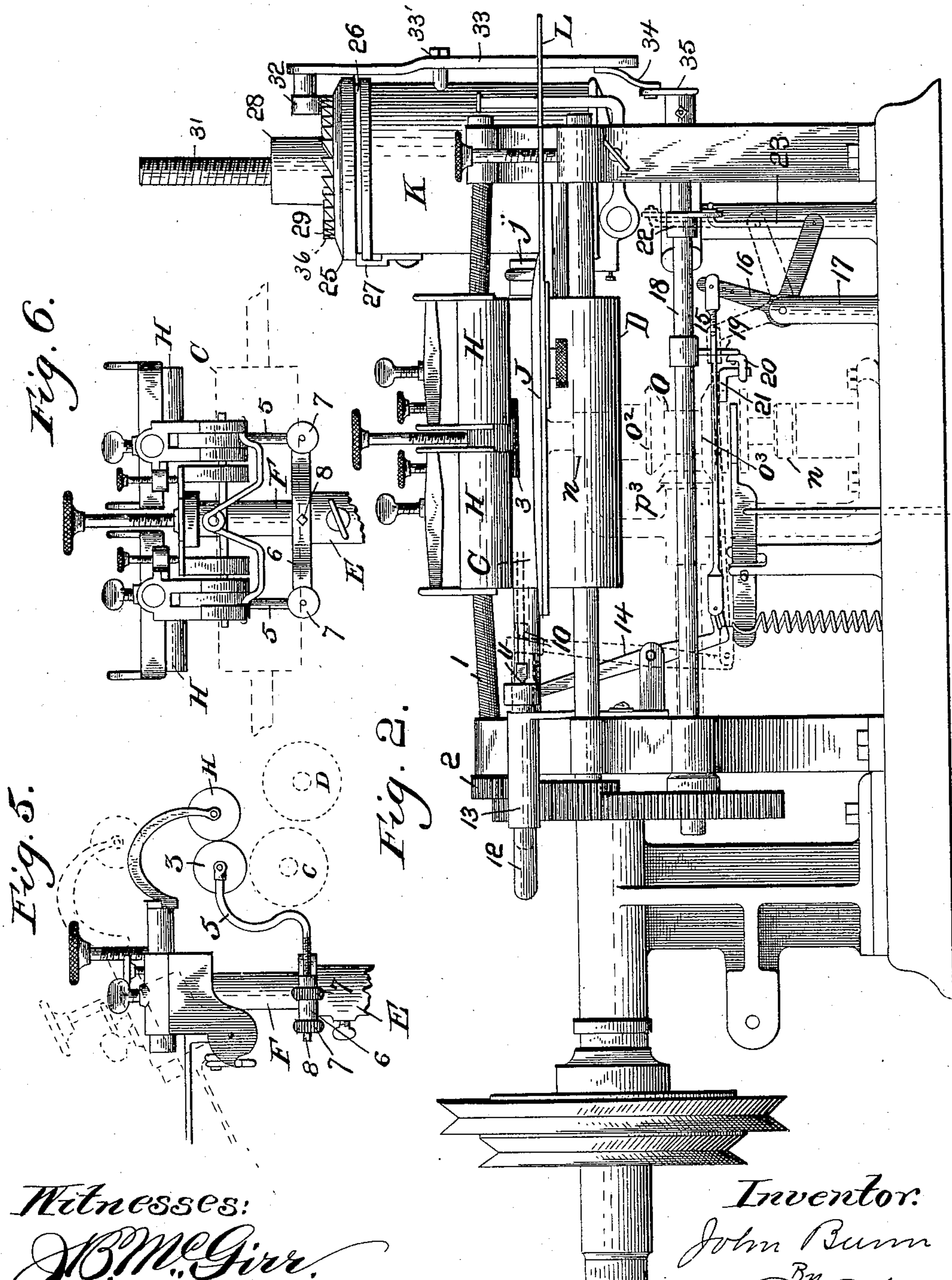
(No Model.)

3 Sheets--Sheet 2.

J. BUNN.  
CIGAR ROLLING MACHINE.

No. 579,859.

Patented Mar. 30, 1897.



Witnesses:  
*J. B. McGirr.*  
*H. Homer.*

Inventor:  
*John Bunn*  
By  
*M. D. Peck*  
His Attorney



(No Model.)

3 Sheets—Sheet 3.

J. BUNN.  
CIGAR ROLLING MACHINE.

No. 579,859.

Patented Mar. 30, 1897.

Fig. 4.

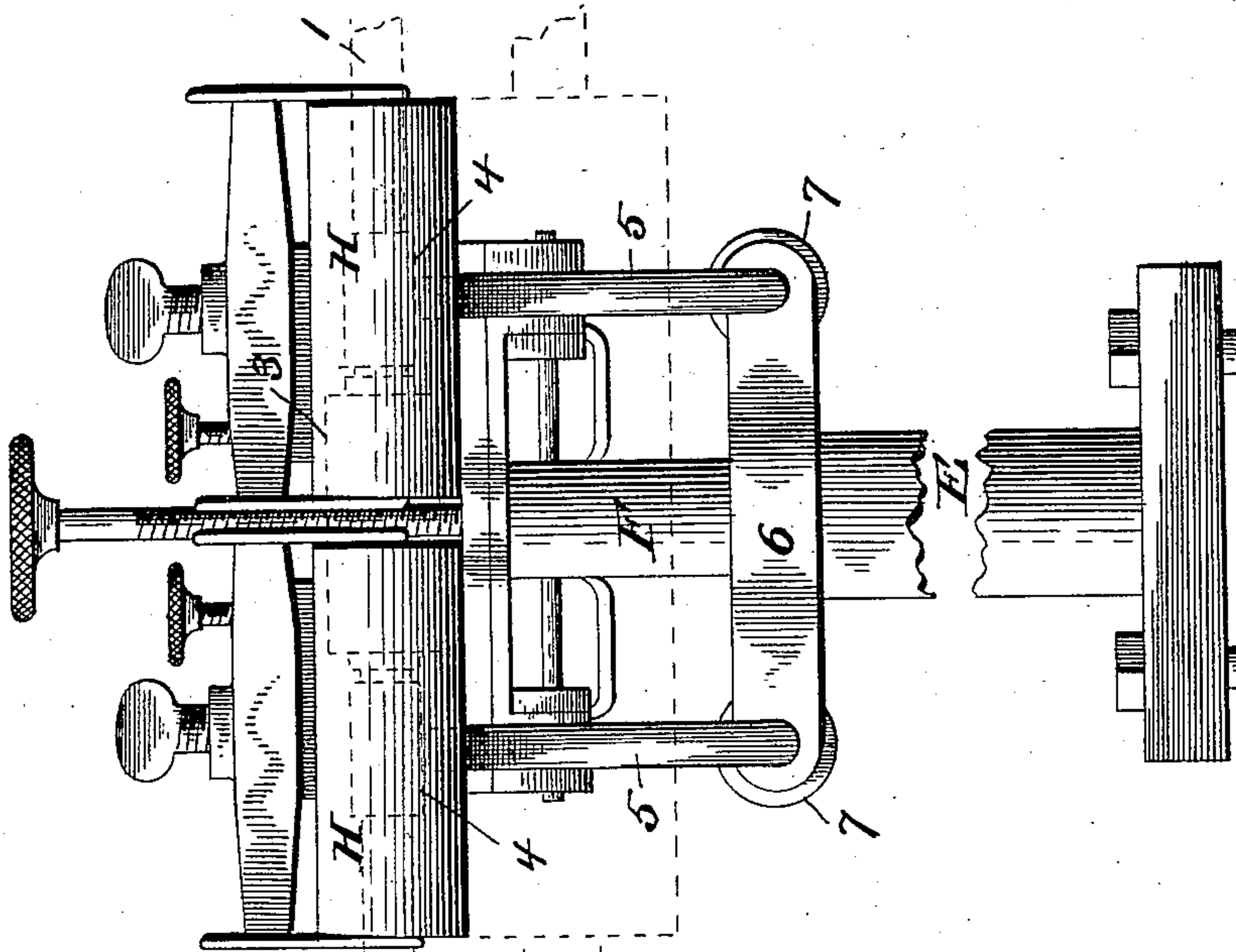


Fig. 7.

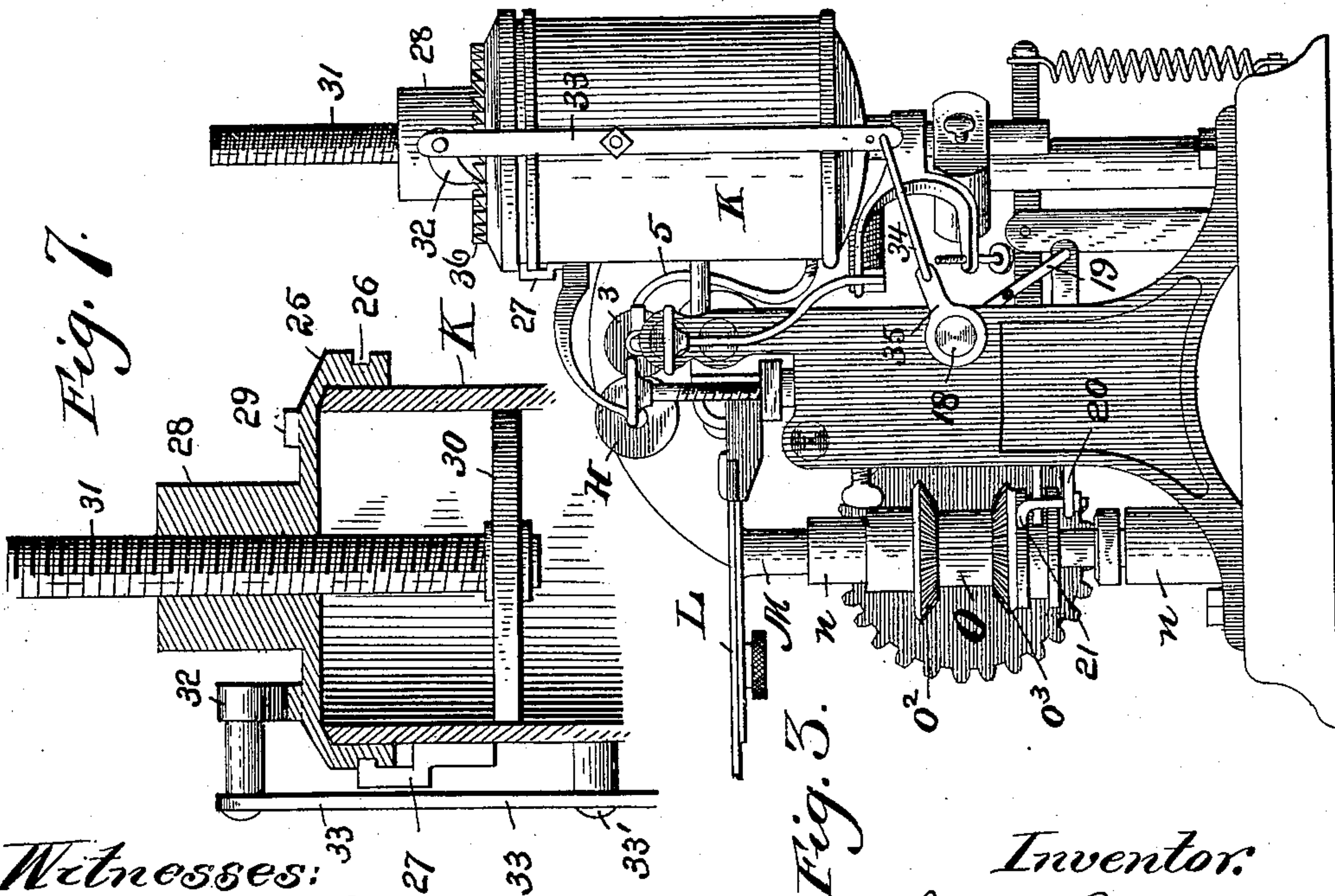


Fig. 3.

Witnesses:

J. B. McGirr.

H. Homer.

Inventor:  
John Bunn  
By  
W. A. Park  
His Attorney



# UNITED STATES PATENT OFFICE.

JOHN BUNN, OF BINGHAMTON, NEW YORK.

## CIGAR-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 579,859, dated March 30, 1897.

Application filed September 1, 1896. Serial No. 604,560. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN BUNN, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Cigar-Rolling 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 appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to cigar-machines, and is intended as an improvement on the machine described and illustrated in Letters Patent No. 566,058, granted to me August 18, 1896.

The improvements consist in the use of an adjustable friction-roller to engage the presser-rollers and impart the positive movement to them for the purpose of shaping a soft bunch at the same time the wrapper is applied to it, and also in the construction of the needle used in starting the wrapper on the bunch and the manner of operating it. The construction and operation of these improved mechanisms will be fully set forth in the following specification and particularly set forth in the claims.

Referring to the drawings, Figure 1 is a plan view of my improved machine. Fig. 2 is a front elevation, some of the parts of which are shown in dotted lines. Fig. 3 is an end elevation of the machine. Fig. 4 is an elevation, on an enlarged scale, of a portion of the machine, some of the parts being indicated in dotted lines; and Figs. 5, 6, 7, and 8 are views of detached details.

Similar letters and numerals of reference indicate corresponding parts in each figure of the drawings.

I will first briefly refer to such parts of the machine as are illustrated and described in the aforesaid patent, and which are necessary to be described in connection with the present improvements. The parts common to both machines will be given the same letters of reference herein as appear in said patent and the new parts will be given reference-numerals.

C and D represent rollers which support

and rotate the bunch and are positively driven.

H are the presser and shaping rollers, arranged end to end and adjustable, as set forth in said patent.

E is a hollow standard, and F a post vertically adjustable in the standard. The post F at its upper end supports the bearings for and the various devices to give the presser and shaping rollers H their various adjustments.

J is the wrapper-stretcher, having the tip-forming cavity *j*, and K is the paste-cylinder, from which paste is conveyed to the cavity *j* through the tube *k*, as shown in Fig. 1.

L is the wrapper-supporting table, carried by a post M, which may be turned in bearings *n*.

O is a sleeve fitting over the post M and connected to it, having a limited vertical movement thereon and a uniform axial movement. The sleeve carries bevel-gears  $O^2$  and  $O^3$ , which are adapted to engage a positively-driven bevel-gear  $p^3$  at the will of the operator. The gears  $O^2$  and  $O^3$  are mutilated in order that the sleeve O and post M can only be turned one-fourth of a revolution in either direction.

Referring now to the presser-rollers H, I have found that it is desirable to drive them positively instead of by contact with the bunch, as in the before-named patent. In order to do this, I provide a flexible shaft 1, journaled in suitable bearings in the frame of the machine, which has at one end a pinion 2, which engages some positively-driven gear. The flexible shaft 1 carries a friction-roller 3, adapted to engage portions of both rollers H. In order to adjust the shaft 1 and roller 3 to suit the various adjustments to which the rollers H are adapted, I provide additional bearings 4 for the flexible shaft, one on each end of the roller 3. The bearings 4 are carried by the bent arms 5, which extend rearwardly and are supported in a block 6, as shown in Figs. 4 and 6, one at each end thereof. The ends of the arms which pass through the block are threaded and provided with adjustable nuts 7, by means of which arms 5 can be separately adjusted backward or forward and thereby move the ends of the friction-roller 3 corre-



spondingly, as may be desired. The block 6 is perforated and fits over the post F, on which it can be vertically adjusted and held in position by the set-screw 8. The friction-roller 3 can therefore be adjusted vertically and laterally to keep it in engagement with the presser and forming rollers H at all times.

10 represents a double needle, the function of which is to hold the wrapper against the bunch at the butt-end when starting to roll the wrapper on the bunch. The double needle is carried by a stem 11, which has free rotary movement in the sliding rod 12, the latter being supported in a sleeve 13, secured to the frame of the machine. In order to give the rod 12 a reciprocating movement, a lever 14 is pivoted to a fixed support on the frame, its upper end being connected to the sliding rod 12 and its lower end connected by a slotted connection to one end of a rod 15, the other end of the rod being connected to one arm of a bell-crank 16, pivoted to a standard 17.

18 represents a shaft loosely journaled in bearings on the main frame of the machine. An arm 19 extends from this shaft and is connected by a link 20 to a bent arm 21, connected to the sleeve O on the shaft M. As the sleeve O is given a quarter-turn first in one direction and then back again in the opposite direction, the same movement will be imparted to the shaft 18. Another arm 22 extends from the shaft 18 and is connected to the other arm of the bell-crank 16 by a link 23. The operation of this part of the device is as follows:

As shown in Fig. 2, the table L is in the position it occupies when a cigar-bunch has just been wrapped and the gear  $O^3$  is in engagement with the gear  $p^3$ , and the continued movement of the driving-shaft A will swing the table to the left, ready to receive a new wrapper. As the sleeve O turns in this movement it will cause the shaft 18 to make a quarter-turn and lift the outer end of the arm 22. This will rock the bell-crank 16 and push the rod 15 to the left, thereby rocking the lever 14 and moving its upper end and the sliding rod 12 to the right, which will bring the double needle to the position indicated in dotted lines in Fig. 2.

Supposing now the butt-end of a wrapper is laid upon the double needle and a bunch upon the wrapper, the operator will bring the gear  $O^3$  into engagement with the gear  $p^3$  and the sleeve O and table L will begin to turn in the opposite direction. In the meantime the rolling and shaping rollers will begin to roll the wrapper on the bunch, and the double needle being free to turn in the sliding rod 12 will securely hold the wrapper against the bunch until the butt-end has been overlapped. In the meantime the shaft 18 will also be moving in the opposite direction and thereby causing the rod 15 to move to the right. The first part of this movement will not affect the lever 14, owing to the slotted connections between it and the rod 15. When

the right-hand end of the slot is reached, however, the lever 14 will begin to move, thereby throwing its upper end to the left and withdrawing the double needle 10 from the cigar. This withdrawal does not take place, however, until the wrapper is fairly started around the bunch.

Referring now to the pasting devices, the cylinder K is provided with a cap 25, having a circumferential groove 26 on its periphery. This cap is held in position by means of hooks 27, secured to the cylinder K, which engage the groove 26. The cap can therefore have rotary movement, but no vertical movement. The cap 25 is provided with a central boss 28, projecting upwardly and having a threaded hole through which the threaded stem 31 of the piston 30 extends. The piston 30 fits closely within the paste-cylinder K and is intended to bear upon the paste.

The cap 25 of the pasting device is provided with a circular rack 29, the teeth 36 of which are engaged by the pawl 32. The teeth of the rack have an inclined side up which the pawl will ride when moved in one direction. The pawl 32 is connected to the upper end of the lever 33, which is pivoted at 33' to the paste-cylinder K. The lower end of the lever 33 is connected by a link 34 to an arm 35, extending from the projecting end of the shaft 18. It is obvious that by moving the shaft 18, already described, the lever 33 will be rocked to and fro. The lever is so arranged that a movement in one direction will shift the pawl from one tooth to the next, and its opposite movement will rotate the cap slightly and press the piston 30 downwardly to a sufficient extent to force enough paste into the tip-forming chamber  $j$  to paste the tip end of a wrapper, and this operation will be repeated with each cigar-wrapper.

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

1. In a cigar-machine the combination with cigar-bunch supporting and rotating rollers, of a series of adjustable forming and presser rollers supported end to end, and a friction-roller carried by a positively-driven flexible shaft and engaging the forming and presser rollers, substantially as and for the purpose set forth.

2. The combination with cigar-bunch supporting and rotating rollers, and a series of presser and forming rollers supported end to end and separately adjustable to conform to the shape of the cigar-bunch, of a flexible shaft supported in bearings and positively driven, a friction-roller carried by said shaft, additional bearings for the flexible shaft near the ends of the rollers and means substantially as described to adjust the latter bearings vertically and laterally to keep the friction-roller in engagement with the presser and forming roller in their several adjustments substantially as and for the purpose set forth.

3. In a cigar-machine, the combination with



the bunch supporting and rotating rollers, and the pivoted wrapper-supporting table, of a double needle, a sliding rod in which the double needle is rotatably supported and mechanism to reciprocate the sliding arm to and fro as the wrapper-supporting table to swing back and forth, substantially as and for the purpose set forth.

4. In a cigar-machine, the combination with the bunch supporting and rotating rollers, the wrapper-supporting table, the shaft supporting the table, the sleeve keyed on the shaft and the mechanism to turn the sleeve and shaft alternately in opposite directions, of a shaft loosely journaled in the frame of the machine, an arm extending from the shaft, a bent arm extending from the sleeve, a link connecting said arms, a sliding rod carrying a double needle, a pivoted lever connecting at its upper end to the sliding rod, a bell-crank pivoted to a fixed support on the machine, an arm on the shaft, a link connecting

said arm to one arm of the bell-crank and a rod leading from the other arm of the bell-crank and having a slotted connection with the lower end of said lever, substantially as and for the purpose set forth.

5. In a cigar-machine, the combination with a double needle adapted to hold the butt-end of the wrapper against the cigar-bunch, of a sliding rod in which the needle is rotatably supported, a lever pivoted to a fixed support on the machine and connected at its upper end to the sliding rod, a rod having a slotted connection at the lower end of the lever, and mechanism, substantially as described to reciprocate the last-named rod, as and for the purpose set forth.

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

JOHN BUNN.

Witnesses:

ASA J. CUMMING,  
ALEX. CUMMING.