No. 610,754. Patented Sept. 13, 1898.

J. BUNN.

CIGAR ROLLING MACHINE.

(Application filed Oct. 22, 1897.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.

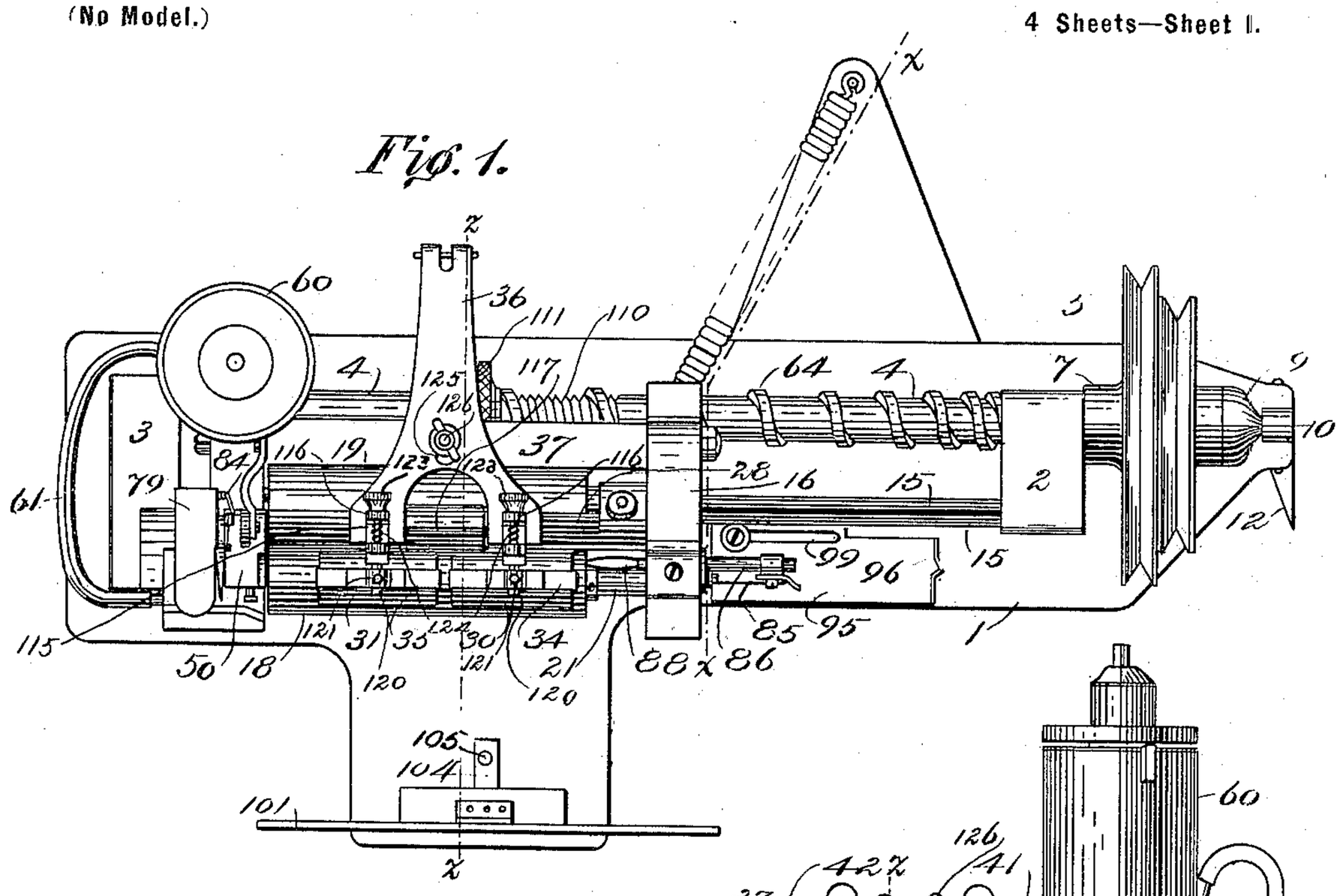

Fig. 2.

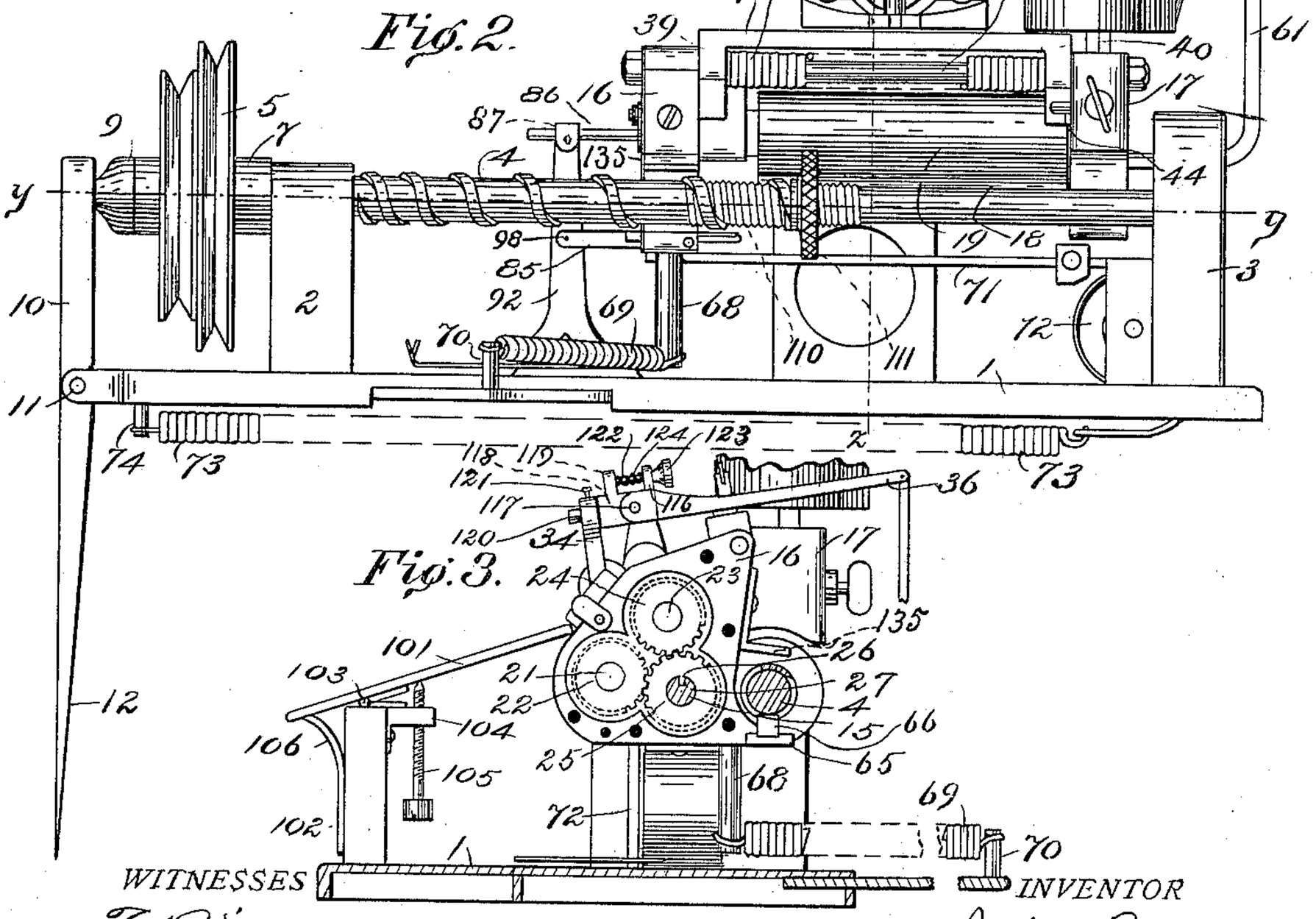

Fig. 3.

WITNESSES

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(No Model.) 4 Sheets—Sheet 2.

Fig. 4.

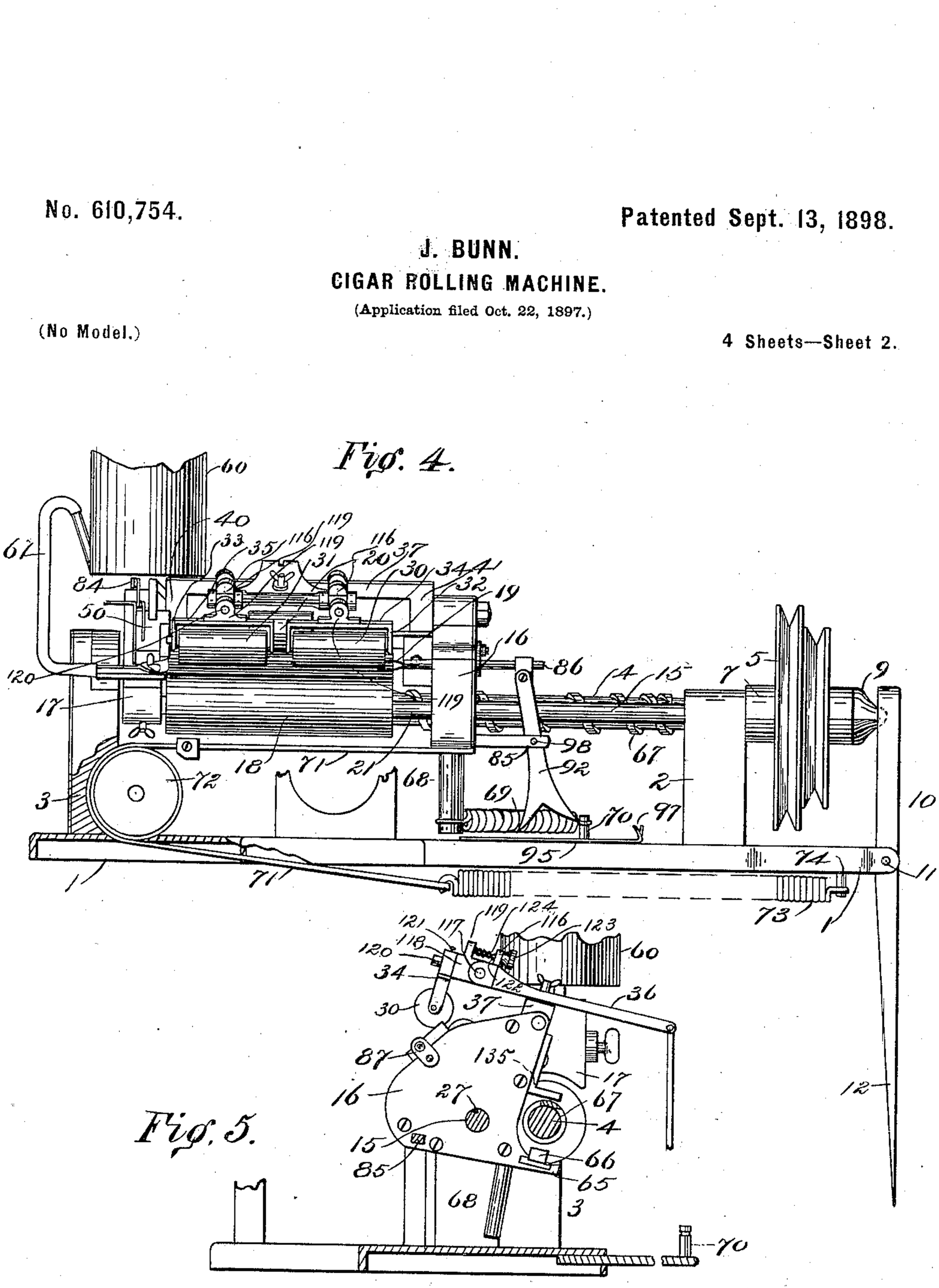


Fig. 5.

Fig. 7.

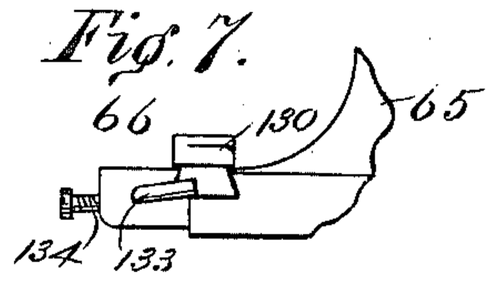


Fig. 6.

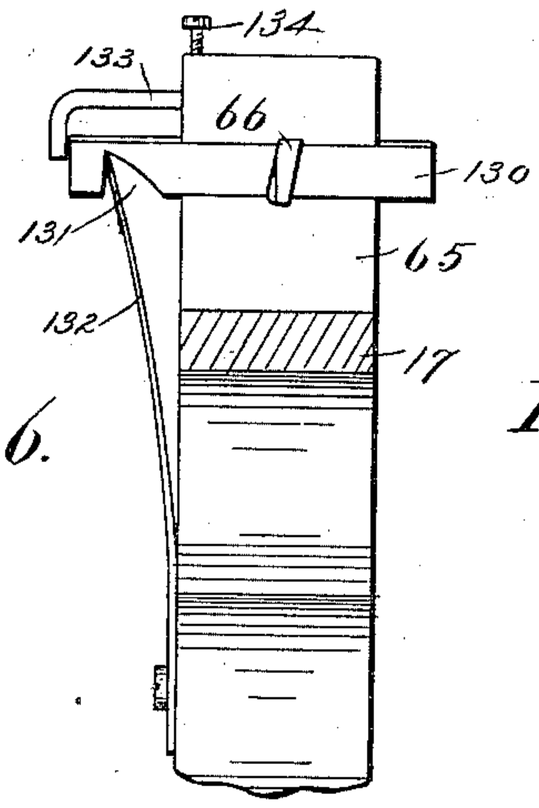
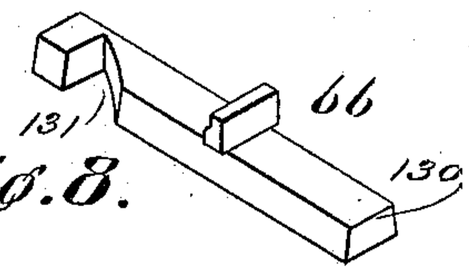


Fig. 8.



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No. 610,754. Patented Sept. 13, 1898.

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CIGAR ROLLING MACHINE.

(Application filed Oct. 22, 1897.)

(No Model.) 4 Sheets—Sheet 3.

Fig. 9.

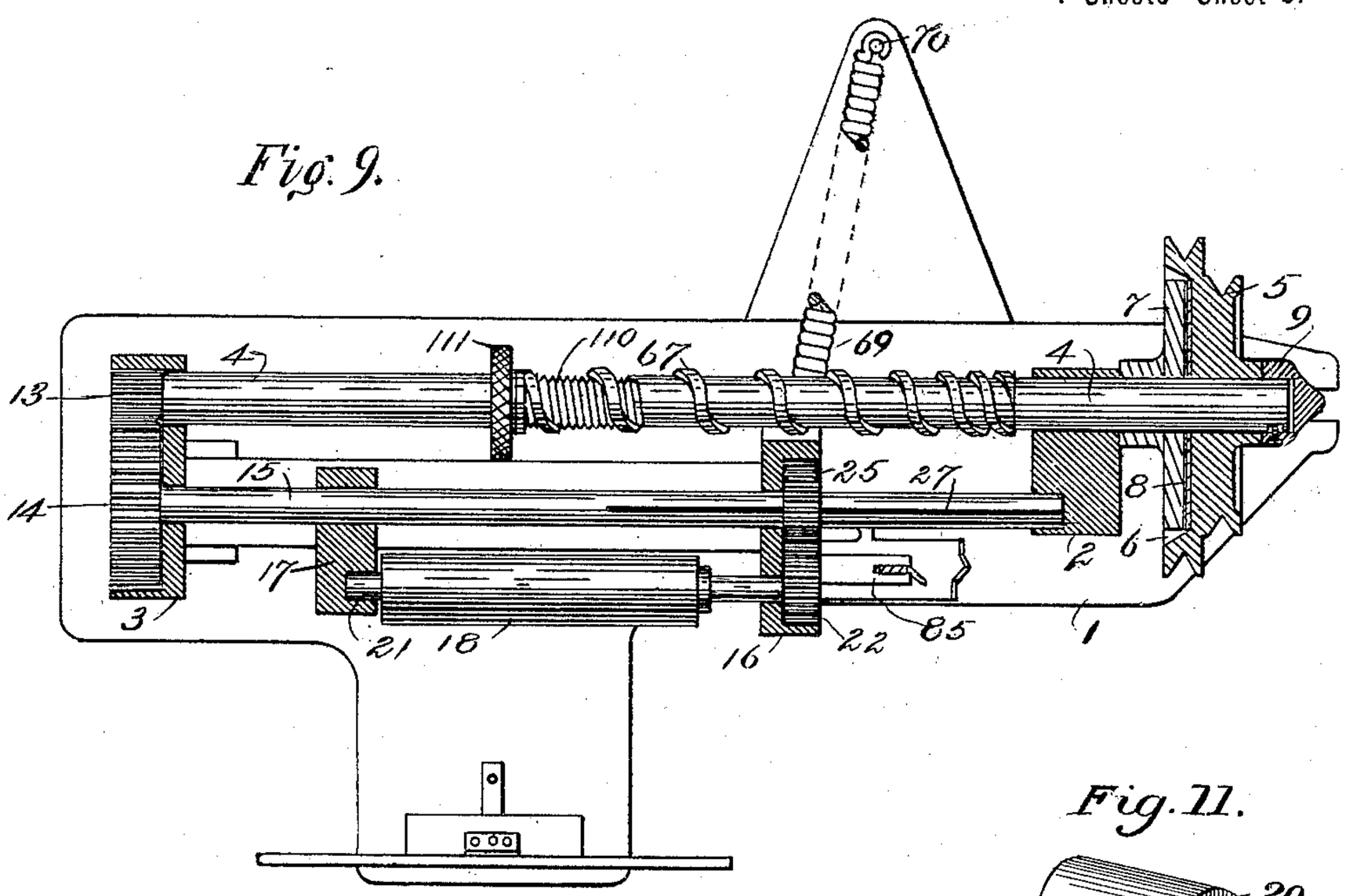


Fig. 11.

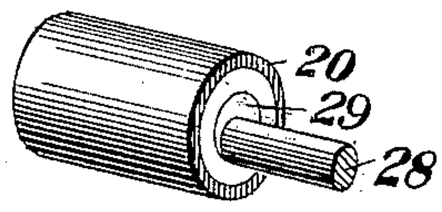


Fig. 20.

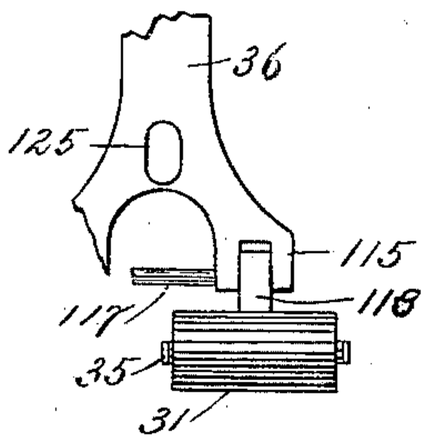


Fig. 10.

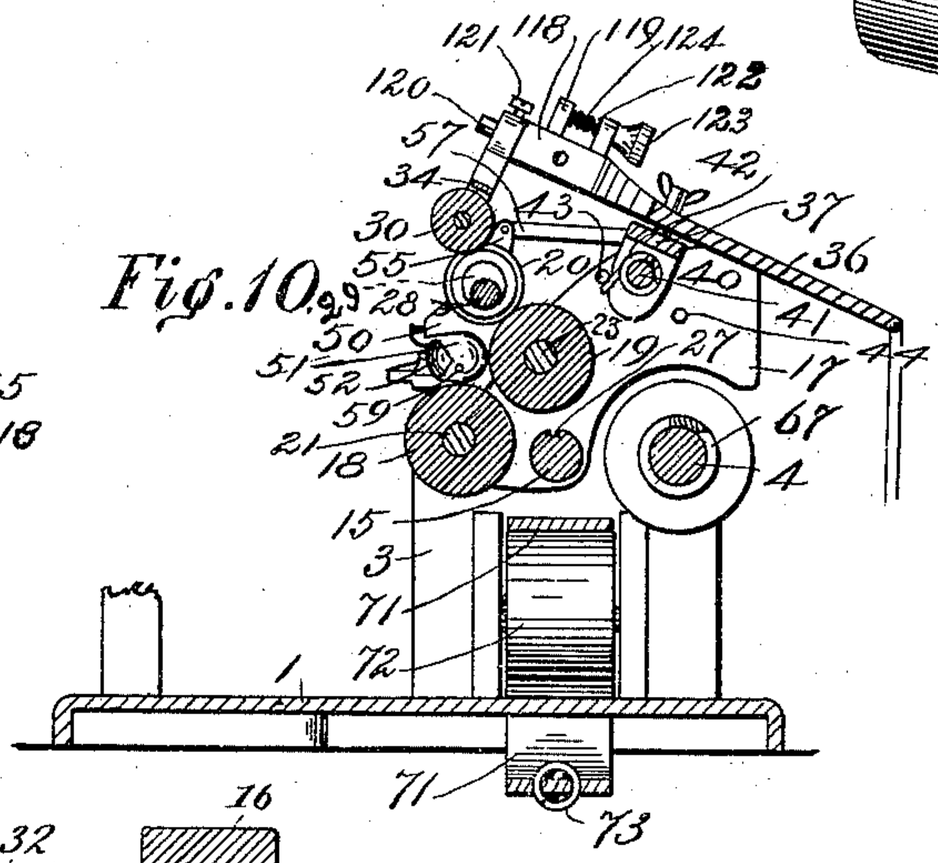


Fig. 11a.

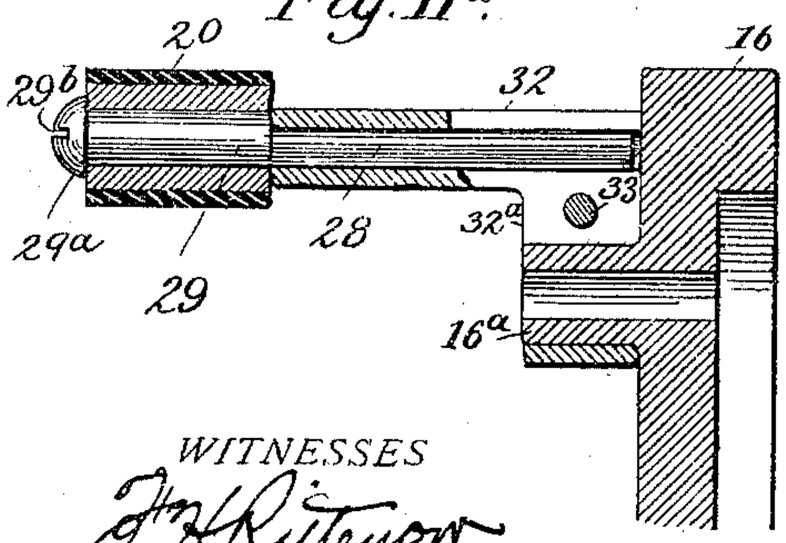
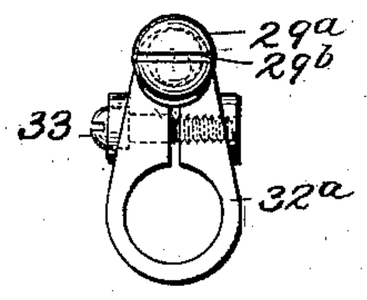


Fig. 11b.



WITNESSES

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CIGAR ROLLING MACHINE.

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(No Model.) 4 Sheets—Sheet 4.

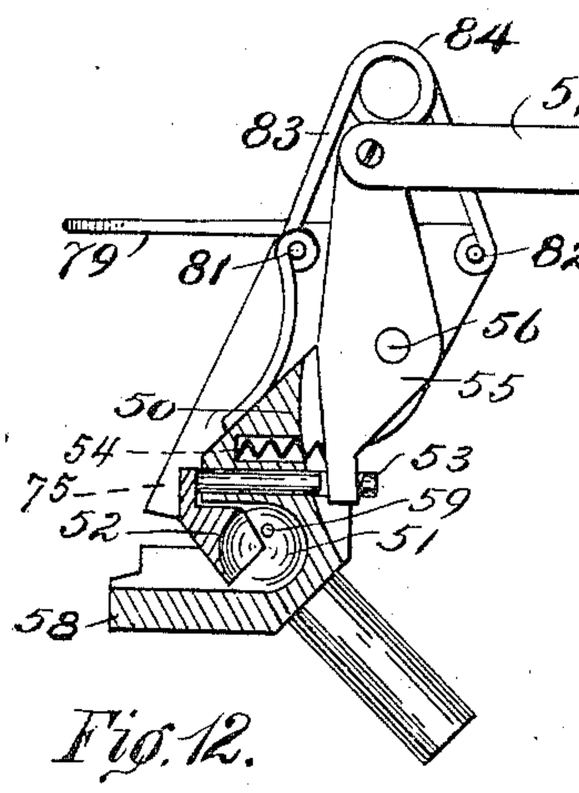

Fig. 12.

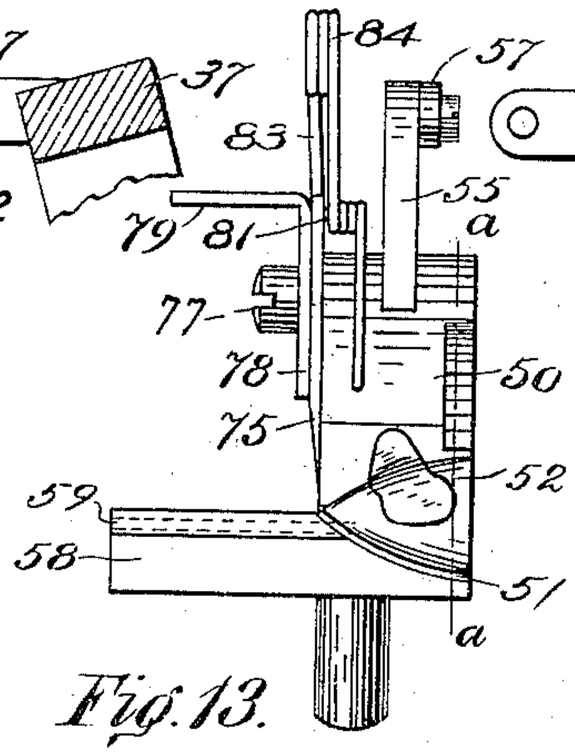

Fig. 13.

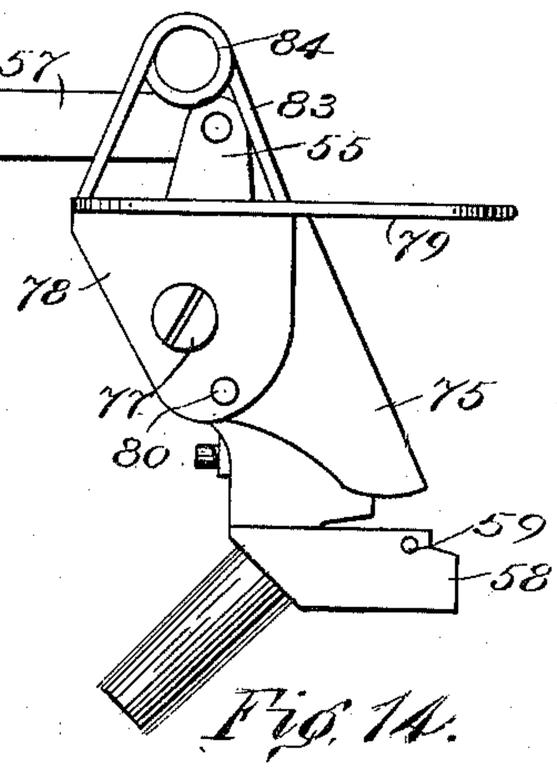

Fig. 14.

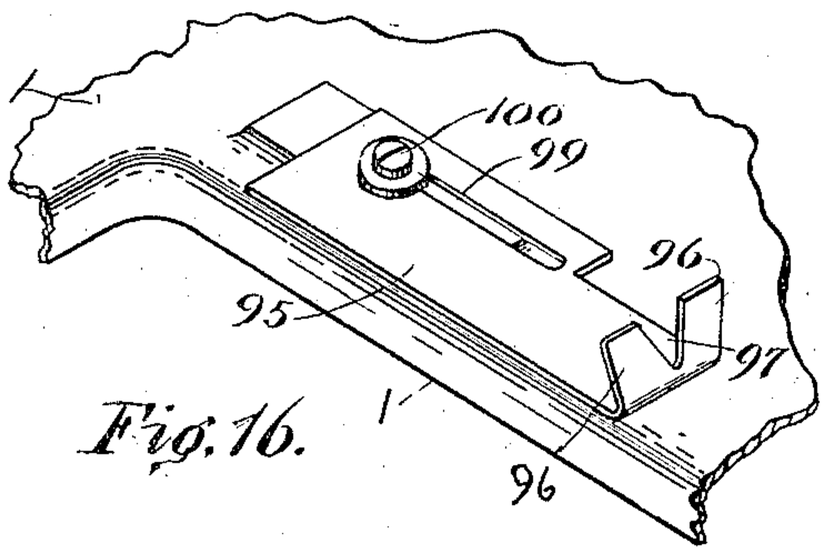

Fig. 16.

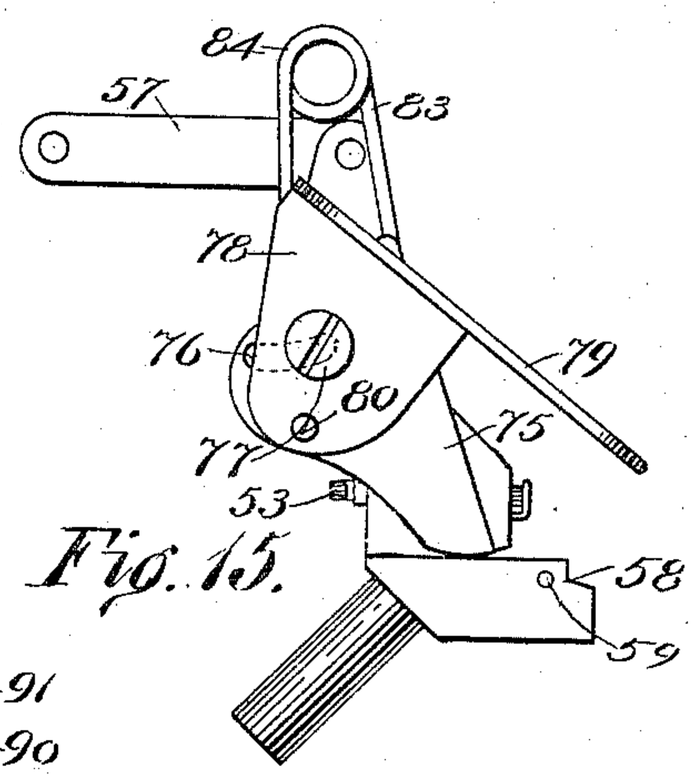

Fig. 15.

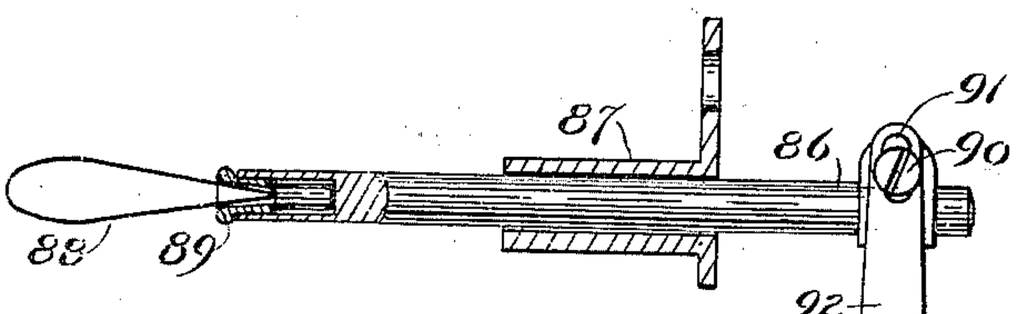

Fig. 17.

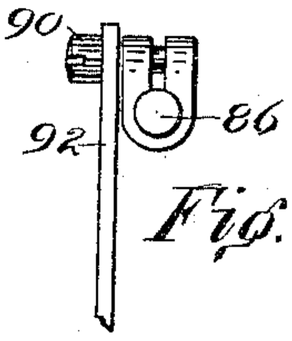

Fig. 18.

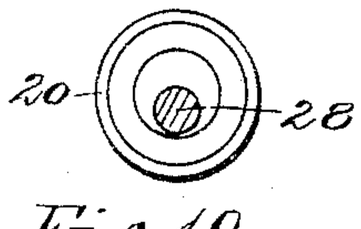

Fig. 19.

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UNITED STATES PATENT OFFICE.

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CIGAR-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 610,754, dated September 13, 1898.

Application filed October 22, 1897. Serial No. 655,991. (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 a part of this specification.

My invention relates to that class of cigar-rolling machines wherein the bunch is rolled during the process of applying the wrapper thereto; and it consists in certain details of construction of the various parts and novel combinations, substantially as hereinafter described, and more particularly pointed out in the claims.

The object of the invention is to so improve the construction of machines of this character that they shall be capable of more efficiently and quickly wrapping bunches and shall be adjustable in respect to various parts, so as to produce cigars of various sizes and shapes.

Referring now to the drawings, Figure 1 is a plan view of a machine constructed in accordance with my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a transverse section on the line *x x* of Fig. 1 with the cap closing the hollow end of the roller-carriage removed to disclose the gears within said hollow end. Fig. 4 is a front elevation of the machine with the wrapper-supporting table omitted. Fig. 5 is a vertical section on a line substantially the same as that of *x x* in Fig. 1, showing the cap in place upon the hollow end of the roller-supporting carriage and the parts in the position they occupy when the feeding means for said carriage has been disconnected and the carriage is being returned to the starting-place. Fig. 6 is a detail horizontal sectional view showing the construction of the movable means which engage the feeding-worm for the roller-carriage. Fig. 7 is a view of the same, looking at the parts on a line at right angles with that from which it is viewed in Fig. 6. Fig. 8 is a detail perspective view of the worm-engaging lug. Fig. 9 is a longitudinal section taken on the line *y y* of Fig. 2. Fig. 10 is a vertical section taken on the line *z z* of Fig. 1 and looking toward the left-hand end of the machine, but showing the roller-carriage tilted to the rear. Fig. 11 is a detail view of the presser-roller 20 and its supporting-shaft. Fig. 11[a] is a sectional detail view of the presser-roller 20 and its supporting devices. Fig. 11[b] is an end view of the split sleeve in which the shaft of the roller is supported. Fig. 12 is a vertical section through the line *a a* of Fig. 13. Fig. 13 is a detail front view of the means for forming the tip of the cigar and cutting the wrapper. Fig. 14 is an end view of the same. Fig. 15 is a view similar to Fig. 14, but showing the cutting-knife in the position it assumes while being operated. Fig. 16 is a detail view of the adjustable stop-plate for the wrapper-holder. Fig. 17 is a detail view, partly in section, of the wrapper-holder and said stop-plate. Fig. 18 is a detail view of the means for attaching the lever of the wrapper-holder adjustably to the movable rod thereof. Fig. 19 is a detail view of the roller 20 and the adjusting device therein; and Fig. 20 is a detail view of one side of the under side of the arm 36, showing the slot therein within which the roller-supporting means is pivoted.

For convenience in describing the invention that end of the machine commonly known as the "header" end is hereinafter referred to as the "left-hand" end, and the end toward which the carriage moves in the operation of wrapping a bunch is hereinafter called the "right-hand" end.

Like numerals indicate corresponding parts in each figure of the drawings.

1 designates a bed-plate having suitable standards 2 and 3 at its ends. Journaled in said standards is a driving-shaft 4, having one end extending through and projecting beyond the standard 2, and loosely mounted on said projecting end is a pulley 5, having an opening 6 in its face, which receives a disk 7, fixed on said shaft. One face of this disk and the adjacent wall of the recess are formed with frictional faces 8, of leather or other suitable material, so that when they are engaged rotary motion communicated to the pulley

will be imparted to the disk and thence to the shaft 4. The pulley 5 is adapted to slide on the shaft 4 and to move into engagement with the disk 7. A cap 9 is loosely mounted on the end of said shaft and engaged by the upper end of a lever 10, which is pivoted at 11 to the end of the bed-plate 1 and has its free end 12 arranged to be engaged by the knee of the operator, as seen in Fig. 4.

It will be seen in Fig. 9 that the end of the shaft 4 remote from the pulley 5 is provided with a pinion 13, which intermeshes with a gear 14, mounted on the end of a shaft 15. On the shaft 15 are the supports 16 and 17 of a carriage which carries the presser-rollers 18, 19, and 20, (shown in Fig. 10,) which assist in rolling the bunch and applying the wrapper thereto. The presser-roller 18 is carried by the shaft 21, which is journaled near the front of the lower ends of the supports 16 and 17 and has within the support 16 a gear 22, and the presser-roller 19, which is located rearward and above said roller 18, is mounted upon a shaft 23, which has a gear-wheel 24, as seen in Fig. 3, upon its end within the support 16.

The shaft 15 carries a loosely-mounted gear-wheel 25, which is movable with the carriage and is provided with a projection 26, that engages an elongated keyway 27, formed in the shaft 15, and the gear-wheel 25 is intermeshed with each of said gears 22 and 24, whereby rotary motion is imparted to rollers 18 and 19 from the shaft 15. The roller 20 is supported above the roller 19 upon the end of a normally stationary shaft 28 and is rotated by its frictional engagement with the roller 19. Two presser-rollers 30 and 31 coact with said rollers 18, 19, and 20 in the wrapping of a cigar. These rollers 30 and 31 are frictionally engaged with said roller 20 and are both driven by the same. In order that the degree of pressure of the roller 20 on the rollers 19, 30, and 31 may be regulated and adjusted, the shaft 28 of roller 20 is formed with a cylindrical portion 29 at one end thereof, which is eccentrically set on the shaft and forms the support on which the roller 20 turns axially.

Projecting inwardly from the support 16 is a hub 16^a, in which one end of the shaft 23 is journaled.

32 indicates a split sleeve having a downwardly-extending portion 32^a at one end, which is bored out to fit over the hub 16^a and is provided with a clamping-screw 33. The sleeve 32 serves as a bearing for the shaft 28, and one end of the cylindrical portion 29 abuts against the end of the sleeve. The other end of the cylindrical portion 29 is provided with a head 29^a, which has a slot 29^b to receive a screw-driver or similar device by means of which the shaft may be turned in the sleeve. It will be obvious that when the screw 33 is tightened up the portion 32^a will be firmly clamped on the hub and the shaft 28 be firmly clamped in the sleeve and held against movement. By this construction it is also obvious that by loosening the screw 33 and turning the shaft 28 in its bearing the position of the roller 20 relatively to the rollers 19, 30, and 31 may be varied and its pressure thereon be adjusted as desired.

All of the rollers are faced with soft rubber, and it will be seen that their construction, arrangement, and operation are such as to simulate very closely the action of the hand in rolling cigars by hand.

The rollers 30 and 31 are journaled in the ends of frames 34 and 35, as seen in Fig. 4, which are independently supported at the bifurcated front end of an arm 36, as hereinafter more fully described, which latter is attached to an arm 37 and extends rearward thereof. A foot-treadle (not shown) is connected to the rear end of the arm 36 for raising the rollers 30 and 31. The arm 37 has depending projections 39 and 40 at its ends, pivotally mounted on a stationary shaft 41, as shown in Fig. 2, which shaft is journaled in supports 16 and 17 of the roller-carriage and is surrounded by a coiled spring 42, one end of which is attached to said arm 37, and the other end of which engages a projection 43 on the support 17, as clearly shown in Fig. 10, whereby the spring 42 holds the rollers 30 and 31 yieldingly in a lowered position. The projection 40 extends below the shaft 41 in position to engage the projection 43 when the arm 37 is tilted sufficiently to raise the rollers 30 and 31 out of engagement with the wrapped cigar and to engage a similar projection 44 at the rear, which latter likewise extends from the support 17 of the roller-carriage when said arm is in its normal position. The projections 43 and 44 thereby serve, in conjunction with the lower end of the projection 40, as stops to limit the movement of the arm 37 about its shaft 41, and the engagement of the projections 40 and 43 with each other also causes the roller-carriage, with all the parts carried thereby, to turn upon the shaft 15, as hereinafter more fully described.

At the header end of the machine, adjacent to the support 17 of the roller-carriage, as shown in Fig. 4, there is a plate 50 on the carriage, (shown in detail in Fig. 12,) the inner face of which is recessed at 51 to form part of the cavity which forms the tip of the cigar. The remaining portion of said cavity is formed by a curved plate 52, which is attached to the outer end of a rod 53, which is received by an opening formed in the plate 50. To the inner or rear end of the rod 53 is attached a lever 55, which is pivoted at 56 to the plate 50 and is pressed in one direction by a spring 54 and is connected by a link 57 with the adjacent end of the arm 37, whereby the movable portion of the cavity will be operated by the arm. The plate 50 has a horizontal arm 58 extending laterally from its lower end and formed with an opening 59 for the supply of paste to the tip-forming cavity.

On the support 17 of the roller-carriage is a paste-reservoir 60, of any suitable construc-

tion, which communicates with the opening 59 through the tube 61 usually employed for this purpose.

As seen in Fig. 5, the support 16 of the roller-carriage has a rearwardly-extending plate or projection 65, which supports a lug 66, (having an arm 130, shown in Fig. 7, for the purpose hereinafter stated,) that normally engages a worm 67 on the shaft 4, to the end that rotation of the shaft shall cause the carriage to be moved longitudinally on the shaft 15 from the left to the right hand end of the machine. The support 16 is further provided with a depending post 68, the lower end of which is engaged by one end of a coiled spring 69, as seen in Fig. 3. The other end of this spring is attached to a lug 70, projecting from the bed-plate 1, whereby the carriage is held yieldingly in position with the lug 66 in engagement with the worm.

To the support 16 a belt 71 is attached, as shown in Fig. 4, which extends to and around a pulley 72, journaled in the standard 3, and thence underneath the bed-plate 1 to a coiled spring 73, which connects it with a screw 74 or other suitable device depending from the bed-plate. This belt and spring operate to return the roller-carriage to the starting-place when the formation of a cigar is completed and the lug 66 is disengaged from the worm 67 and is particularly advantageous in that the spring operates with great force at the beginning and with gradually-decreasing power, whereby the return of the carriage starts quickly but ends slowly and without jar.

75 indicates a cutting-blade which lies against the outer face of the plate 50, as shown in Fig. 13, and is provided with a curved slot 76 near its upper end, as shown in Fig. 15. A thumb-lever 79 is provided with a vertically-disposed plate portion 78, which lies against the outer face of the blade, as seen in Figs. 13, 14, and 15, and this plate portion is pivoted on a screw 77 or other similar device, which passes through the slot 76 into the plate 50. The blade 75 is pivotally connected to the plate portion of the thumb-lever by means of a pin 80 or similar device to one side of the pivot of the lever to the plate 50. One corner of the cutting-blade 75 is provided with a stud 81, and a similar stud 82 projects from the rear corner of the thumb-lever 79, as clearly shown in Fig. 12.

84 indicates a coiled spring the arms 83 of which are respectively coiled on the studs 81 and 82, and the arm which is connected to the stud 81 extends below it and bears against the front face of the plate 50. Normally the parts occupy the position shown in Figs. 12 and 14. When, however, the thumb-lever is depressed, the blade 75 will move down with it until brought in contact with the upper face of the arm 58, when further downward movement of the thumb-lever will cause the lower end of the blade to move along on the face of the arm 58 and cut the wrapper with a draw cut, for during such downward movement of the lever the blade will turn on a pivot 80 and its upper end will move over the pivot-screw 77, slot 76 permitting such movement, and bring the two arms 83 of the spring toward each other, as shown in Fig. 15. As soon as pressure on the lever is removed the spring 84 will return the parts to their normal position.

85 designates an arm projecting from the lower part of the support 16 of the roller-carriage, as seen in Figs. 1 and 2, and 86 designates a longitudinally-movable rod which extends loosely through the upper portion of the support 16, near the front edge thereof, and is supported by a sleeve 87, having an arm which is secured to said end of the carriage. There is mounted in one end of the rod 86 a wrapper-holder the outer end of which comprises a bent wire 88, which is designed to hold the end of the wrapper against the butt-end of the bunch and rotates with the bunch. As seen in Fig. 17, the inner hollow end of the rod 86, which receives the wire, is provided with a removable cap 89, which is formed with an opening having flaring sides for the passage of the wire, whereby the wrapper-holder may easily be inserted or removed. In order that the wrapper-holder may be withdrawn from within the completely-formed cigar and again replaced in position to engage a bunch to be wrapped, the outer end of said rod 86 is provided with a stud 90, which is adjustably secured on said rod and is received by an elongated opening 91, formed in the upper end of a lever 92, which lever is pivoted at 98 to the arm 85 and has its lower end bifurcated and the parts 93 and 94 formed thereby bent in reverse directions. There is attached to the bed-plate 1 a plate 95, having an upwardly-bent end 96, formed with a slot 97. Thus it will be seen that in the operation of forming the cigar the wire 88 lies between the bunch and the wrapper and is rotated by the rotation of the bunch while the same is being wrapped and moves with the roller-carriage. When said carriage has almost reached that end of the machine at which the wrapping on the tip end of the cigar is completed, the bent end 93 of the lever 92 is brought into engagement with one side of the end 96 of the plate 95, which latter thereby acts as a stop to prevent further movement of the rod 86 by the roller-carriage, and as the movement of the latter is continued the lever 92 will be caused to turn upon its pivot 98, thus gradually withdrawing the wire 88 from the cigar. In the reverse movement of the roller-carriage the bent end 94 of the lever 92 engages said end 96 of the plate and returns the wire 88 to its former position, it being of course understood that said lever 92 and ends 93 and 96 are relatively so arranged and constructed that the former two shall pass beyond and out of engagement with the end 96 at a certain predetermined

place in the reciprocation of said roller-carriage. In order that the plate 95 may be adjusted to operate upon said lever 92 at different places in the reciprocation of said roller-carriage, which is important, as all cigars are not of the same length, said plate is formed with an elongated slot 99, through which a fastening-screw 100 passes into the bed-plate 1, as shown in Fig. 16.

Referring now to Fig. 3, 101 designates the vertically-adjustable table for supporting the wrapper. This table is hinged upon the upper end of a standard 102, as shown at 103, and the standard is provided with a rearwardly-extending lug 104, having an adjusting screw-rod 105 therein, the upper end of which bears against the rear portion of the table and supports the latter in adjusted position. The forward part of the table is engaged by the upper end of a spring 106, the lower end of which is attached to the front face of said standard 102, whereby the rear end of said table is held in engagement with the upper end of said adjusting screw or rod 105.

The operation of the device is as follows: The bunch is placed in the space between the rollers 18, 19, 30, and 31, with its tip in the tip-forming cavity, and the wrapper is properly located upon the wrapper-supporting table 101. The pulley 5 is connected by a belt with suitable power, and the roller-carriage is at the left-hand end of the machine, with the lug 66 engaged with the worm 67. The operator forces the free end of the lever 10 outward, thereby moving pulley 5 into frictional engagement with disk 7 and causing shaft 4 to be rotated and the roller-carriage to be fed toward the right-hand end of the machine. The rotary motion of the shaft 4 is also communicated to the several presser-rollers by the gearing above referred to, thus rotating the bunch and winding the wrapper thereupon. When the wrapper shall have been completely applied to the bunch, the roller-carriage will have reached the right-hand end of the machine and the wrapper-holder will be withdrawn from the cigar in the manner above described. The worm 67 terminates at a slight distance from the standard 2, so that lug 66 will be disengaged from the same and movement of the carriage thereby automatically stopped without jar. After the paste has been applied in the well-known manner and the excess of wrapper severed at the tip of the cigar in the manner above stated the rear end of arm 36 is depressed, thus moving arm 37 around the shaft 41. This initial movement of arms 36 and 37 about said shaft 41 raises the rollers 30 and 31 out of engagement with the wrapped cigar and also forces the movable side 52 of the tip-forming cavity out of engagement with the tip of the cigar, whereby the latter is released and may easily be removed, and also brings the projection 40 of the arm 37 into engagement with the stop 43 of the roller-carriage. Thus as the projection 26 on the gear-wheel 25 has reached the end of the keyway 27, formed in said shaft 15, continued pressure applied to said arm 36 will cause the roller-carriage to turn upon said shaft 15 against the force of the spring 69, thereby moving the lug 66 below the plane of the worm 67 and allowing the retactile-spring section 73 of the belt 71 to operate to return said carriage to its original position for the wrapping of another cigar. When the carriage has reached its original position and a bunch has been placed in position therein to be wrapped, pressure on said arm 36 is released, so that the spring 69 may operate to return the carriage to position to engage key 26 with the keyway 27 and lug 66 with the worm 67, and the spring 42 will operate on arm 37 to return the presser-rollers 30 and 31 into position to engage the bunch. During this return movement of the roller-carriage the wrapper-holder will automatically have been returned to position to engage the new bunch, as above stated.

It will be understood that the number of wraps of the wrapper upon the bunch depends upon the speed of the carriage in moving from one end of the machine to the other and that said speed is controlled by the pitch of the worm 67. In order that said pitch may be made adjustable, the worm instead of being formed upon the body of shaft 4 consists of a separately-formed wire, preferably square in cross-section, coiled spirally around the shaft. The shaft has external threads 110 formed therein near one end, which are engaged by an internally-threaded cap 111, to which one end of said worm is attached, the other end of which is rigidly engaged with said shaft, whereby by turning said cap in one direction or the other upon said shaft 4 the pitch of the worm may be increased or decreased, as desired.

Each side of the bifurcated front end of the arm 36 is slotted at 115, as shown in Fig. 20, and is formed with an upwardly-projecting lug 116 at the rear of said slot. A shaft 117 extends across said front end of the arm 36, and upon this shaft and located within the slots 115 are pivotally mounted two arms 118, each of which is formed with an upwardly-projecting lug 119, arranged in front of the lug 116 at its side of the arm 36. As shown in Figs. 3, 5, and 10, the arms 118 have forwardly-projecting studs 120, upon which are loosely mounted, so as to be adjustable forward or rearward thereon, the upper ends of the roller-supporting frames 34 and 35, respectively, said frames being held in adjusted position by the clamping-screws 121. Extending loosely through openings formed in the respective lugs 116 and screwed at their forward end in the lugs 119 are adjusting-screws 122, having heads 123 at their rear ends, and each of said screws is encircled by a coiled spring 124, whereby the angles of inclination of said frames 34 and 35 are inde-

pendently adjustable, and consequently the rollers 30 and 31 made to bear with greater or less force on the cigar being wrapped.

As shown in Fig. 1, the arm 36 is formed with an elongated slot 125, through which a clamping-screw 126 projects into the arm 37, whereby said arm 36 may be adjusted forward or rearward on said arm 37.

Referring now particularly to Figs. 6, 7, and 8, it will be seen that the lug 66, which engages the worm 67, as above stated, has an arm 130, which is located immediately beneath the shaft 4 and extends parallel therewith. This arm is movably mounted in a groove-way formed in the plate 65 and has a recess 131 near one end, which receives the end of a spring 132, projecting horizontally from the support 17 of the roller-carriage. In the operation of this part of the machine the worm-shaft turns a complete revolution (more or less) before the worm thereon engages said lug 66 and then turns an additional portion of a revolution, during which latter period it operates to force said lug, against the action of the spring 132, to the extreme of its movement in said plate 65, whereby feeding of the carriage does not commence as soon as the driving-shaft begins to operate and the presser-rollers are caused to rotate, but at a space of time thereafter which causes the end of the wrapper to have been partly wound on the bunch before the carriage begins its movement from one end of the machine to the other. While the carriage is moving from the left to the right hand end of the machine in wrapping a bunch, the end of the spring 132 engaged with the arm is depressed and the lug is held tightly engaged with the worm; but when the wrapping of the bunch has been completed and the lug is disengaged from the worm in the manner above described the spring 132 is freed and operates to throw said lug toward the left in position properly to reëngage the worm at the left-hand end of the machine. 133 designates an L-shaped stop which projects beyond the end of said plate 65 in the path of movement of the arm 130 and is adjustably attached to the plate 65 by the set-screw 134. As this stop limits the movement of the arm 130 upon the plate 65 and is adjustably secured in position, it will be seen that it serves to regulate the time elapsing between the beginning of the rotation of the driving-shaft and the feeding of the carriage and makes the time shorter when the bent outer end of the stop is nearer the edge of the plate 65 than when it is farther from said edge by reducing or increasing the extent of movement of the arm 130 upon the plate 65.

To limit the movement of the roller-carriage around the shaft 15, a stop 135 is provided, as seen in Figs. 3 and 5, which stop is attached to the rear side of the support 16, and when the carriage is tilted back the stop bears upon the worm 67.

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

1. The combination, in a cigar-rolling machine, of a driving-shaft having a worm, a carriage having a lug to engage said worm, presser-rollers supported by said carriage, a shaft upon which the carriage is loosely mounted and about which it is adapted to turn, a spring connected with the carriage for holding the lug yieldingly engaged with the worm, means for tilting the carriage to disengage the lug from the worm, and a belt attached at one end of the carriage and having a spring-section, as and for the purpose set forth.

2. The combination, with the shaft having a worm, and a second shaft having a lengthened keyway, said shafts being geared together, of a carriage loosely mounted on the second shaft, presser-rollers mounted on shafts journaled in the carriage, gears on the ends of the roller-shafts, a gear movable with said carriage and keyed on said second shaft and intermeshing with said gears on the roller-shafts, a lug projecting from the carriage into engagement with said worm, means for turning the carriage on its shaft to disengage said lug from the worm, and means for returning said carriage to the starting-place when the lug is disengaged from the worm, as and for the purpose set forth.

3. The combination with the worm-shaft, a second shaft, and a carriage loosely mounted on said second shaft and having a lug engaged with said worm, of a pivotally-supported arm carried by said carriage, presser-rollers carried by said arm, and connections between the arm and carriage whereby when the arm is tilted it will raise the presser-rollers relatively to the carriage and also turn the carriage upon its shaft, as and for the purpose set forth.

4. The combination with the carriage and means for feeding the same, of a pivotally-supported arm carried by the carriage, presser-rollers carried by the arm, and connections between said arm and the carriage whereby when the arm is tilted it will turn the carriage to disconnect the feeding means and also raise the presser-rollers relatively to said carriage, as and for the purpose set forth.

5. The combination with the carriage, and means for feeding the same, of an arm having presser-rollers at one end, a second arm pivoted in said carriage and attached to the first-mentioned arm, a projection from the second arm, and a stop projecting from the carriage in the path of said projection whereby the turning of the arm upon its pivot operates to turn the carriage so as to disconnect the feeding means thereof and to raise the presser-rollers relatively to the carriage, as and for the purpose set forth.

6. The combination with the carriage, and means for feeding the same, of an arm having presser-rollers at one end, a shaft supported by the carriage, a second arm loosely mounted

on the shaft and attached to the first-mentioned arm, a stop projecting from the carriage, a projection from the second arm located rearward of said stop and designed to engage the same when the second arm has been turned a short distance on its shaft, and a coiled spring encircling the shaft and secured at one end to the second arm and at its other end to the carriage, as and for the purpose set forth.

7. The combination with the driving-shaft, having a worm, a second shaft, a carriage loosely mounted on the second shaft and having a lug engaged with the worm, and a stop projecting from the carriage, of an arm, presser-rollers at one end of said arm, and a second arm pivotally mounted in the carriage and attached to the first-mentioned arm, the second arm having a projection so located with respect to the stop as that it will engage the same after it has turned a short distance, whereby tilting of the first-mentioned arm causes said presser-rollers to be lifted within the carriage and also disengages said lug from the worm, as and for the purpose set forth.

8. The combination with the driving-shaft, and a second shaft geared therewith, of a carriage movable on said second shaft, gearing to connect the driving-shaft and carriage to move the latter along the second shaft, a stop projecting from the carriage, an arm, presser-rollers at one end of said arm, a second arm pivotally mounted in the carriage and attached to the first-mentioned arm, the second arm having a projection so located with respect to the stop as that it will engage the same after it has turned a short distance, whereby tilting of the first-mentioned arm lifts the presser-rollers relatively to the carriage and disconnects the driving-gearing of the carriage, and means for automatically returning the carriage to the starting-place when its driving-gear is disconnected, as and for the purpose set forth.

9. The combination in a cigar-rolling machine, of a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, a movable rod carrying the latter plate, a spring to normally hold the plates in engagement, a pivoted arm, and connections between the pivoted arm and movable plate, operated by the arm to force the movable plate outward, as and for the purpose set forth.

10. The combination, in a cigar-rolling machine, of a pivotally-supported arm, presser-rollers supported by the arm, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, and connections between the arm and movable plate, whereby tilting of the former operates both to lift the presser-rollers and open the tip-forming cavity, as and for the purpose set forth.

11. The combination, in a cigar-rolling machine, of a pivotally-supported arm, presser-rollers carried thereby, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other portion of said cavity, a movable rod carrying said movable plate, a pivoted spring-pressed lever engaged with said rod, and a link connecting the upper end of said lever with the pivoted arm, as and for the purpose set forth.

12. The combination, in a cigar-rolling machine, of a pivotally-mounted carriage, rollers carried thereby, gearing for feeding said carriage from one end of the machine to the other, and an arm pivotally supported within the carriage, presser-rollers carried by the arm, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of said cavity, connections between the pivoted arm and movable plate for causing the latter to be moved by the tilting of the former, and connections between the pivoted arm and carriage for causing said arm to tilt the carriage and thereby disconnect said feeding means, as and for the purpose set forth.

13. The combination in a cigar-rolling machine, of a feeding-worm, a pivotally-mounted carriage, having a lug engaged with the worm, rollers in the carriage, an arm pivotally supported in the carriage, presser-rollers at the forward end of the arm, a stop extending from the carriage, a projection movable with the arm and so arranged with respect to said stop as to engage the same after the arm has been tilted a certain distance, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of the cavity, connections between said pivoted arm and movable plate for causing the latter to be moved by the former whereby the tilting of the pivoted arm raises the presser-rollers carried thereby, opens the tip-forming cavity and disconnects the feeding-gear of the roller-carriage, and means for returning said carriage to the starting-place when the feeding-gear is disconnected, as and for the purpose set forth.

14. The combination, in a cigar-rolling machine, with a feeding-worm, a pivotally-mounted carriage having a lug engaged with the worm, rollers in the carriage, a stop 43 projecting from one end of the carriage, and a shaft 41 at the rear end of the carriage, of an arm loosely mounted on said shaft and having a projection arranged to engage said stop when the arm has turned a certain distance less than the full extent of its movement, a plate constructed to form a part of the tip-forming cavity, a movable plate forming the other part of said cavity, a movable rod carrying the movable plate, a pivoted lever attached at one end to the rod, a link connecting the other end of the lever with the arm, a second arm attached between its end to the first-mentioned arm, and presser-rollers at the forward end of said second arm, as and for the purpose set forth.

15. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an

arm 36, a pivotally-supported frame connected with the forward end of said arm, means for adjusting the frame relatively to the arm, and a presser-roller journaled in said frame, as and for the purpose set forth.

16. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an arm 36 having an upwardly-projecting lug, a second arm 118 pivotally attached to the forward end of the arm 36 and having a lug in front of the lug on the same, an adjusting-rod threaded in one of said lugs and extending loosely through the other lug, a spring encircling the rod between the lugs, a frame supported by the second arm, and a presser-roller journaled in the frame, as and for the purpose set forth.

17. The combination, in a cigar-rolling machine, of rollers for supporting the bunch, an arm 36, a second arm pivotally attached to the forward end of the arm 36 and having a forwardly-projecting stud, a frame adjustably mounted on said stud, means for adjusting the inclination of the second arm relatively to the arm 36, and a presser-roller supported by said frame, as and for the purpose set forth.

18. The combination, in a cigar-rolling machine, with rollers for supporting the bunch, an arm having an elongated slot intermediate its ends and an upwardly-projecting lug near its front end, and a clamp-screw extending through said slot and serving to secure the arm adjustably to its support, of a second arm, pivotally attached to the forward end of said first-mentioned arm and having a forwardly-projecting stud and an upwardly-projecting lug, an adjusting-rod threaded in one of said lugs and extending loosely through the other lug, a spring encircling said rod between the lugs, a frame adjustably mounted on the stud, and a presser-roller journaled in the frame, as and for the purpose set forth.

19. The combination, in a cigar-rolling machine, with rollers for supporting the bunch, of a forwardly and rearwardly adjustable arm, a second arm pivotally mounted on said first-mentioned arm, means for adjusting the inclination of the second arm relatively to the other arm, a frame carried by the second arm and adjustable forward and rearward thereon, and a presser-roller journaled in said frame, as and for the purpose set forth.

20. The combination, in a cigar-rolling machine, with the rollers for supporting the bunch, of a pivoted arm having a bifurcated front end, a shaft extending across said front end of the arm, adjustable arms 118 pivotally mounted on the ends of said shaft, means for holding the latter arms independently in adjusted position, separate frames independently adjustable forward and rearward on said arms 118, and rollers journaled in said frames, as and for the purpose set forth.

21. The combination, in a cigar-rolling machine, with a shaft 15, a carriage thereon, means for driving said shaft, two roller-carrying shafts journaled in said carriage, one being slightly above and rearward of the other, gears on the ends of said shafts, a gear on said shaft 15 meshing with each of the other gears, and a roller 20 frictionally engaged with a roller on one of said shafts, of a pair of rollers, 30 and 31 arranged end to end above the lower of said previously-mentioned rollers and frictionally engaged with said roller 20, and a pivotally-supported arm carrying said rollers, 30 and 31, as and for the purpose set forth.

22. The combination, in a cigar-rolling machine, with the driving-shaft, a second shaft having a lengthened keyway, said shafts being geared together, a worm on the driving-shaft, a carriage loosely mounted on said second shaft and having a lug engaged with the worm, and a gear on said second shaft movable with the carriage and having a key traversing the lengthened keyway, of a pair of rollers mounted on shafts journaled in said carriage, gears on the ends of said roller-shafts, both of said gears intermeshing with the gear on said second shaft, a third roller frictionally engaged with one of said pair of rollers, a pair of rollers, arranged end to end and both in frictional engagement with said third roller, a pivoted arm supporting the latter pair of rollers, and connections between the pivoted arm and the carriage, whereby the tilting of the arm first raises the pair of rollers carried thereby and finally turns the carriage upon its shaft 15, as and for the purpose set forth.

23. In a cigar-rolling machine, means for supporting and rotating the bunch, said means containing a frictionally-driven roller, a normally stationary shaft having an eccentrically-set cylindrical part on which the roller turns, and means whereby the shaft may be turned in the bearing, as and for the purpose set forth.

24. In a cigar-rolling machine, the combination with bunch-supporting rollers, of a roller 20 driven by frictional engagement with one of such rollers, a roller driven by the roller 20, a normally stationary shaft having an eccentrically-set cylindrical portion on which the roller 20 turns, and means whereby the shaft may be turned in its bearing, as and for the purpose set forth.

25. In a cigar-rolling machine, means for supporting and rotating the bunch, said means containing a frictionally-driven roller, a shaft having an eccentrically-set cylindrical portion within the roller and on which the latter turns, a split sleeve supported on the machine and in which the shaft may be turned, and a screw to clamp the sleeve on the shaft and prevent the latter from turning in the former, as and for the purpose set forth.

26. In a cigar-rolling machine, the combination with a movable carriage, rollers 18 and 19 carried thereby and arranged one above and rearward of the other, rollers 30 and 31 arranged end to end, and a pivotally-supported arm 36 carrying said rollers 30 and 31,

of a roller 20 frictionally engaged with each of said rollers 19, 30 and 31, a normally stationary shaft having an eccentrically-set cylindrical portion on which the roller 20 turns, and means whereby the shaft may be turned in its bearing to cause the roller 20 to bear with greater or less pressure upon the rollers 19, 30 and 31, as and for the purpose set forth.

27. In a cigar-rolling machine, the combination with the wrapping mechanism, of a severing-knife, an operating-lever to which said knife is pivoted, a spring connecting said lever and knife, and a stationary arm adjacent to the cutting-point of said knife whereby the knife will operate to make a draw cut, as and for the purpose set forth.

28. In a cigar-rolling machine, the combination with the wrapping mechanism, of a knife having an elongated slot at one end, a thumb-lever having a vertical portion, a pivot for the vertical portion of the lever, said pivot extending through the elongated slot and the knife and vertical portion of the lever being pivoted together, a spring connection between the knife and lever, and relatively a stationary arm adjacent to the cutting portion of the knife, whereby the knife acts on said arm with a draw action, as and for the purpose set forth.

29. In a cigar-rolling machine, the combination with the wrapping mechanism, and a plate adjacent thereto at the header end of the machine said plate having a tip-forming cavity and being provided with a horizontally-projecting arm, of a knife having an elongated slot at one end, a thumb-lever having a vertical portion pivoted on a stud projecting through said slot into the plate, the knife and lever being pivoted together, a spring connecting the knife and lever together, as described, whereby the knife will operate on the horizontal arm of the plate with a draw action, as and for the purpose set forth.

30. In a cigar-rolling machine, the combination with the driving-shaft, the carriage carrying presser-rollers, and means for rotating said presser-rollers simultaneously with the rotation of the driving-shaft, of a worm on said driving-shaft and a lug projecting from the carriage, the worm and lug being normally out of engagement when the carriage is at rest at its starting-point, whereby the shaft will rotate before the worm is operatively engaged with the lug, as and for the purpose set forth.

31. In a cigar-rolling machine, the combination with the driving-shaft, and the carriage carrying presser-rollers, of a worm on said driving-shaft, and a spring-pressed movable lug projecting from said carriage and engaged by the worm, as and for the purpose set forth.

32. In a cigar-rolling machine, the combination of the pivotally-mounted carriage carrying presser-rollers, a worm, a spring-pressed movable lug projecting from said carriage and engaged with the worm, and means for tilting the carriage to disengage the lug from the worm, as and for the purpose set forth.

33. In a cigar-rolling machine, the combination of the pivotally-mounted carriage carrying the presser-rollers, a projection from the carriage having a grooved way, a lug having an arm movably mounted in said way, a spring engaging one end of the arm and a stop at the other end thereof, a worm engaged by said lug, means for tilting the carriage to disengage the lug from the worm, and means for returning the carriage to the starting-place when the lug and worm are disconnected, as and for the purpose set forth.

34. In a cigar-rolling machine, the combination with the roller-carriage, and means for feeding the same, of a wrapper-holder, a pivoted lever connected with said wrapper-holder on the carriage, and a stop-plate acting on said lever to withdraw and replace the wrapper-holder, as and for the purpose set forth.

35. In a cigar-rolling machine, the combination with the roller-carriage and means for feeding the same, of a wrapper-holder, comprising a longitudinally-movable rod supported in the carriage, a bent wire having one end journaled in the inner end of said rod, a lever pivoted between its ends on a support movable with the carriage and having its upper end adjustably attached to the rod and its lower end bifurcated and bent in reverse directions, and a longitudinally-adjustable plate on a fixed part of the machine having a bent end arranged in the path of the lower end of said lever and operating thereon to withdraw and replace said wrapper-holder, as and for the purpose set forth.

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

JOHN BUNN.

Witnesses:

ASAHEL W. CUMMING,

ROBT. MCK. ACKERMAN.