

No. 631,330.

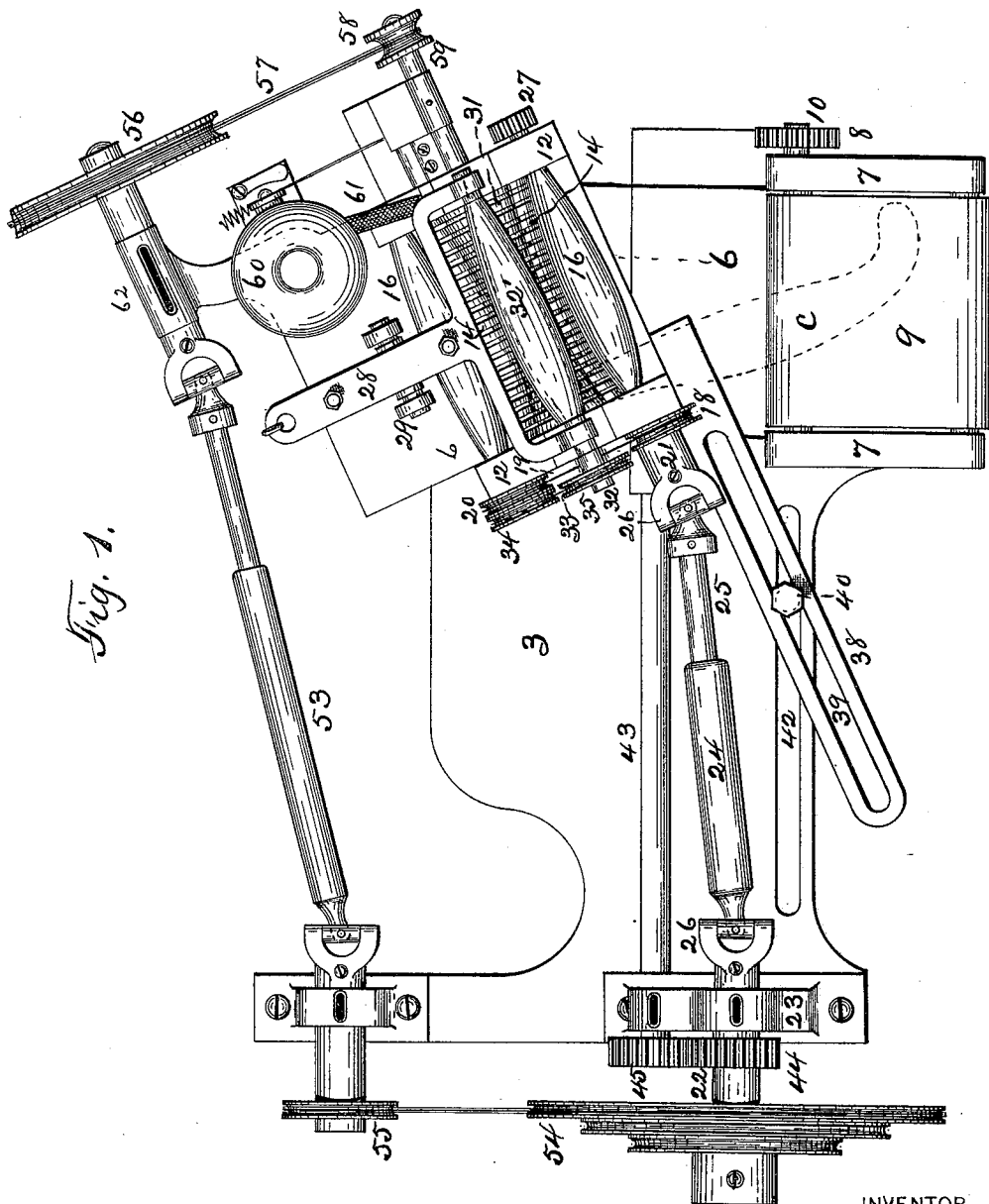
Patented Aug. 22, 1899.

R. M. RUSSELL.
CIGAR ROLLING MACHINE.

(No Model.)

(Application filed Jan. 31, 1898.)

4 Sheets—Sheet 1.



WITNESSES:

W. Schoeneck
Mary A. Franklin

INVENTOR

Ross M. Russell.

BY

Smith & Denison

ATTORNEYS.

No. 631,330.

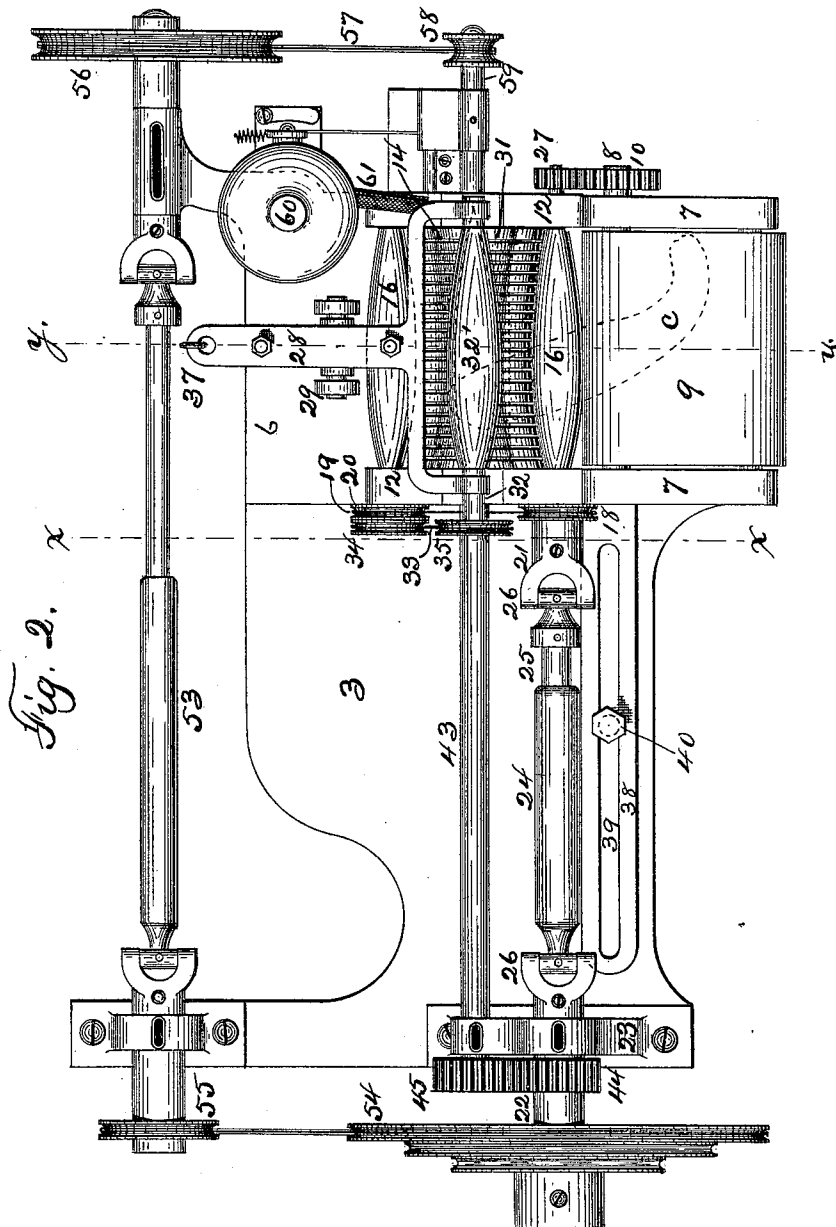
Patented Aug. 22, 1899.

R. M. RUSSELL.
CIGAR ROLLING MACHINE.

(Application filed Jan. 31, 1898.)

(No Model.)

4 Sheets—Sheet 2.



WITNESSES:

W. Schoenebeck
Mary A. Franklin

INVENTOR

Ross M. Russell.
BY

Smith & Denison
ATTORNEYS.

No. 631,330.

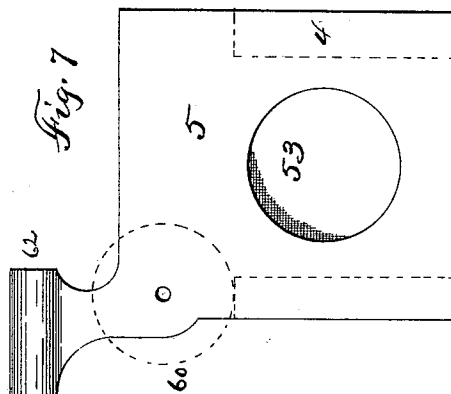
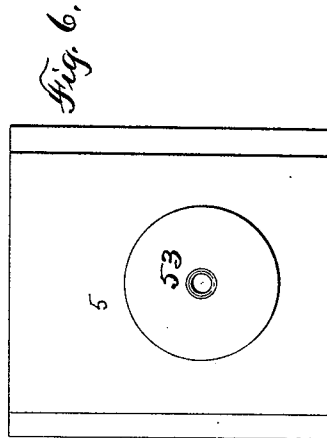
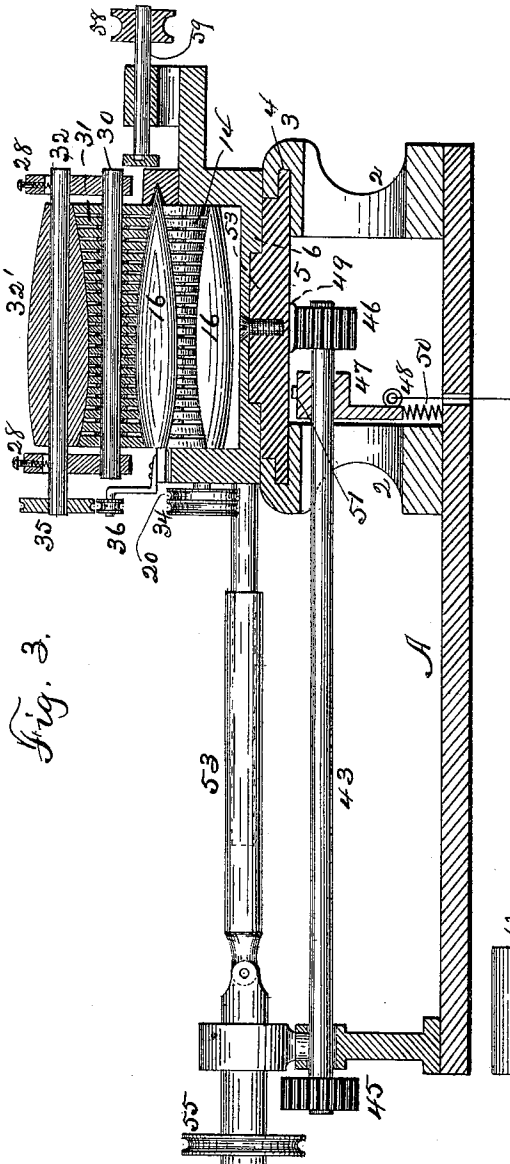
Patented Aug. 22, 1899.

R. M. RUSSELL.
CIGAR ROLLING MACHINE.

(Application filed Jan. 31, 1898.)

(No Model.)

4 Sheets—Sheet 3.



WITNESSES

Chas. Schenck
Mary A. Franklin

INVENTOR

Ross M. Russell,

BY

Smith & Denison

ATTORNEYS.

No. 631,330.

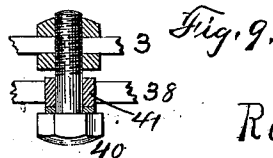
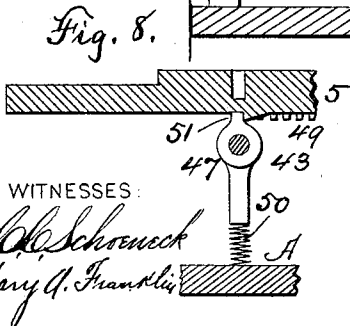
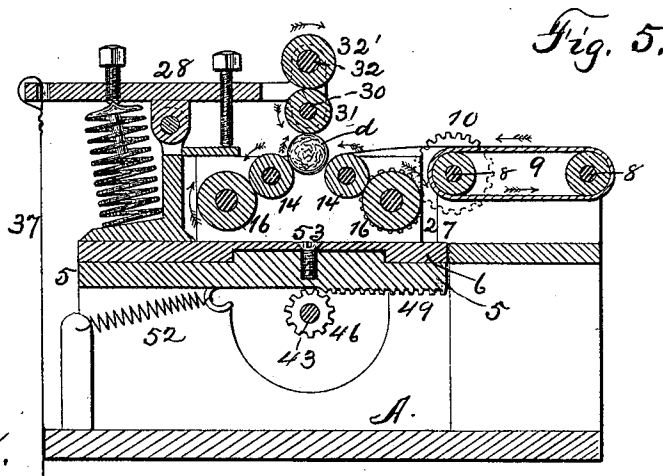
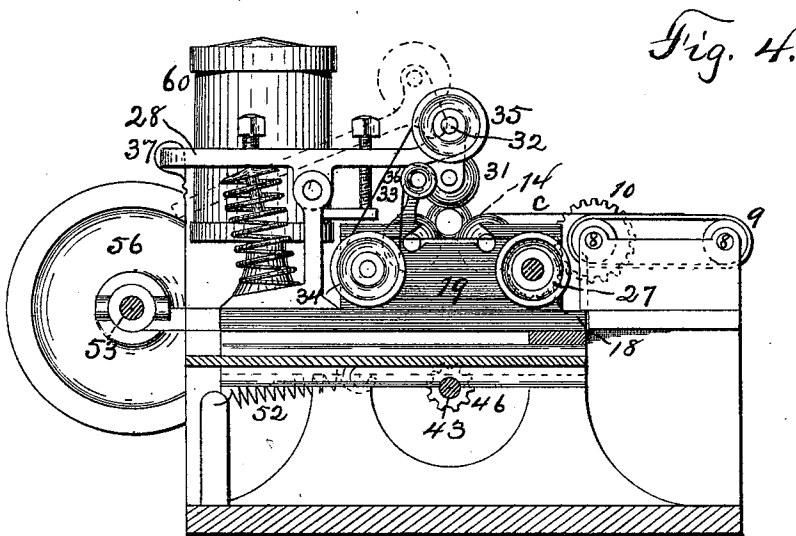
Patented Aug. 22, 1899.

R. M. RUSSELL.
CIGAR ROLLING MACHINE.

(Application filed Jan. 31, 1898.)

No Model.)

4 Sheets—Sheet 4.



WITNESSES:

W. Schonebeck
Harry A. Franklin

INVENTOR

Ross M. Russell.

BY

Smith & Denison
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ROSS M. RUSSELL, OF BINGHAMTON, NEW YORK, ASSIGNOR TO THE KEYES-BAKER CIGAR ROLLING MACHINE COMPANY, OF SAME PLACE.

CIGAR-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 631,330, dated August 22, 1899.

Application filed January 31, 1898. Serial No. 668,538. (No model.)

To all whom it may concern:

Be it known that I, ROSS M. RUSSELL, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Cigar-Rolling Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to cigar-bunch-rolling machines.

My object is to produce a novel machine of this class in which a slide is mounted to traverse stationary ways, a feed-apron mechanism mounted upon said slide, and a table carrying a bunch-rotating mechanism is pivoted upon said slide, whereby when said slide is in its rearward or normal position said bunch-table will stand at an angle to said apron and will be separated therefrom, and when said slide is moved forward said bunch-table is swung upon its pivot until the bunch-rotating mechanism is brought into parallelism with said apron, the tuck of the cigar being formed and wrapped during this swinging movement and thereafter the balance of the cigar being rolled into the wrapper, all being a counter-part of the work done by a hand-workman who places a bunch upon the table with the tuck end nearest to him, starts the wrapper thereon, and as he rolls the bunch into it swings the bunch around, so that at about the time when the tuck is finished the bunch lies substantially parallel to the operator. In this machine the bunch is thus swung until its axis of rotation is substantially, if not actually, parallel to the face of the endless wrapper-feeding apron. Also during this swing this apron is stationary, and the movement brings a continuously-revolving gear into engagement with the apron-driving pinion at substantially the time when said swing ceases. Also the bunch-rotating mechanism operates continuously both during said swing and thereafter in whatever position the bunch-table may be. Also a machine in which the bunch as it is gradually swung toward the operator is rolled onto and into the stationary wrapper, and after said swing ceases the wrapper is fed to the rotating bunch, and in which the bunch-rolling chamber is surrounded and created wholly or partially by a series of roll-

ers each comprising an arbor and loose spaced-apart disks thereon of varying size complementary to the contour of a cigar, and all of said disks are driven by solid driving-rollers convex longitudinally to fit the concavity of the disk-rollers, respectively.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a top plan of the machine, showing the bunch-rolling frame in its normal position. Fig. 2 is a top plan of the same, showing the bunch-rolling frame shifted into engagement with the apron-driving mechanism and ready to assume the secondary or straight-forward movement. Fig. 3 is a vertical longitudinal section. Fig. 4 is a vertical transverse section on line *xx*, Fig. 2. Fig. 5 is a like view on line *yy* in Fig. 2. Fig. 6 is a top plan of the slide. Fig. 7 is a bottom plan of the bunch-table. Fig. 8 is a sectional detail of the stop mechanism. Fig. 9 is a sectional detail of the fulcral connection of the bunch-table to the bed of the machine.

A is the main bed or frame, erected upon suitable supports, legs, or standards, (not shown,) and by standards 2 the stationary table 3 is erected thereon, being provided with ways 4 to receive the slide 5, provided with pillars 7, in which the shafts and rollers 8 are suitably journaled to carry and drive the endless wrapper-feed apron 9 whenever power is applied to the pinion 10. A swinging bunch-table 6 is pivoted upon the table 3 and is provided with parallel pillars 12, normally out of alinement with the pillars 7, as in Fig. 1. In these pillars 12 arbors are suitably journaled, part of which carry the disk-rollers 14 and part carry and drive the solid driving-rollers 16, which in turn engage with and drive the several disk-rollers. One of these shafts is in extension of the main driving-shaft section 21, which drives the pulley 18, and by the belt 19 and pulley 20 drives the rear auxiliary shaft carrying a roller 16. The main drive-shaft comprises end sections, one, 21, journaled in the pillars 12, and the other, 22, in pillars 23 on the table 3 and intermediate sections, 24 25, adapted to slide one into or upon the other, according to the variation in the distance between the pillars 12 and 23, and these sections are connected to the other

sections by the universal joints 26. Power is applied to this drive-shaft in any suitable manner, and the driving of the forward driving-roller 16 drives the gear 27 upon its shaft.

5 A bifurcated frame 28, pivoted at 29, carries a shaft 30 and a presser-roller 31, and a shaft 32 carries a driving-roller 32', which is driven by a belt 33 over the pulleys 34 35 and idler 36, said presser-frame being operated to raise

10 said presser-roller, which constitutes the top of the bunch-rolling chamber to open it to permit the insertion or removal of a bunch by means of a cord 37 and a treadle. (Not shown.) The swinging bunch-table 6 is provided with a fulcrum-arm 38, provided with a slot 39, and 40 is a guide-bolt through an

15 antifricition-roller 41 in said slot and through a slot 42 in the table 3. It will thus be seen that the bunch-rolling chamber is created by

20 three rollers 14 14 and 31, each driven by a separate driving-roller 16 16 and 32', respectively, and as these driven or disk rollers are alike only one will be described. It consists of a central shaft or arbor upon which a series of alternating disks *a* and washers *b* are

25 strung or mounted loose, the washers operating to space said disks apart, whereby all can be revolved by the solid driving-roller either at the same speed or at different speeds, according to the ratio of the diameter of any disk

30 to that of the portion of the face of said driving-roller which engages with such disk. The rotation of these disks, which are of varying radii, whereby the roller is made concave longitudinally, according to the varying convexity of a cigar, rotates the bunch *d*, placed

35 in the chamber between said disk-rollers, held therein by the presser-frame and its disk-roller. The bunch-table and bunch-rotating mechanism being in the respective positions

40 shown in Fig. 1 and the wrapper-feed apron 9 being then stationary and the bunch being placed in the rolling-chamber, the end of the wrapper *c* being usually inserted and the

45 bunch laid onto it. The bunch is then in such alinement that its tuck end is nearer the operator than the head or tip, which is the identical position in which a hand-workman places it to make the tuck, the rolling

50 mechanism is started, and the rotating bunch is rolled onto the then stationary wrapper and the tuck formed and rolled. As this is being done, the bunch-table carrying the rolling mechanism is gradually swung forward

55 by the movement of the slide. At about the time the tuck is completed and the wrapper rolled onto it, as shown in Fig. 2, the pillars 7 and 12 come into alinement and the bunch-rolling frame is in alinement with the wrapper-feed apron, the swing stops, the gear 27

60 then meshing with and driving the pinion 10 starts said apron to feed the wrapper into the bunch-rolling chamber, and the revolving disks smooth and stretch it and cause it to

65 smoothly conform to the contour of the bunch and at the same time shape and control the form of the bunch and cause the helices of

the wrapper to be even and their laps tight and free from pockets. This adapts this machine particularly to the rolling of soft or

70 hand-made bunches, but it will also roll hard or mold bunches.

Any suitable style of header or tip-former can be used, and for that reason none is shown or described.

75

A gear 44 on the shaft 22 drives the pinion 45, shaft 43, and pinion 46. Adjacent to the pinion 46 this shaft is carried by a sleeve 47, and a cord 48 connects it to a suitable treadle. (Not shown.) This pinion is normally

80 in mesh with the rack 49 on the slide 5, near the front end thereof, being held there yieldingly by the spring 50. When the machine starts to rotate the bunch, this pinion begins to carry the slide and bunch-table forward,

85 and at about the time it reaches the limit of its forward movement and just after said table reaches its position at the front of the wrapper-feed apron the stud 51 on the sleeve passes over the inclined lug, (shown in Fig. 8,)

90 throwing said pinion out of engagement with said rack and stopping the movement of said slide and holding it there to prevent its retraction by the spring 52, and thus prevent further forward movement while the rolling

95 is being completed and the head formed and rolled. Then when the cigar is finished and removed the operator operates the cord 48 to release the slide from the stop-stud 51, and the spring 52 retracts the slide, and this

100 swings the bunch-table back into the position shown in Fig. 1 angular to the line of the apron. A second sectional and flexible shaft 53, journaled in the bearing 62 on the bunch-table, is driven by the pulleys 54 55 to drive

105 the pulley 56, belt 57, pulley 58, and header-shaft 59, which operates a header mechanism like that shown in my application filed December 10, 1897, Serial No. 661,346, and of which 60 is the paste-reservoir and 61 is the

110 paste-conduit, and is not specifically described, as it is not a part of this invention.

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

115

1. In a cigar-bunch-rolling machine, the combination with a pair of concaved rollers upon parallel axes, each comprising an arbor and loose spaced-apart disks thereon, of solid driving-rollers convex to engage with the

120 disks of each roller to drive them to rotate a bunch.

2. In a cigar-bunch-rolling machine, a concaved roller comprising an arbor and loose, spaced-apart, disks thereon of varying radii,

125 in combination with a solid driving-roller convex to fit the concavity of the disk-roller and engage with and drive said disks to rotate an object in contact therewith.

3. In a cigar-bunch-rolling machine, a

130 presser-frame and a shaft and an arbor mounted therein parallel to each other, in combination with loose, spaced-apart disks upon said arbor, and a solid driving-roller on said

shaft having a contour to engage with and drive said disks to rotate an object in contact with them.

4. In a cigar-bunch-rolling machine, a plurality of rollers each consisting of an arbor and loose, spaced-apart disks thereon arranged in parallel planes, in combination with driving-rollers upon shafts respectively parallel with said respective disk-roller, arbors, creating a bunch-chamber between said disk-rollers and whereby a bunch is rotated by them in said chamber, and a frame carrying one set of driving and disk rollers and vertically movable, to open and close said chamber.

5. In a cigar-bunch-rolling machine, the combination with a bunch-table, a bunch-rotating mechanism thereon, and means to drive said mechanism, of a wrapper-feed apron normally stationary and means to swing said table into a position whereby the power applied to said rotating mechanism is thereby and thereafter applied to said apron to move it.

6. In a cigar-bunch-rolling machine, a movable support, a bunch-rotating mechanism pivoted thereon and having a lateral fulcral-bearing separate from said support, and means to reciprocate said support whereby said bunch-rotating mechanism is reciprocated and swung upon its pivot against said lateral bearing, and the direction of the axis of a rotating bunch is varied, with reference to the operator.

7. In a cigar-bunch-rolling machine, a pivotal support reciprocatingly movable in a direct line, combined with a bunch-rotating mechanism having a pivotal bearing upon said support, and a separate lateral fulcral bearing, and normally presenting the axis of a rotating bunch at an angle to the direction of said movement, and means to shift said support whereby the axis of said bunch is brought into coincidence with the direction of said movement.

8. In a cigar-rolling machine, a table and bunch-rotating rollers erected thereon, creating a bunch-chamber between them, and means to shift said table combined with a normally stationary wrapper-feed apron, whereby the bunch in said chamber is primarily rolled onto a stationary wrapper with the swing of said table, and thereafter said table is brought into position to connect the bunch-rotating apron to feed the wrapper to said bunch.

9. In a cigar-bunch-rolling machine, the combination with a bed and a reciprocatory slide mounted thereon, of a bunch-table pivoted upon said slide and a bunch-rotating mechanism upon said table, whereby the forward movement of said slide carries said table forward and swings it upon its pivot to

vary the presentation of the bunch-rotating devices to the operator.

10. In a cigar-bunch-rolling machine, the combination with a stationary table, a wrapper-feed apron mounted thereon and normally at rest, and a reciprocatory slide upon said table, of a table pivoted on said slide, a bunch-rotating mechanism mounted upon said table, and means whereby the forward movement of said slide will swing said table forward to said apron, and connect the driving devices of the bunch-rolling mechanism to devices for driving said apron to thereafter feed the wrapper.

11. In a cigar-bunch-rolling machine, the combination with a bed, a slide thereon, and a rack upon said slide, of a bunch-table pivoted upon said slide, a bunch-rolling mechanism on said table, a pinion engaging with said rack to carry said slide forward, and means to stop it at a predetermined point when the movement of said slide has swung said table upon its pivot to a fixed degree.

12. In a cigar-bunch-rolling machine, the combination with a stationary table, an endless feed-apron erected thereon, a slide upon said bed, and a rack upon said slide, of a bunch-table pivoted upon said slide, a pinion engaging with said rack to carry said slide forward and swing it into coincidence with said apron, and means to then stop said compound movement without stopping the bunch-rotating devices carried by said table.

13. In a cigar-bunch-rolling machine, the combination with a stationary table, an endless feed-apron erected thereon, a reciprocating slide upon said table, a rack upon said slide of a table pivoted upon said slide, a bunch-rotating mechanism upon said table, a pinion engaging with said rack to carry said slide forward and simultaneously swing said table and bunch-rotating mechanism into coincidence with said apron, and means to stop said compound movement without stopping the bunch-rotating mechanism.

14. In a cigar-bunch-rolling machine, the combination with multiple bunch-rotating rollers concaved longitudinally and creating a bunch-rolling chamber between them and each consisting of an arbor and disks spaced apart, and free to revolve upon it, of a solid roller convex to engage with the disks of each roller, and means to drive said solid rollers to revolve said disks.

Signed by me at Binghamton, in the county of Broome and State of New York, this 15th day of January, 1898.

ROSS M. RUSSELL.

Witnesses:

P. H. REED,
W. M. HAND.