

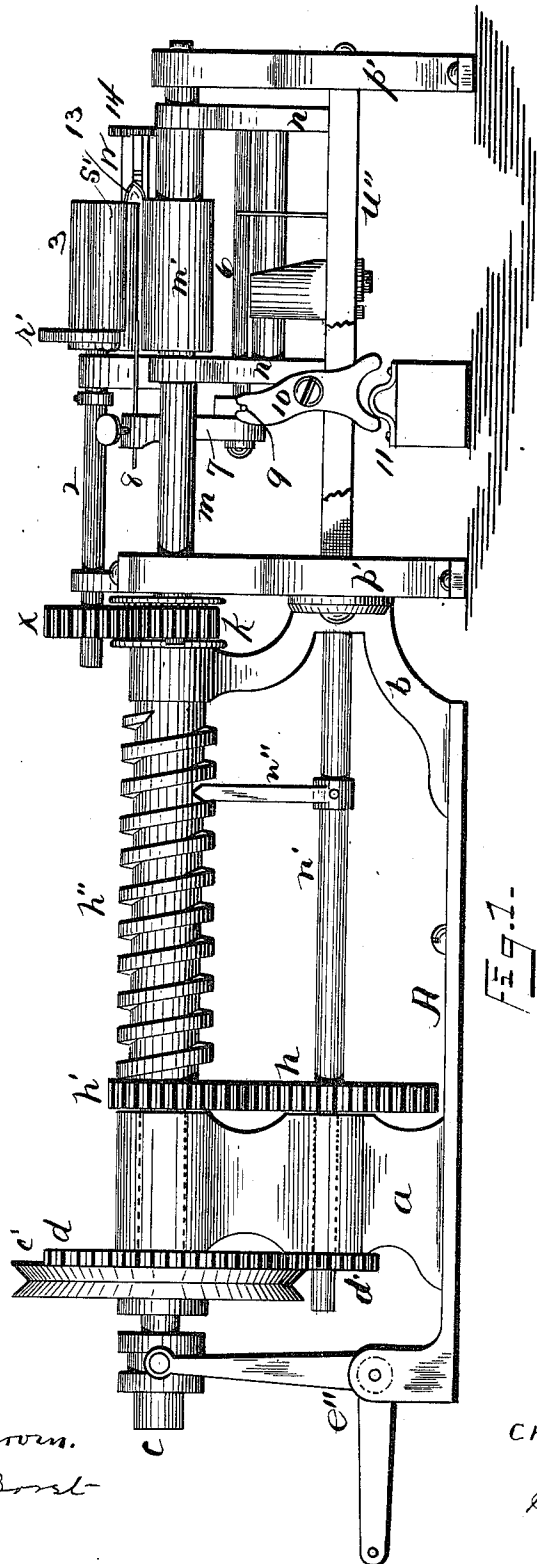
(No Model.)

4 Sheets—Sheet 1.

F. R. KEYES, C. A. BAKER & J. BUNN.
CIGAR BUNCH ROLLING MACHINE.

No. 566,325.

Patented Aug. 25, 1896.



WITNESSES:

Chas. H. Marvin.

M. M. Bond

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Charles A. Baker.
BY *John Bunn.*
Smith & Benson
ATTORNEYS.

(No Model.)

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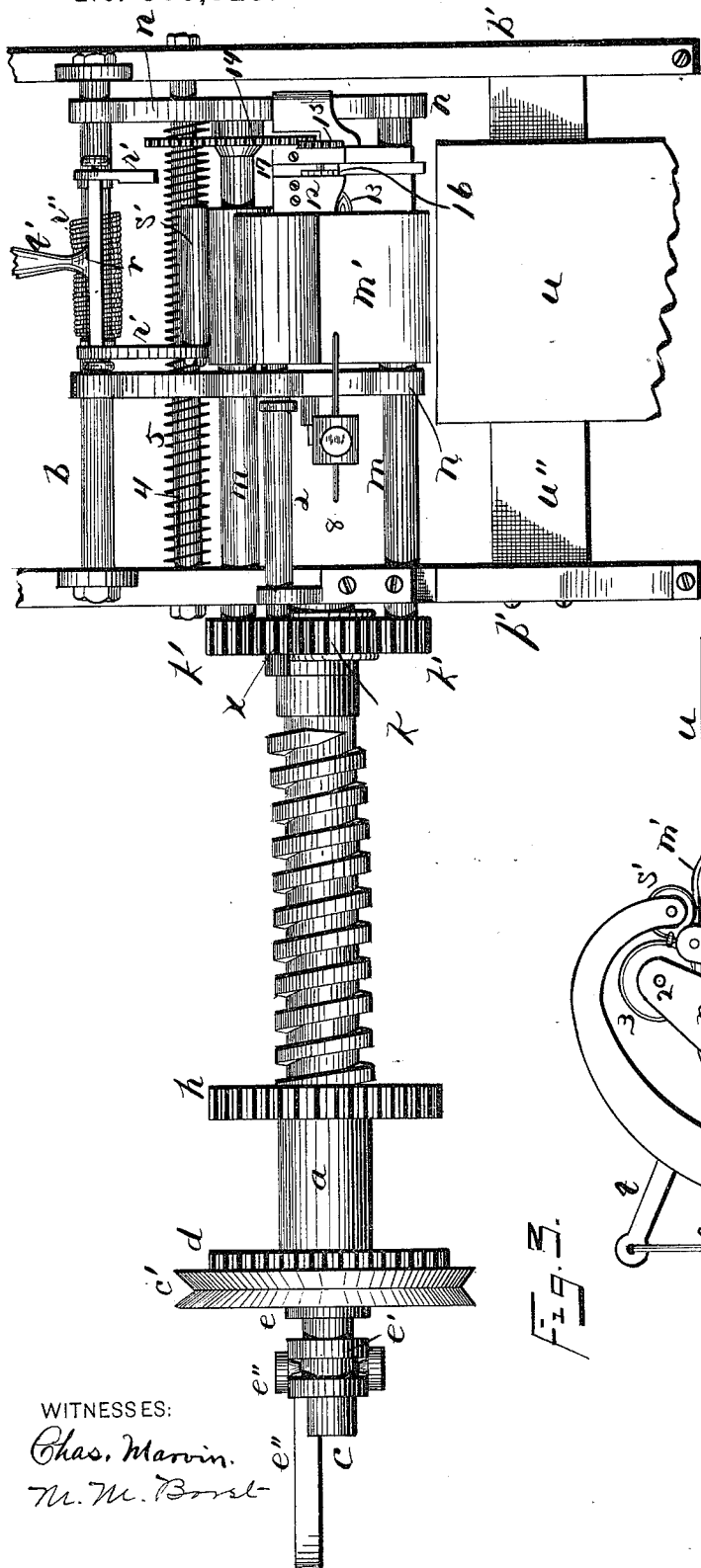
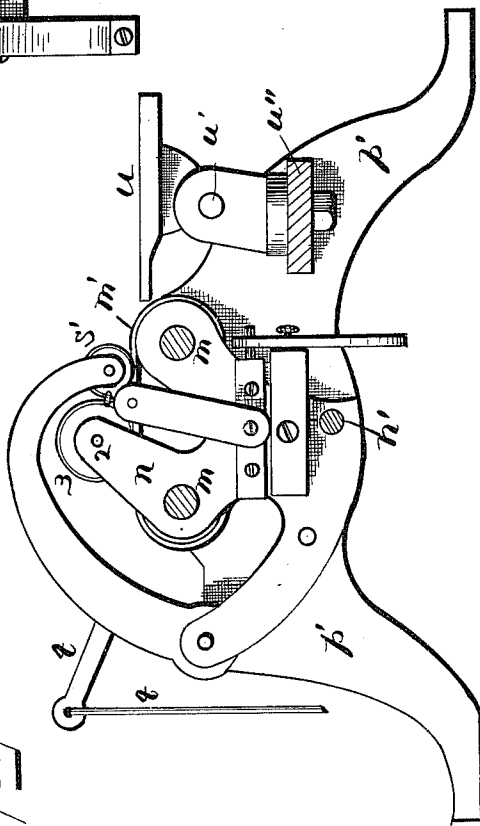


Fig. 2.



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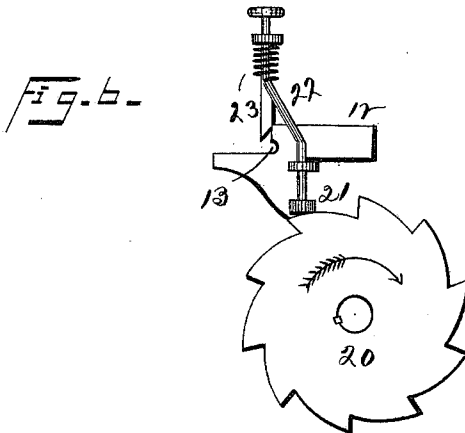
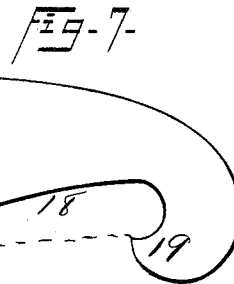
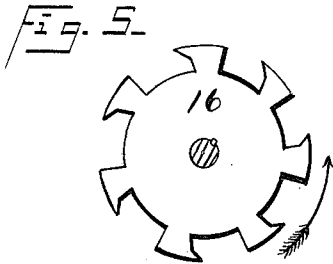
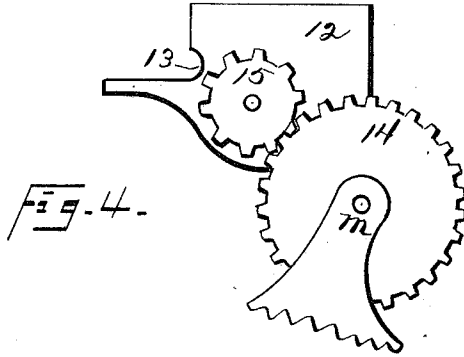
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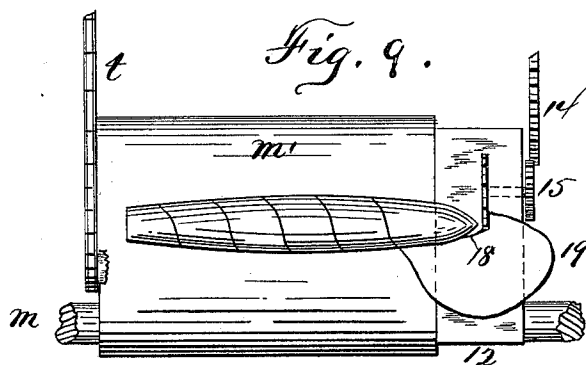
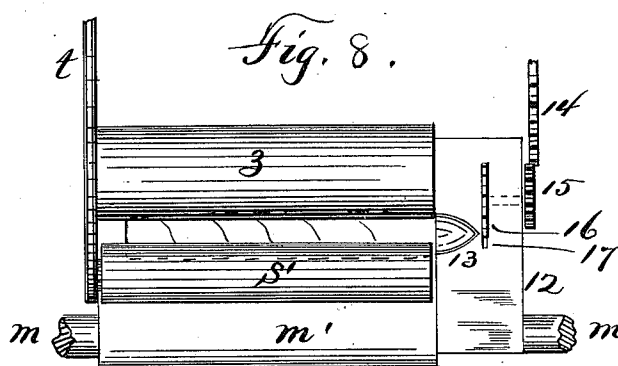
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UNITED STATES PATENT OFFICE.

FRANK R. KEYES, CHARLES A. BAKER, AND JOHN BUNN, OF BINGHAMTON,
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CIGAR-BUNCH-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 566,325, dated August 25, 1896.

Application filed January 4, 1894. Serial No. 495,580. (No model.)

To all whom it may concern:

Be it known that we, FRANK R. KEYES, CHARLES A. BAKER, and JOHN BUNN, of Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Cigar-Bunch-Rolling Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to cigar-bunch-rolling machines by which the wrapper is rolled onto the bunch by means of rollers and an endless apron upon which the bunch is placed, the wrapper being placed upon a stationary table, and the set of rollers is fed across the end of the table while rolling the bunch into the wrapper.

Our object is to produce a machine in which the bunch is rolled into the wrapper by means of a traversing frame carrying an endless apron and rollers, beginning at the tuck and ending at the tip, the wrapper being first held upon the bunch at the tuck, and after the winding is started said holder is withdrawn; in which the tip-forming cavity is open on one side to permit the operator to use a finger in forming the tip; in which the wrapper is trimmed or cut out by a rotating or reciprocating cutter as the bunch is rolled into it, and whereby a head is created of proper shape to roll smoothly onto the tip, and in which means are provided to return the traversing frame to the starting-point.

Our invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a top plan, the pressure-roller being raised to show the wrapper-gripping finger. Fig. 3 is a transverse sectional elevation. Fig. 4 is a detail in elevation of the tip former or shaper and the gearing for driving a rotary cutter to trim the wrapper to wind smoothly over the tip of the bunch. Fig. 5 is a plan elevation of a rotary cutter. Fig. 6 is an elevation of a vertically-reciprocating cutter and a cam for actuating it, here shown as an equivalent of the rotary cutter, for cutting

out the head of the wrapper so that it will wind smoothly onto the tip. Fig. 7 is a plan of the end of the wrapper as it is cut or trimmed by the cutter to create the head thereon. Fig. 8 is a top plan of the table, the endless apron, rear upper roller, presser-roller, wrapper-head cutter and its driving-gear, and showing a cigar-bunch upon the apron. Fig. 9 is a top plan of the table-apron, head-cutter, and gearing, showing a bunch upon the apron partly wrapped and the head partly cut by the swing of the wrapper into engagement with the cutter.

Inasmuch as many features of this machine as shown are like unto that shown in the application filed by John Bunn, above named, June 27, 1893, Serial No. 481,594, such features will be referred to but not specifically described herein.

A is the bed, having standards *a b*, and a drive-shaft *c* is journaled in *a*, and *c'* is the drive-pulley, *d* the drive-gear, both loose upon said shaft, the hub of said pulley being one part of a clutch, of which *e'* is the other, *e''* being a crank-lever for operating the member *e'*. The gear *d* drives the pinion *d'*, the gear *h* pinion *h'* and worm *h''*, and the gear *k* upon the worm drives the pinions *k'*. Splined onto the shafts *m* and *m'* is an endless apron carried by drums splined onto the shafts *m*, said shafts being journaled in the side pieces *n* of the traversing frame, *p* being the rail mounted upon the main-frame pieces *p'*, and upon which rail said frame *n* traverses, the shafts *m* being also journaled in the main frame *p'*, said frame *n* having downward arms in which the propelling-rod *n'* is secured, provided with a finger *n''*, engaging with the worm *h''*, the rod *n'* being adapted to reciprocate through the standards *a* and *b*. The main-frame pieces are also connected by the bar *u''*, and *u* is the wrapper-table mounted upon a pivot-pin *u'* in a standard erected upon the bar *u''*, said table being adapted to be tilted upon said pivot, but being stationary with reference to the traversing frame. An auxiliary frame *r* is journaled as to its side arm *r'* upon the rod *p*, and *r''* is a spring engaging with said frame to hold the pressure-roller *s* into engagement with the bunch when it is placed upon the endless apron,

this roller being loose upon a shaft mounted in the side arm r' .

In the frame n a shaft 2 is mounted and 3 is a roller mounted thereon to be rotated thereby by the gear x and to traverse the shaft, its face being in contact with the apron m' , which is different from the construction shown in said application.

The following features relate more immediately to our present invention, constituting the several following specific mechanisms:

Return mechanism.—A bar 4 is mounted in the main frame and 5 is a spring coiled thereon, one end engaging with the side piece of the frame n on the right, said bar and spring passing freely through a large hole in the other side piece, so that as this frame is carried to the left in winding the wrapper said spring will be compressed, and then, when the finger n'' is released from the worm or this frame is otherwise tripped, said spring will throw said frame or carriage back to its normal position. The shaft n' is rotatable in its bearings, but is a different shaft from and not connected to the shaft which carries the pinion d' and gear h , and is provided with an arm m'' , which normally is in engagement with the worm, but the operator can swing it by hand out of such engagement, as when a cigar-bunch is wrapped, and then the spring 5 will throw the carriage back to its starting-point and said arm n'' will be again brought into reengagement with said worm.

Wrapper-holding mechanism.—A bar 6 is mounted in the carriage carrying a post 7, in which the finger 8 is mounted adjustably, its outer end projecting over onto the apron m' , and 9 is a pin on the side of said bar engaging with the shifter 10, pivoted upon the carriage and forked at its lower end to engage with the stationary cam 11, whereby said finger is reciprocated by the traverse of the carriage forward as it goes back to engage with the wrapper near its end and below the bunch, and hold it against slipping until at least one wind is completed, and then as the carriage moves to the right the arm on the left of the shifter engages the cam and the wrapper-gripping needle is gradually withdrawn from between the bunch and wrapper-winding, until before the winding is completed it is wholly withdrawn, all being automatic.

Tip-shaping mechanism.—Upon the carriage the block 12 is mounted, having a front vertical wall, concaved, as at 13, in said wall, Fig. 4, in which is a tip-receiving concavity, open in front, and in which the tip of a bunch or cigar is held by said pressure-roller while being rotated, thus shaping or perfecting the shape of the tip; and as the wrapper is wound onto the bunch when it reaches the tip it is smoothly wound thereon, in conjunction with the wrapper-trimming mechanism herein-after described, said open front also permitting the operator to manipulate the wrapper and the tip of the bunch with his finger to

aid in making the winding smooth and give a better finish.

Wrapper-trimming mechanism.—Upon one of the shafts m a gear 14 is mounted, meshing with a pinion 15 upon a shaft journaled in the block 12, upon which shaft the rotary cutter 16 is mounted in the vertical groove 17 in said block in such manner that said cutter will gradually cut out the edge of the wrapper, as at 18 in Fig. 7, creating the head 19, all so that this end of the wrapper is cut to substantially the same form as it is cut by a cigar-maker when making cigars by hand, in order that it will properly wind to make the tip and finish the tip perfectly without requiring any other manipulation of the tip or trimming off after it is wound. This wrapper-cutter operates to cut out the head upon the wrapper, and the heads so cut are substantially alike as to size and shape, providing the bunches are substantially alike in form, contour, and shape. As the bunch is rotated and rolled into the wrapper, the latter is simultaneously drawn over the table and swung around to the right and rearward, bringing its rear edge into contact with the teeth of the continuously-rotated cutter, and these teeth successively cut out pieces from it, forming the neck of the head 19, and then when this is formed the operator draws the end of the wrapper back toward himself gradually and the cutter-teeth finish the head into substantially the shape shown in Fig. 7, said head being then of proper shape for the tip of the bunch to be rolled into it.

Just before the tip is finished the operator with a brush or other means applies paste to the head 19, and then as it is wound onto the tip of the bunch it is stuck fast and secured, so that the cigar is finished in the machine ready to be cut off to length. Then by raising the pressure-roller the finished cigar is released for removal from the machine and another bunch is inserted.

In Fig. 6 we show a stepped cam 20, secured upon and rotated by a shaft and engaging with the head 21 upon the rod 22, which carries the vertically-reciprocated cutter 22, and 23 is a spring compressed by said cam and operating to impart force to the downward or cutting blow of the knife, all operating to trim the wrapper the same as the rotary cutter and as shown in Fig. 7. This vertical cutter is shown and described as a modification of the rotary cutter. The rotation of the stepped cam causes the cutter to be vertically reciprocated, and it will cut out the wrapper and form the head thereon the same as is done by the rotary cutter.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a cigar-bunch-rolling machine, the combination with a rotating worm, a shaft connected thereto and actuated longitudinally thereby, a carriage mounted upon guides and traversed thereon and means to connect it to

said shaft, and a spring adapted to be compressed by the forward movement of said carriage, and to return it to its normal position when said shaft is disconnected from said worm.

2. In a cigar-bunch-rolling machine, the combination with a traversing carriage and the endless apron and rollers mounted thereon, of a horizontally - reciprocating finger adapted to be projected to engage with the wrapper to start its winding onto the bunch and to be wound under one or more of the winds thereon, and an oscillating shifter connected to said finger and adapted to withdraw it when the carriage has moved a fixed distance.

3. The combination with a traversing car-

riage provided with suitable mechanism to rotate a cigar-bunch, and a stationary wrapper-table in front of said carriage, of a cutter mounted upon said carriage and operating to engage with and trim the wrapper for winding the tip as it is drawn from the table by the traverse of the carriage, during the rotation of the bunch.

In witness whereof we have hereunto set our hands this 11th day of December, 1893.

FRANK R. KEYES.
CHARLES A. BAKER.
JOHN BUNN.

In presence of—

C. W. SMITH,
HOWARD P. DENISON.