R. A. BRIGHT.

CIGAR WRAPPING MACHINE.

APPLICATION FILED APR. 5, 1912. RENEWED SEPT. 24, 1915.

1,180,821.

Patented Apr. 25, 1916.

5 SHEETS—SHEET 1.

FIG. I.

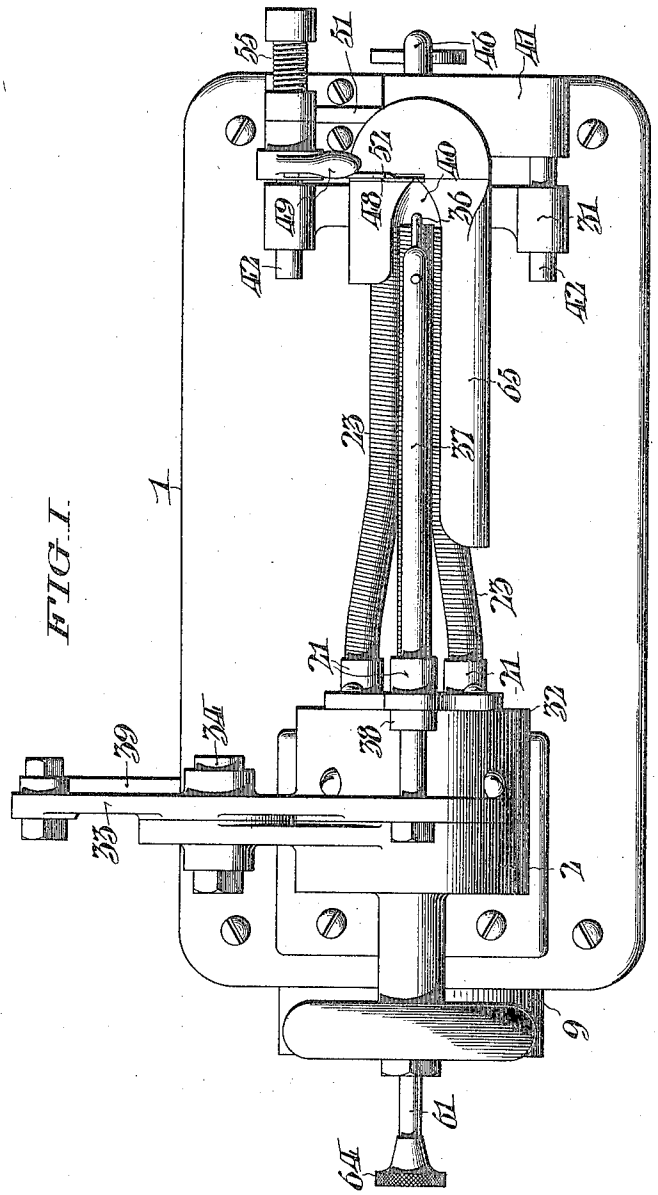
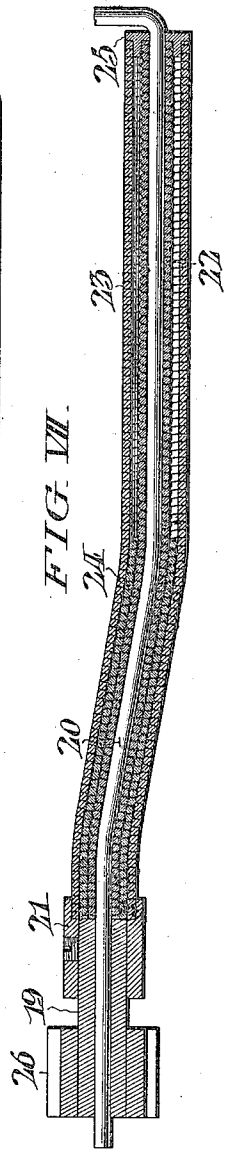


FIG. VII.



Witnesses

John C. Bergner.

James E. Bell

Inventor

Richard A. Bright,

By Raley & Paul

Attorneys.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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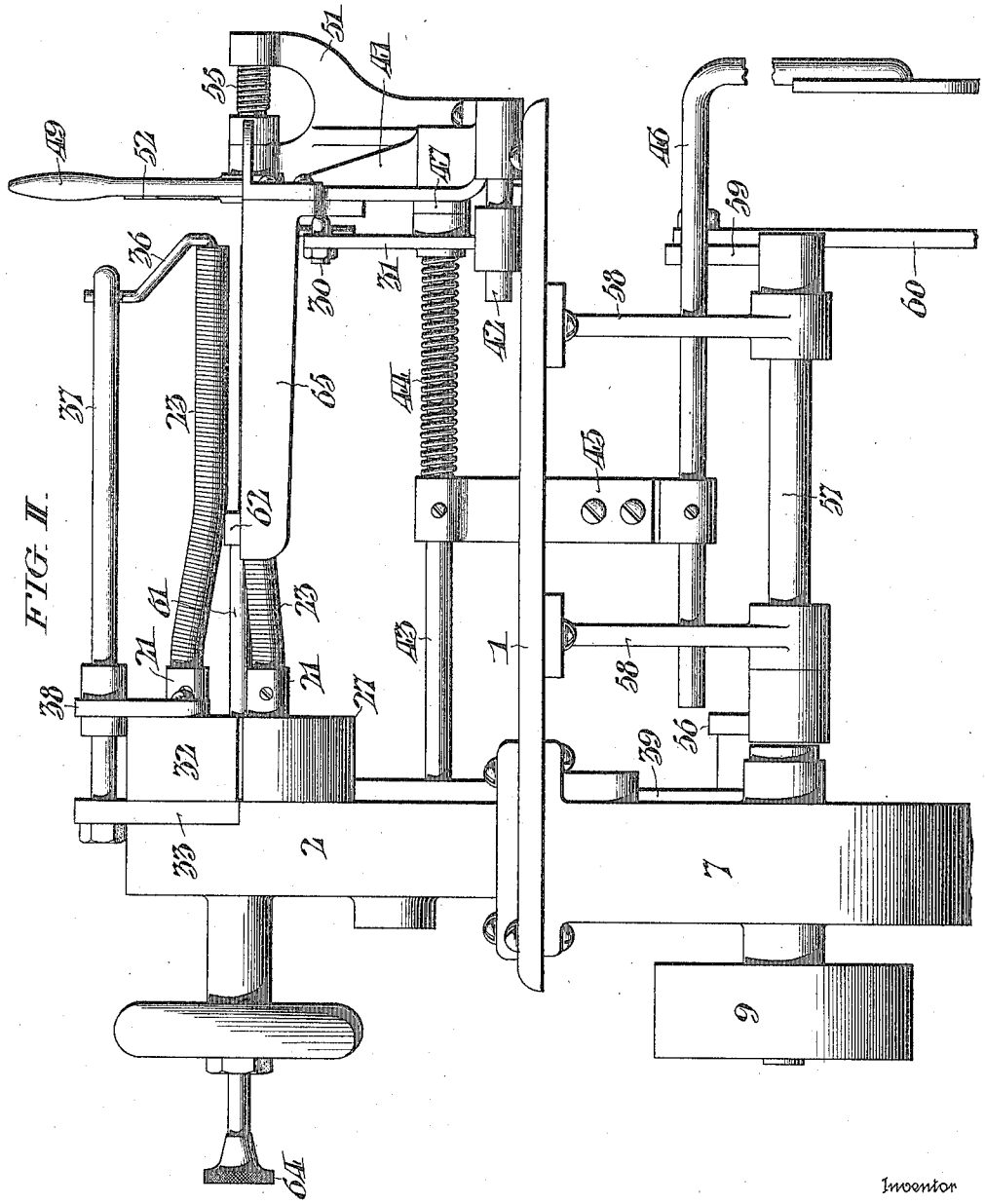
5 SHEETS—SHEET 2.

FIG. II.



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Inventor
Richard A. Bright,
By Raley & Paul
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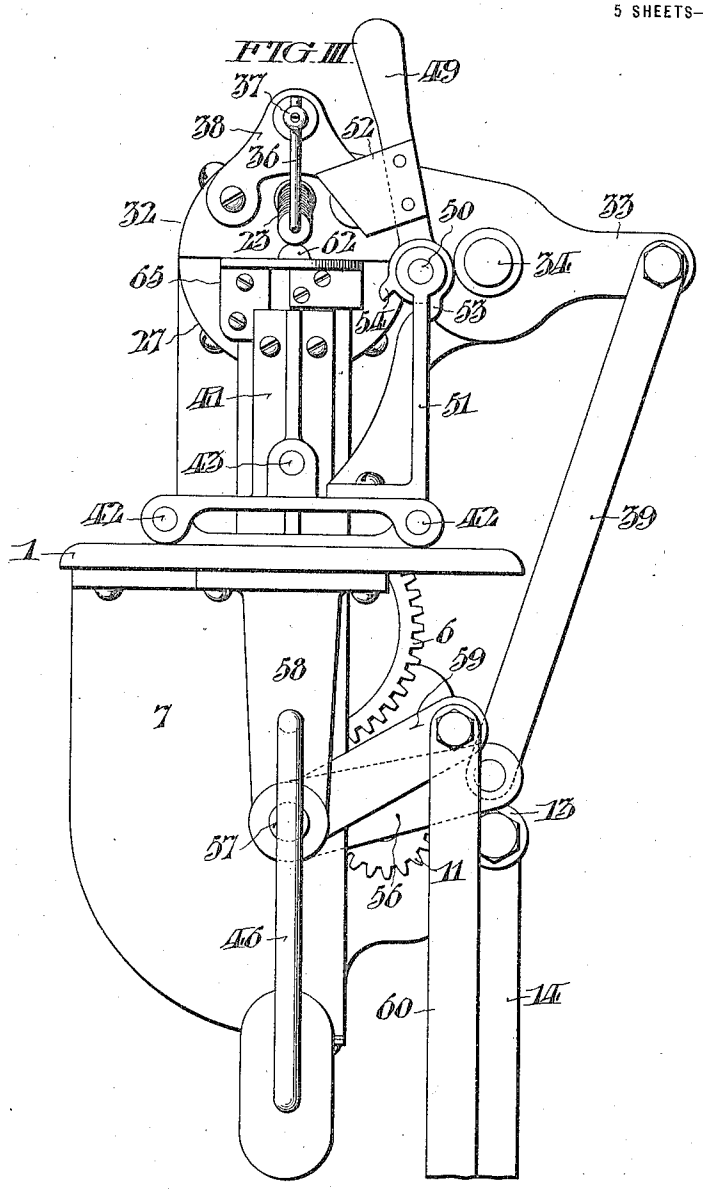
5 SHEETS—SHEET 3.

FIG. III.



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John C. Bergner.

James L. Bell.

Inventor

Richard A. Bright,

By Maley & Paul

Attorneys

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5 SHEETS—SHEET 4.

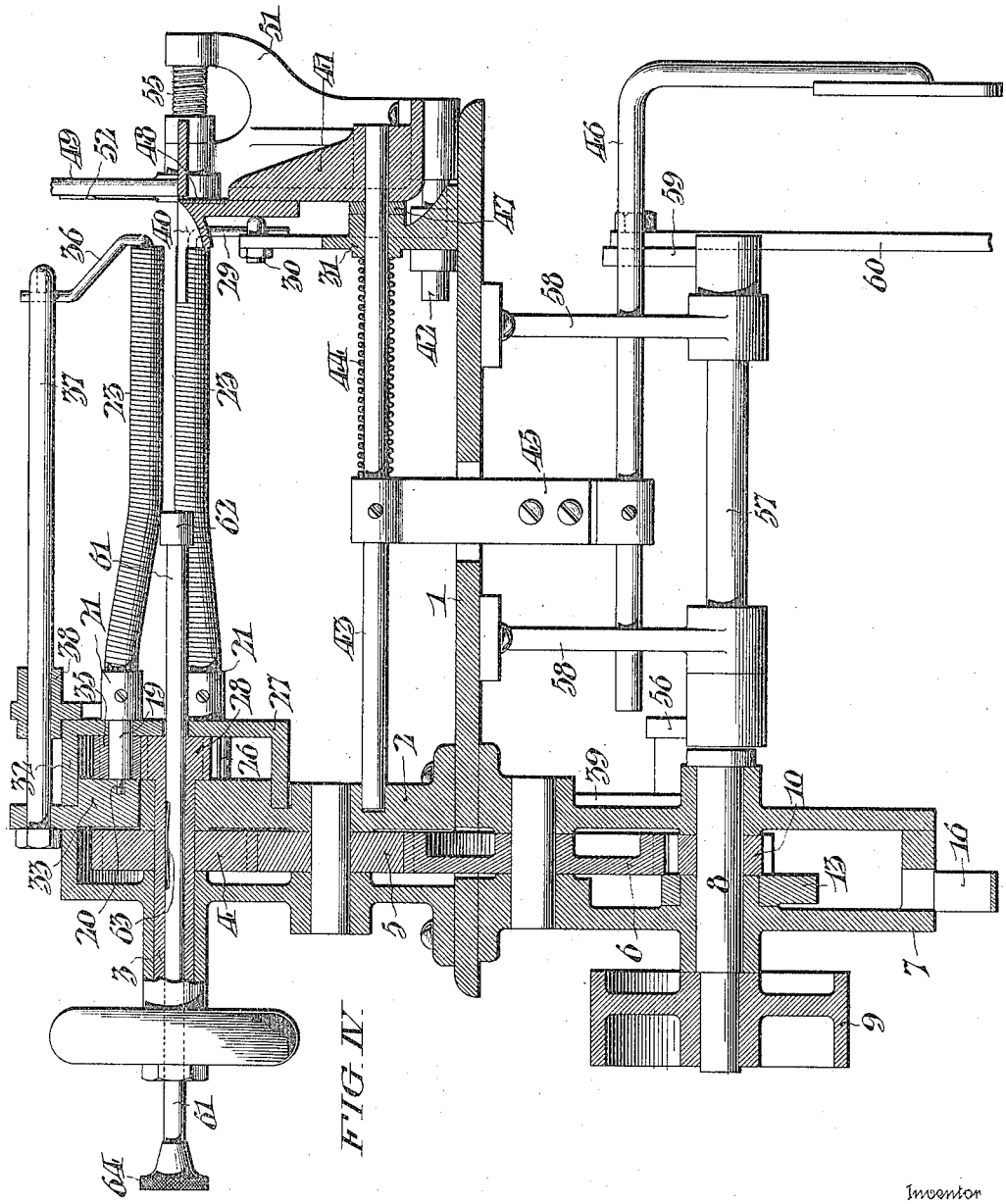

FIG. IV.

Witnesses
John D. Bergner
James H. Bell

Inventor
Richard A. Bright,
By Raley & Paul
Attorneys

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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5 SHEETS—SHEET 5.

FIG. V.

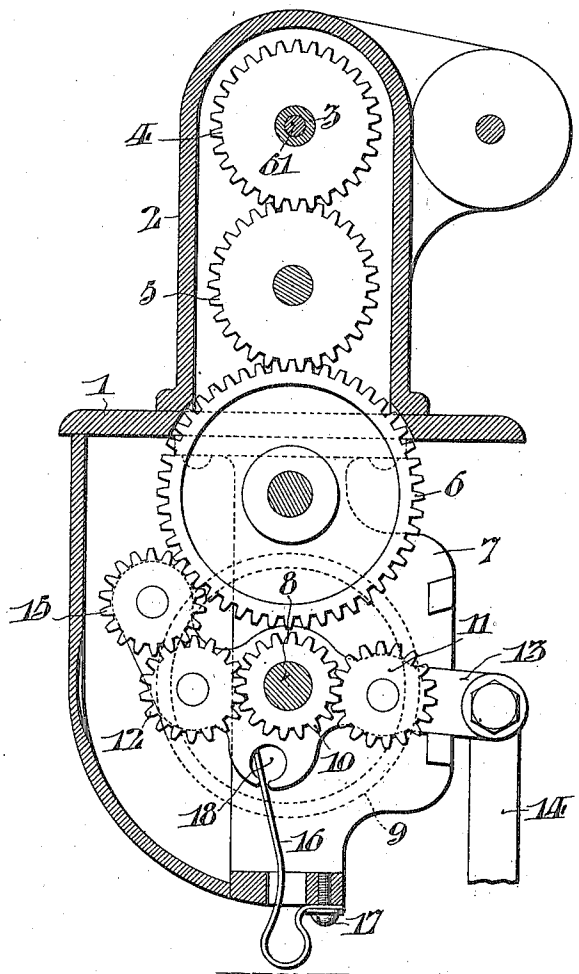
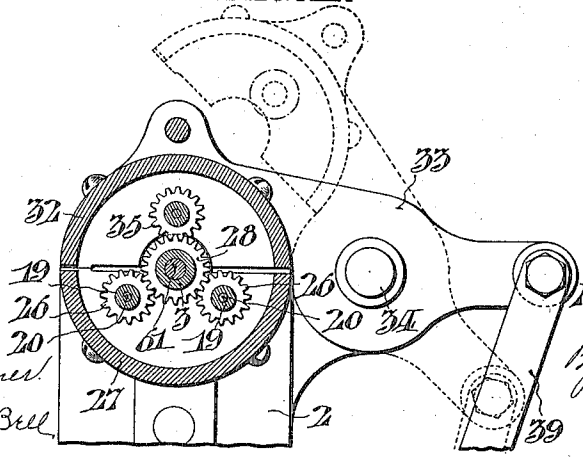


FIG. VI.



Witnesses
John C. Bergner.
James E. Bell

Inventor
Richard A. Bright,
By Bailey & Paul
Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD A. BRIGHT, OF SOUTH AUBURN, RHODE ISLAND.

CIGAR-WRAPPING MACHINE.

1,180,821. Specification of Letters Patent. Patented Apr. 25, 1916.

Application filed April 5, 1912, Serial No. 688,677. Renewed September 24, 1915. Serial No. 52,536.

To all whom it may concern:

Be it known that I, RICHARD A. BRIGHT, a citizen of the United States, residing at South Auburn, Cranston, in the county of Providence, State of Rhode Island, have invented new and useful Improvements in Cigar-Wrapping Machines, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates more particularly to new and useful improvements in cigar wrapping machines which are adapted for placing the wrapper on the cigar.

An object of the invention is to provide a cluster of rolls, each of which is formed with a rigid core and a flexible contacting surface which may yield so as to conform to the desired contour of the cigar.

A further object of the invention is to provide a device of the above character, with a stationary forming thimble for shaping and wrapping the point of the cigar, which thimble is so supported that it may be readily moved away from the point of the cigar to render the point accessible for finishing.

A further object of the invention is to provide a device of the above character, with a cutter for cutting the wrapper, in order to facilitate the finishing of the point of the cigar.

These and other objects will in part be obvious, and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention, Figure I, is a top plan view of a machine embodying my improvements. Fig. II, is a front view of the same. Fig. III, is an end view of the machine, looking from the right of Fig. I. Fig. IV, is a vertical sectional view longitudinally through the machine. Fig. V, is a vertical section transversely of the machine, showing the driving mechanism. Fig. VI, is a detail showing the manner of raising the upper roll for the insertion or removal of the cigar, and Fig. VII, is a longitudinal section through one of the rolls.

The machine in general is similar to wrapping machines heretofore used, and consists of a table or supporting frame 1, from which rises a bracket 2. A horizontally arranged shaft 3, is mounted in suitable bearings in the bracket, and said shaft is rotated by a pinion 4, meshing with a pinion 5, which in turn meshes with a pinion 6. The pinion 5, is suitably journaled in the bracket 2, and the pinion 6, is journaled in a depending bracket 7, carried by the table or supporting frame 1. Also mounted in the depending bracket 7, is the main shaft 8, which is driven from a suitable pulley 9. This main shaft carries a pinion 10, which is keyed thereto and rotates with the shaft. Said pinion 10, meshes with two pinions 11, and 12, which are journaled on a lever 13, fulcrumed about the axis of the main shaft, and capable of being swung about its fulcrum by a link 14, which may be connected to a suitable treadle, if desired. This lever also carries a third pinion 15, which meshes with the pinion 12.

The pinions 11, and 15, are adapted to be thrown into engagement with the pinion 6, by the swinging lever 13. As shown in Fig. V, the pinion 15, is in engagement with the pinion 6. It will be obvious, however, that the lever 13, may be shifted through the link 14, to bring the pinion 11, into engagement with the pinion 6. By this arrangement I have provided means whereby the pinion 6, may be rotated in either direction from the pinion 10, on the main shaft. A spring arm 16, is rigidly secured to the depending bracket by a screw 17, and at its upper end, said spring is seated in a recess or socket 18, formed in the lever 13. This spring serves to hold the lever in shifted position with one of the driving pinions in engagement with the pinion 6. By this construction, I have provided means, whereby the shaft 3, in the upwardly projecting bracket, may be rotated in either one direction or the other, under the control of the operator.

Each of the rolls of the cluster is formed with a short shaft 19, and a core 20, which extends through the shaft. A collar 21, is mounted on the end of the shafts, and the roll proper, consists of an inner spiral 22, an outer spiral 23, and an intermediate spiral 24, which extends only part of the length of the roll. The active part of the roll, that is, the part which engages the cigar during the rolling of the wrapper thereon, is located between the outer end of the roll and the intermediate spiral 24. The outer spiral 23, will, therefore, be spaced from

the inner spiral 22, at the active part of the roll, and, therefore, this outer spiral or the contacting surface of the roll is capable of yielding to the contour of the cigar, notwithstanding the fact that the central core is rigid, and fixedly held as will be hereinafter more fully described.

The outer ends of the spirals 22, and 23, are engaged by a cap 25, which is provided with an opening loosely fitting on the core. Mounted on the shaft 19, is a driving pinion 26. The two lower rolls of the cluster are journaled in a casing 27, carried by the bracket, and the core 20, extends through the pinion 26, into the bracket. The pinion 26, of each of the lower rolls, meshes with a pinion 28, on the forward end of the shaft 3. The core 20, of each roll, is bent downwardly as at 29, and the end thereof is adjustably held by a bolt 30, carried by a bracket 31, mounted on the supporting frame 1. The upper roll is mounted in a casing 32, which is carried by a swinging arm 33, pivoted at 34, to a rearwardly extending lug carried by the bracket 2. The core 20, of the upper roll extends through the pinion 35, which drives the roll and terminates in the swinging arm 33. This pinion 35, is adapted to mesh with the driving pinion 28, on the shaft 3. The outer end 36, of the core of the upper roll, is bent upwardly, and is adjustably held by a rod 37, which passes through a perforated lug in the supporting arm 33, and also a perforated bracket 38, carried by the casing 32.

The swinging arm 33, is connected to a link 39, at its outer end, and by said link said arm may be swung so as to raise the upper roll from its position adjacent the two lower rolls, and allow of the insertion of the cigar which is to be wrapped, or the removal of the same after the wrapping is finished. It will be noted that the active surfaces of these three rolls are substantially parallel at the outer end of the rolls. These rolls preferably terminate short of the point of the cigar, and the point is wrapped and formed by a thimble 40, which is conical in shape, and is disposed so as to be in proper position relative to the point of the cigar. Said thimble is adjustably supported by a bracket 41. This bracket is mounted on two spaced rods 42, 42, which slide in bearings carried by the frame 1. A rod 43, extends freely through the bracket 31, and is rigidly fixed to the bracket 41. A spring 44, encircles the rod and at one end bears against the bracket 31, while the other end of said spring bears against an arm 45, carried by the rod and projecting downwardly through an opening in the table or frame 1.

The arm 45, is connected with a knee-shift 46. The spring 44, normally holds the bracket 41, with the thimble 40, in position to engage the point of the cigar. A washer or buffer 47, limits the inward movement of the bracket. By manipulating the knee-shift, the spring 44, may be compressed and the supporting bracket with the thimble moved away from the point of the cigar, to allow the final finishing of the point. The thimble also carries a shear blade 48. An arm 49, pivoted at 50, to a supporting member 51, carries a movable cutting blade 52. Said arm is provided with spaced lugs 53, and 54, which limit the swinging movement thereof. A spring 55, normally holds the arm 49, raised. This arm is so disposed that the cutting blade 52, will coöperate with the shear blade to cut or nick the part of the wrapper projecting beyond the point of the cigar. Inasmuch as this cutting device is mounted on the same bracket as the thimble, the entire cutting device will be moved away from the cigar by the manipulation of the knee-shift.

The link 39, for lifting the upper roll of the cluster, is connected at its lower end to an arm 56, of a rock shaft 57, which is mounted in suitable depending arms 58, carried by the main frame or table 1. Said rock shaft carries a second arm 59, to which a link 60, is attached, and said link may be connected to a suitable treadle.

In order to hold the cigar which is being wrapped in proper relation to the thimble, that is, toward the outer ends of the cluster rolls, I have provided a forcer or follower 61, which carries a rotating head 62, adapted to engage the end of the filler being wrapped, and said forcer extends through the shaft 3. A spring 63 frictionally holds the forcer in its proper position relative to the rolls. A thumb-piece 64, on the outer end of the forcer or follower, serves as a means for adjusting this member.

In order to provide proper means for supporting the wrapper as it is led between the rolls and around the filler or binder of the cigar, I have provided an ironing plate 65, which is carried by the bracket supporting the thimble and said ironing plate extends longitudinally of the rolls and is properly positioned so that the wrapper may be guided over the same and between the active part of the cluster rolls.

In the operation of my device, the treadle for controlling the position of the upper roll is depressed, which will raise the roll so that the filler which is already formed and bound, may be placed on the lower rolls. An end of the wrapper leaf is then pasted to the lighting end of the formed filler of the cigar, whereupon the proper treadle is released to allow the upper roll to drop to its operative position. The wrapper leaf which now lies over the ironing plate 65, is carefully smoothed out by the hands of the operator. The power treadle is then moved to put the cluster rolls into operation to rotate the

formed filler carried between them. As the filler is thus rotated, it draws the wrapping leaf and the yielding surface of the rolls causes the wrapper to be tightly wound upon the cigar. During this time the operator causes the leaf to be held taut (by hand) against the inner edge of the ironing plate so that the leaf will be maintained flat at all times as it is fed to the revolving filler. After the cigar has been wrapped to the point thereof, the operator shifts the power treadle to stop the machine. The knee-shift is then moved so that the thimble is shifted away from the cigar point. The cutting knife is thereupon operated to cut off the surplus wrapper leaf extending beyond the cigar point. The projecting portion of the leaf is then nicked and the cigar intermittently rotated until the desired finished point of the cigar is obtained.

As is well known in the art, the tobacco leaves used for the wrapper are halved longitudinally and it is desirable that the face of the leaf shall always appear upon the outside of the cigar. Owing to the right and left portions of the wrapper leaf thus formed, the machine may be rotated in either direction, depending on the portion of the leaf used to permit the same to be fed, so that its face appears upon the outside of the finished cigar.

After the cigar is completely wrapped in the manner above stated, the upper roll is then raised by means of the proper treadle, whereupon the cigar is removed from the machine, and another formed filler inserted to be wrapped.

The follower or forcer, if not properly positioned, is adjusted so as to engage the inner end of the cigar and hold the point of the same in proper relation to the thimble which assists in wrapping and forming the pointed end.

It is obvious that minor changes in the details of construction and arrangement of parts may be made without departing from the spirit of the invention, as set forth in the appended claims.

Having thus described my invention, I claim:

1. A cigar wrapping machine including in combination a supporting bracket, a cluster of rolls mounted in said bracket and projecting therefrom, each of said rolls including a rigid core and a flexible active contact surface supported by the core, means for rigidly supporting the outer ends of said cores, and a stationary thimble disposed at the ends of the rolls and shaped to assist in wrapping the point of the cigar, yielding means for normally holding said thimble in operative position, and a knee shift for moving said thimble away from the cigar.

2. A cigar wrapping machine including in combination a supporting bracket, a cluster of rolls mounted in and projecting from said bracket, each of said rolls consisting of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, and means for rigidly supporting each rod core.

3. A cigar wrapping machine including in combination a supporting bracket, a cluster of rolls mounted in and projecting from said bracket, each of said rolls consisting of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, means for rigidly supporting each rod core, and means whereby the supports for the rod cores may be adjusted for different sizes of cigars.

4. A cigar wrapping machine including in combination a supporting bracket, a cluster of rolls mounted in and projecting from said bracket, each of said rolls consisting of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, means for rigidly supporting each rod core, means whereby the supports for the rod cores may be adjusted, and a normally stationary thimble located at the outer end of said roll to assist in wrapping the point for different sizes of cigars.

5. A cigar wrapping machine including in combination a supporting bracket, a cluster of rolls mounted in and projecting from said bracket, each of said rolls consisting of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, means for rigidly supporting each rod core, means whereby the supports for the rod cores may be adjusted, a normally stationary thimble located at the outer end of said roll to assist in wrapping the point, means for yieldingly holding said thimble in operative position, and a knee shift for moving said thimble away from the cigar for different sizes of cigars.

6. A cigar wrapping machine including in combination a two-part supporting bracket, rolls carried by the lower part of the bracket and a roll carried by the upper part of the bracket, each of said rolls consisting of a rigid rod core, a spirally wound wire adjacent the core, and a second spirally wound wire supported by the core and spaced from the first named spirally wound wire at the active part of the roll, means for rigidly supporting the outer ends of the cores of

the lower rolls, means carried by the upper part of the bracket for rigidly supporting the outer end of the core of the upper roll, and means whereby the upper part of the bracket may be moved away from the lower part for the insertion of the cigar to be wrapped, said means including a swinging arm having a link connected therewith, a rock shaft having an arm connected to said link, and means for swinging the rock shaft.

7. A cigar wrapping machine including in combination a cluster of rolls, each of which consists of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from the first named spirally wound wire at the active part of the roll, means for rigidly supporting the outer ends of said cores, means whereby said rolls may be rotated in either direction at the will of the operator, a sliding bracket adjacent the outer ends of said rolls, a thimble carried thereby, an ironing plate supported by said bracket, and means for moving said bracket, whereby the thimble may be moved away from the end of the cigar for the final shaping of the point.

8. A cigar wrapping machine including in combination a cluster of rolls, each of which consists of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from the first named spirally wound wire at the active part of the roll, means for rigidly supporting the outer ends of said cores, means whereby said rolls may be rotated in either direction at the will of the operator, a sliding bracket adjacent the outer ends of said rolls, a thimble carried thereby, an ironing plate supported by said bracket, and means for moving said bracket, whereby the thimble may be moved away from the end of the cigar for the final shaping of the point, said means for moving the bracket including a spring for holding the thimble in operative position, and a knee shift for moving the thimble away from the cigar.

9. A cigar wrapping machine including in combination a cluster of rolls each of which consists of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, whereby said outer wire may yield to conform to the contour of the cigar.

10. A cigar wrapping machine including in combination a cluster of rolls each of which consists of a rigid rod core, a spirally wound wire adjacent the core, and a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, whereby said outer wire may yield to conform to the contour of the cigar, and means for adjustably supporting the outer ends of each of said cores.

11. A cigar wrapping machine including in combination a cluster of rolls each of which consists of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, whereby said outer wire may yield to conform to the contour of the cigar, and a normally stationary thimble located adjacent the outer ends of said rolls to assist in wrapping and shaping the point of the cigar.

12. A cigar wrapping machine including in combination a cluster of rolls each of which consists of a rigid rod core, a spirally wound wire adjacent the core, a second spirally wound wire supported by the core and spaced from said first named spirally wound wire at the active part of the roll, whereby said outer wire may yield to conform to the contour of the cigar, means for adjustably supporting the outer ends of each of said cores, and a normally stationary thimble located adjacent the outer ends of said rolls to assist in wrapping and shaping the point of the cigar.

13. A cigar wrapping machine including in combination upper and lower rolls each of which consists of a rigid rod core, means for supporting said upper roll, whereby the same may be moved toward and from the lower rolls, and a rod carried by said supporting means and extending substantially parallel with the roll, said core rod having its outer end bent upwardly and adjustably secured to the supporting rod.

14. A cigar wrapping machine including in combination upper and lower rolls each of which consists of a rigid rod core, means for supporting said upper roll, whereby the same may be moved toward and from the lower rolls, and a rod carried by said supporting means and extending substantially parallel with the roll, said core rod having its outer end bent upwardly and adjustably secured to the supporting rod, said supporting means for the upper roll including a swinging arm, a link connected therewith, and a rock shaft having an arm connected to said link, whereby the swinging of the rock shaft will raise and lower the roll.

15. A cigar wrapping machine including in combination a cluster of rolls, a normally stationary thimble located at the ends of the rolls to assist in wrapping and shaping the point of the cigar, a bracket supporting said thimble, a cutter carried by said bracket for cutting and nicking the wrapper projecting beyond the point of the cigar, and means for supporting the bracket whereby the same may be moved away from the ends of the rolls to give access to the point of the cigar.

16. A cigar wrapping machine including in combination a cluster of rolls, a normally stationary thimble located at the ends of the rolls to assist in wrapping and shaping the point of the cigar, a bracket supporting said thimble, a cutter carried by said bracket for cutting and nicking the wrapper projecting beyond the point of the cigar, means for slidingly supporting said bracket, a knee-shift connected to the bracket for moving the same away from the ends of the rolls, and a spring for returning the bracket to normal position.

In testimony whereof, I have hereunto signed my name at Baltimore, Maryland, this thirtieth day of March 1912.

RICHARD A. BRIGHT.

Witnesses:

RICHARD J. HOGAN,

GEORGE L. HAWKINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."