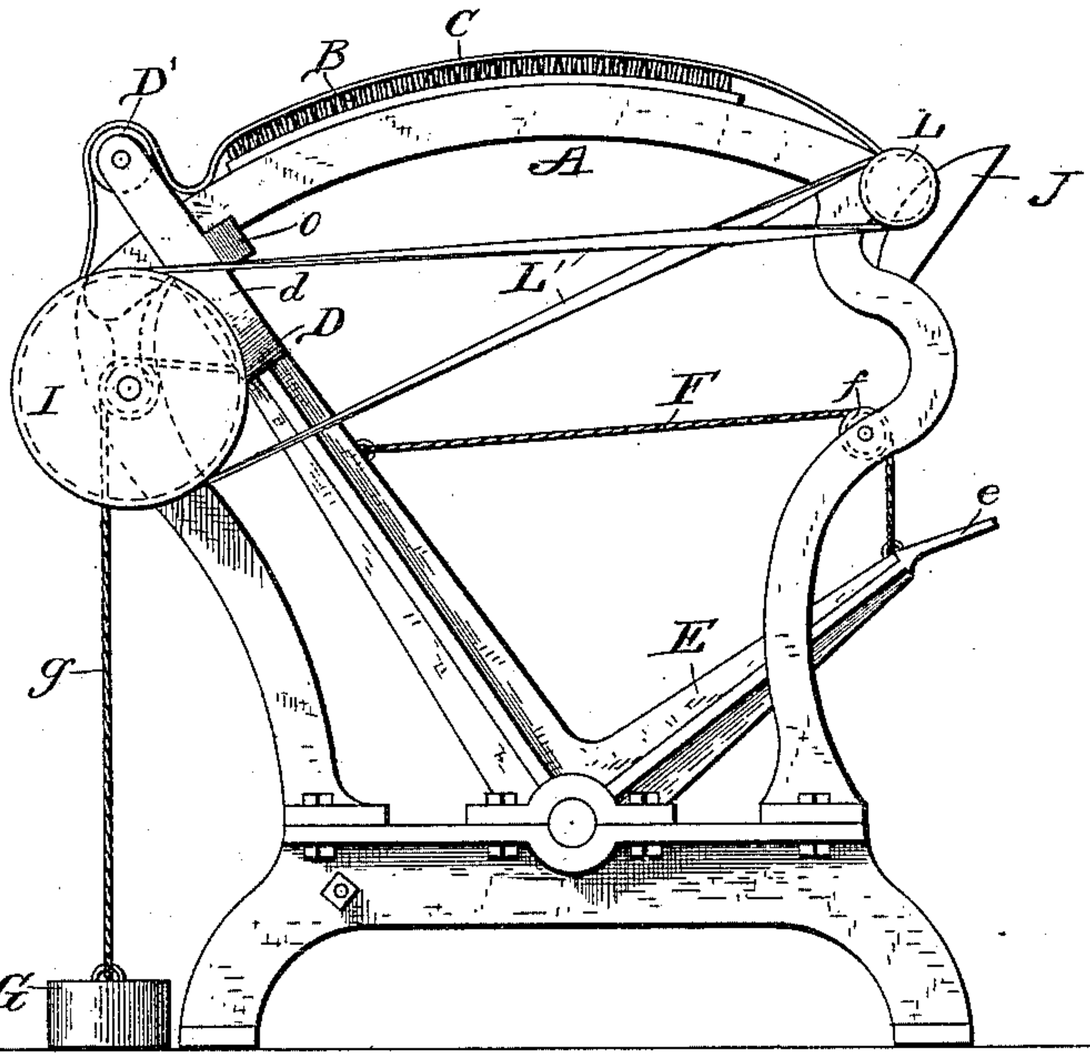
(No Model.) 2 Sheets—Sheet 1.

J. E. SMITH.

CIGAR WRAPPING MACHINE.

No. 405,438. Patented June 18, 1889.

Fig. 1.



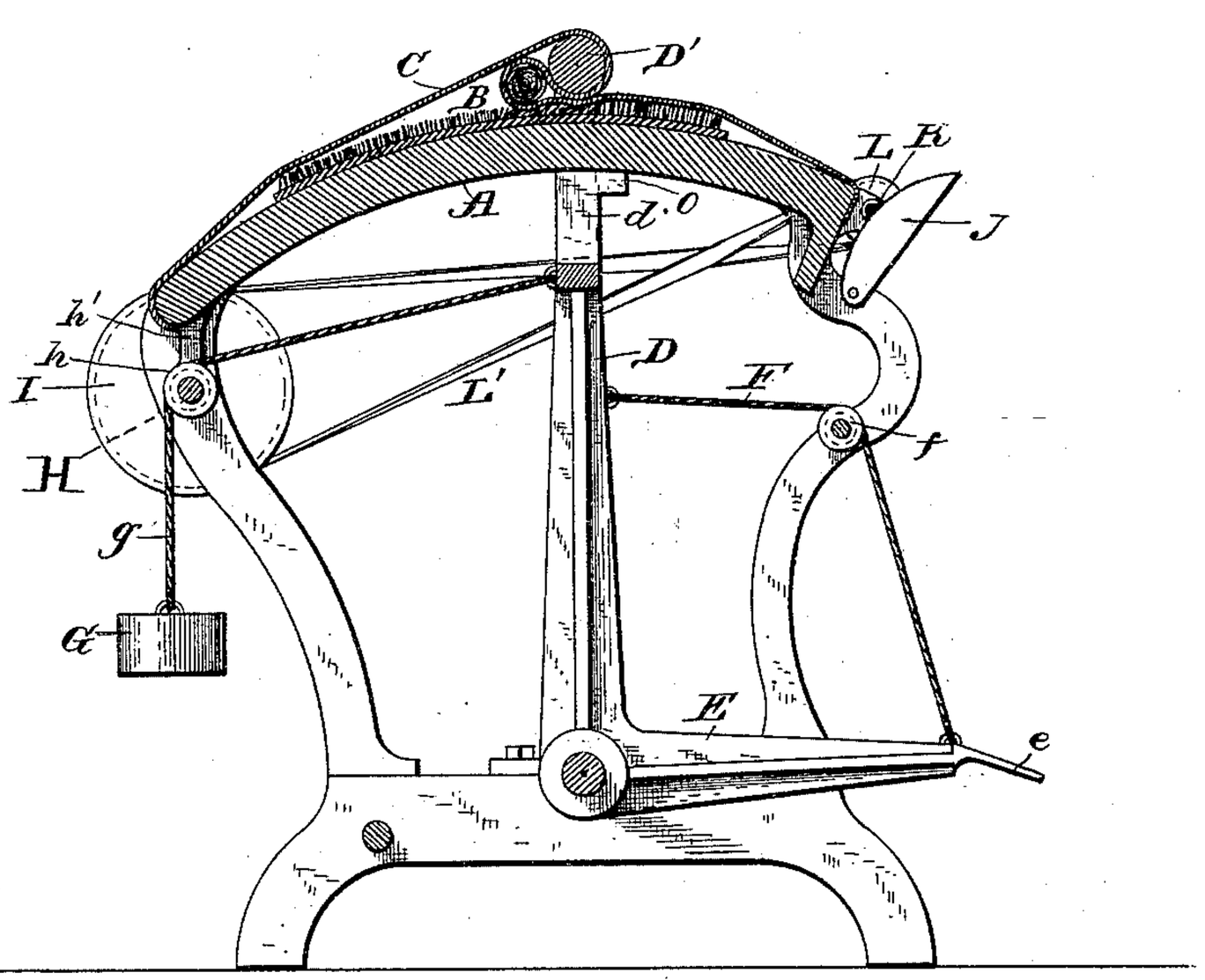


Fig. 2.

ATTEST:

Percy C. Bowen.

C. E. Doyle.

INVENTOR:

James Edward Smith

By W. F. Bernhard

his Attorney.

(No Model.) 2 Sheets—Sheet 2.

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CIGAR WRAPPING MACHINE.

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Fig. 3.

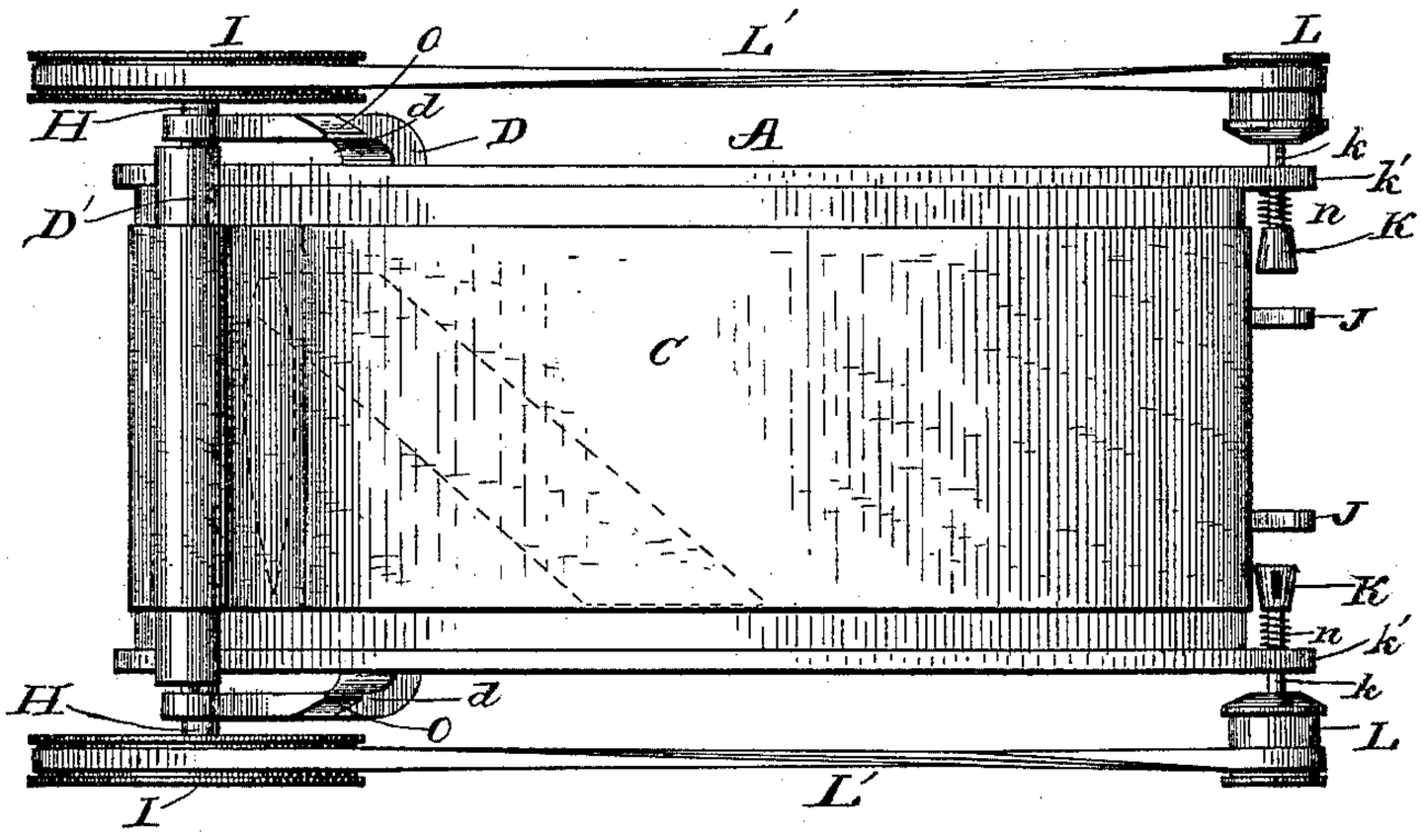


Fig. 4.

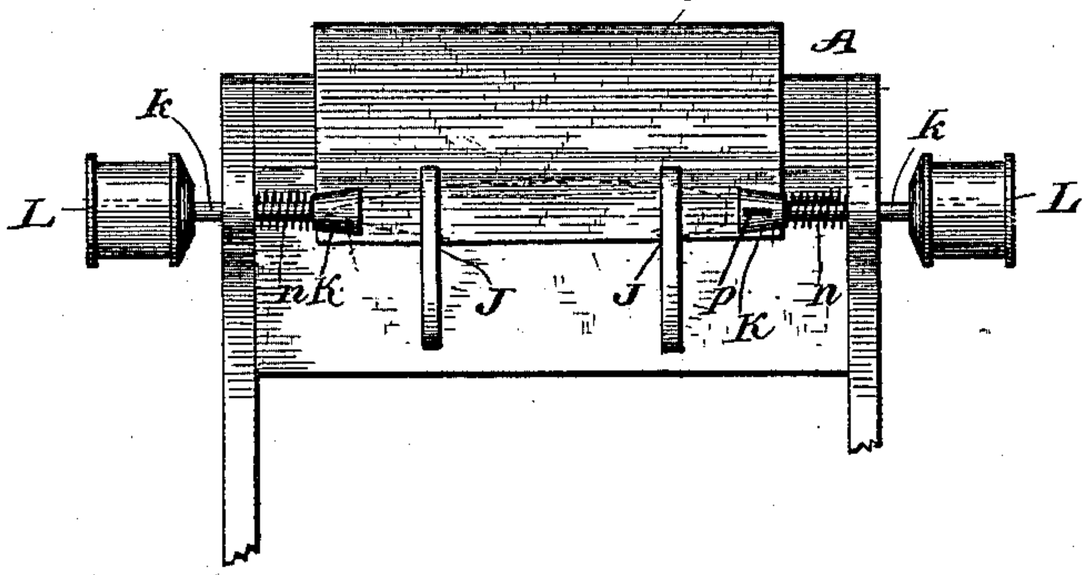
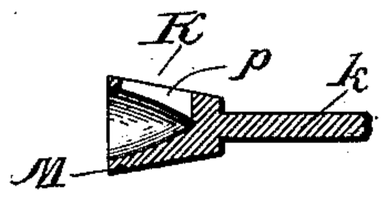


Fig. 5.



ATTEST:

Percy C. Bowen.

C. E. Doyle

INVENTOR:

James Edward Smith

By W. H. Bernhard

his Attorney.

UNITED STATES PATENT OFFICE.

JAMES EDWARD SMITH, OF NEW YORK, N. Y., ASSIGNOR OF TWO-THIRDS TO ADOLPH MOONELIS AND BENJAMIN LICHTENSTEIN, OF SAME PLACE.

CIGAR-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,438, dated June 18, 1889.

Application filed June 28, 1888. Serial No. 278,465. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD SMITH, a citizen of the United States, residing at the city and State of New York, have invented certain new and useful Improvements in Cigar-Wrapping Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a machine for wrapping and finishing cigars; and it consists of the peculiar combination of devices and novel construction and arrangement of parts, as will be hereinafter fully described and claimed.

My present invention contemplates a machine by which a wrapper can be expeditiously and uniformly wrapped around a bunch without liability of breaking or injuring either the wrapper or the bunch, while the cigar is in the machine.

My invention also contemplates the provision of means to receive the cigar after the wrapper has been properly applied thereto and to hold said cigar in a stationary position while the ends thereof are being finished.

My invention further contemplates a device for automatically finishing the end of the cigar and of removing any surplus wrapper or filler therefrom, said device being automatically thrown out of the path of the cigar prior to the discharge of the latter from the devices for placing the wrapper around the bunch, so that the cigar may readily enter the holding or retaining device without obstruction from the finishing device. Immediately after the cigar enters the retaining device for holding the same in a stationary position the finishing device is automatically released and acts on the end of the cigar to properly shape the end thereof and remove any surplus tobacco.

In the accompanying drawings, Figure 1 is a side elevation of a cigar-wrapping machine embodying my invention with the rocking arm and the apron in position to receive a bunch. Fig. 2 is a vertical longitudinal sectional view through the machine, showing the rocking arm partly advanced over the rolling-table and with a bunch in the bight of the apron. Fig. 3 is a top plan view of the machine with the parts in the position indicated in Fig. 1. Fig. 4 is an enlarged end elevation of one end of the rolling-table. Fig. 5 is a detail sectional view through one of the headers.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates a rolling-table of my improved cigar-wrapping machine, which is suitably supported at an elevation above the floor. This rolling-table is curved continuously from end to end thereof, the upper surface thereof being substantially convex, as indicated in Figs. 1 and 2, and on this convex surface of the rolling-table I arrange a yielding compressible surface B, against which the rolling-apron C impinges or presses while the bunch is carried over said yielding surface and the wrapper is being wrapped around the bunch. The yielding surface B is preferably made of short stiff bristles, which are suitably secured and held in place on the convex surface of the rolling-table, although said yielding surface can be secured through the agency of other materials of a pliable or flexible nature. This yielding surface prevents the wrapper from tearing or breaking while being placed around the bunch, and it also insures the desired tension on the rolling-apron to uniformly coil the wrapper around the bunch. The rolling-apron is left slack to form a bight therein, in which the bunch is placed prior to starting the machine, and the ends of said apron are connected directly to the ends of the rolling-table in any suitable manner to permit the apron to be shortened or lenghtened at will.

D is a rocking arm, which is pivoted at its lower end to a suitable support arranged beneath the curved rolling-table, so that the arm can swing back and forth concentric with the curved surface of said table, and the upper end of this arm is bifurcated, as at *d*. This bifurcation occurs in the arm at a point below the rolling-table, and the branches of the arm diverge laterally from one another and extend upwardly in the plane of the arm, whereby the branches are caused to fit on oppo-

site sides of the rolling-table with their extreme upper ends extending above the upper convex face of said table, as is obvious. A presser-roll D′ is loosely journaled in the upper extremities of the branches of the rocking arm, and the roller is thus arranged above the rolling-table and is adapted to ride on the bight in the rolling-apron after a bunch and the wrapper has been placed in the bight to properly coil the wrapper around the bunch. This rocking arm D is provided with a treadle E, which is arranged at an angle thereto and branches from the rocking arm at the point where the latter is pivoted below the table, and on the free end of this treadle E is formed a foot-piece *e*, which is arranged in such position that the operator can readily apply foot-power to the treadle E to swing or turn the rocking arm on its pivot, and thus cause the upper end thereof and the presser-roll therein to traverse the convex surface of the rolling-table.

F is a cord which passes over a guide-pulley *f*, that is journaled on the frame of the rolling-table, and the ends of this cord are connected to the rocking arm and the treadle thereof to steady the parts.

The rocking arm is normally held or maintained at one end of the rolling-table, as indicated in Fig. 1, by means of a drop-weight G, which is connected to the rocking arm by a cord *g*, which runs over or may be coiled around a pulley *h*, that is keyed to a shaft H, that is journaled in suitable bearings *h′*, fixed to the under side of the rolling-table. This shaft is arranged transversely across the rolling-table at one end thereof and beneath the same, and the ends of said shaft are extended beyond the sides of the table, where they receive grooved pulleys I, keyed or otherwise suitably fixed to the ends of the shaft to rotate or turn therewith. When the rocking arm D moves or swings on its pivot in either direction, this shaft II is rotated by the cord or other connection between said arm and the drop-weight, which passes over or around said shaft.

At the opposite end of the rolling-table I provide holding devices J, which are arranged below the top of the table to receive the cigar from the bunching-roller and apron after the wrapper has been placed thereon. These holding devices in the instance shown herein preferably consist of arms which are secured at one end of the table, and they are inclined away from said table to leave a space between themselves and the table, into which space the cigar is deposited and held by the devices J in a horizontal stationary position for one or the other of the finishing devices K to operate on one end of the cigar.

There are two of these finishing devices provided, which are arranged on opposite sides of the rolling-table. Each finishing device has an axially-turning shaft *k*, mounted or journaled in an arm or bracket *k′*, that is fixed to the rolling-table at one side thereof. These shafts are arranged in line with each other, and they are fitted in their bearings to slide endwise toward and from one another, these shafts being thus capable of a compound movement—that of rotating on their axes and sliding back and forth in their bearings independently of one another. The outer end of each shaft has a pulley L fixed thereto, and these pulleys are considerably smaller in diameter than the pulleys I at the opposite end of the machine and are arranged in line therewith, so that belts L′ can pass over both pulleys to transmit the motion of the shaft H to both shafts *k*. At its inner end each of these shafts *k* of the finishing devices has a header secured thereto for turning with said shaft and finishing the ends of the cigar. These headers K are made in the form of hollow cones, with the reduced end secured to the shafts and the flared ends left open to receive the ends of the cigar. The interior configurations of these hollow cone-shaped headers conform to the shape it is desired to give to the cigar in finishing it, and they are rotated at great speed from the transverse shaft H through the intermediate connections. These headers are normally held and forced into position to operate upon the ends of a cigar in the retaining device by means of coiled springs *n*, which are fitted around the shafts *k* and impinge against the fixed support for said shafts and the butt-end of the headers, as indicated in Fig. 2.

By making the shafts *k* of the headers movable endwise in their bearings the headers can be forced apart to permit the cigar from the rolling-apron to readily enter the retaining device without obstruction from the headers. I accomplish this movement of the headers automatically by providing a boss or lip O on the rocking arm, (see Figs. 1 and 3,) which boss is adapted to strike the pulleys of the sliding shafts *k* when the rocking arm approaches the retaining device to discharge the wrapped bunch into said retaining device. When the arm reaches the forward limit of movement, this boss forces the shafts away from one another, and thus separates the headers, so that the cigar can drop into the retaining device, where it is held in a fixed horizontal position; and upon the retrograde movement of the rocking arm the boss is released from contact with the pulleys of the sliding shafts to permit the coiled springs to automatically force the shafts *k* to their normal positions and adjust the headers upon the ends of the cigar. Each of these cone-shaped rotating headers is provided with a longitudinal slot *p*, (see Fig. 5,) which extends nearly the entire length thereof, but does not run through the extreme outer end of the header, and when the header is rotating rapidly the edges of this longitudinal slot serve to remove any surplus wrapper, and thus more perfectly finish the cigar. The rocking arm, when in normal position, is at rest on the rear side or end of the table from the finishing devices. The

yielding surface B of the rolling-table terminates at a point a short distance from the point where the presser-roller crosses the rolling-table when it is at rest, so as to leave a short narrow space between said terminal point of the yielding surface and the presser-roller, in which space the bight in the rolling-apron is first made when the bunch is placed on said apron preparatory to starting the machine, as indicated in Fig. 1.

This being the construction of my improved cigar-wrapping machine, the operation thereof is as follows: The rocking arm and rolling-apron being in their normal positions, (indicated in Fig. 1,) a wrapper is placed on the apron and a bunch within the bight of the apron, with the "tuck" end of the wrapper under the corresponding end of the bunch and the head of the wrapper even or flush with the apron, as indicated in dotted lines in Fig. 3 of the drawings. Pressure is now applied to the treadle to swing the rocking arm forward, which causes the presser-roller carried by the arm to press upon the bight of the apron and bunch to wrap the wrapper around the latter as the roller traverses the yielding surface of the table. The rocking arm swings toward the front end of the machine until the yielding surface thereof is cleared by the presser-roller and tension on the apron is slackened to release the bight, which permits the cigar to drop into the retaining device when the rocking arm reaches the front end of the rolling-table. Pressure is now released from the treadle to allow the rocking arm to be returned by its drop-weight to the position indicated in Fig. 1. As the arm nears the completion of its forward movement, the boss or lip thereon strikes the pulleys of the finishing devices to move the shafts and headers endwise away from each other to permit the cigar to drop into the retaining device without hinderance from the headers, and as the rocking arm begins its retrograde movement the finishing devices are released and the coiled springs force one or the other of the headers upon the tuck end of the cigar held in the cigar retaining or holding device. These headers are rotated at a very great speed by motion communicated from the transverse shaft H through the pulleys and belts, and they serve to remove any surplus wrapper and neatly finish the ends of the cigar before the latter is removed from the machine by hand. By the time the rocking arm finishes its retrograde movement the finishing devices have finished the tuck end of the cigar, and the latter can be removed from the machine by hand, the finishing devices permitting the removal without difficulty.

Changes in the form and proportion of parts and details of construction of the herein-described cigar-wrapping machine can be made without departing from the spirit or sacrificing the advantages of my invention.

In a prior application, filed by me on June 28, 1888, Serial No. 278,466, I have shown a rigid cigar-rolling table having a yielding surface, combined with an apron and a rocking arm carrying a pair of bunching-rollers, and hence I lay no claim, broadly, thereto in the present application.

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

1. In a cigar-wrapping machine, the combination, with a rolling-table and devices for wrapping the wrapper around the bunch, of a retaining device located at one end of said rolling-table, and a rotary header located laterally of said retaining device for finishing one end of a cigar held in said retaining device, substantially as described.

2. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a retaining device located at one end of the rolling-table, below the latter, for receiving the cigar directly from the apron, and a rotary header arranged laterally of said retaining device for finishing one end of the cigar while it is held in the retaining device, substantially as described.

3. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a retaining device located at one end of said table for receiving the cigar from the apron, a rotary header normally held in position laterally of said retaining device to finish one end of a cigar, and means for causing said header to recede from the path of the cigar when it is deposited in the retaining device, substantially as described.

4. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a retaining device located at one end of said table, a rotary header arranged laterally of said retaining device and adapted to be automatically thrown out of the path of the cigar when the latter is discharged from the apron into the retaining device, and mechanism for returning the header in position to act on the end of the cigar while the latter is in the retaining device, substantially as described.

5. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a retaining device located at one end of said table for receiving the cigar from the apron, a pair of rotary headers supported in juxtaposition to the retaining device, so as to slide laterally off one another when the cigar is deposited in the retaining device, and springs for returning the headers upon the ends of the cigar, substantially as described.

6. In a cigar-wrapping machine, the combination of rolling-table, an apron, a rocking arm carrying a presser-roll, the rotary shafts mounted in bearings to slide endwise therein and each carrying a hollow cone-shaped

header at its inner end, and springs for forcing the headers laterally to adjust one of said headers in position to operate on one end of a cigar when the latter is deposited in a retaining device from the rolling-apron, substantially as described.

7. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a transverse shaft H, adapted to be rotated when the rocking arm moves through connections with the latter, the reciprocating shafts *k*, arranged at one end of the rolling-table and having hollow headers on their inner approximate ends, connections between said shafts and the shaft H for rotating the headers, and springs for moving the shafts *k* and the headers laterally to adjust one of the headers upon one end of the cigar, substantially as described.

8. In a cigar-wrapping machine, the combination, with a rolling-table, an apron, and a rocking arm carrying a presser-roll, of a rotary shaft H, having the pulleys, the reciprocating shafts *k*, arranged at the opposite end of the table from the shaft H, and having pulleys, which are belted to the pulleys of the shaft H, the hollow cone-shaped headers fixed to the inner ends of the shafts *k*, and springs for moving the shafts and headers toward each other, substantially as described.

9. In a cigar-wrapping machine, the combination, with a rolling-table and an apron, of a retaining device located at one end of said table, a rotary header located laterally of said retaining device to act upon one end of a cigar after it has been deposited in the retaining device, and a rocking arm having a presser-roll and adapted to traverse the rolling-table and provided with suitable devices to move the header laterally of the retaining device when said arm approaches the latter to deposit the cigar therein, substantially as described.

10. In a cigar-wrapping machine, the combination of a cigar-rolling table having its upper surface covered continuously with vertical yielding bristles, which terminate a short distance from the front end of said table, a rocking arm carrying a presser-roll, an apron connected to said table and passing over said presser-roll to form a bight at the front end of the table for the reception of the bunch when the arm is at rest in its normal position at the front of the table, a retaining device located at the opposite end of the table, and a rotary header arranged laterally of said retaining device, substantially as described.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

JAMES EDWARD SMITH.

Witnesses:

ADOLPH MOONELIS,

SAML. M. HOPKINS.