(No Model.) 5 Sheets—Sheet 1.

A. MOONELIS.

CIGARETTE MACHINE.

No. 546,824. Patented Sept. 24, 1895.

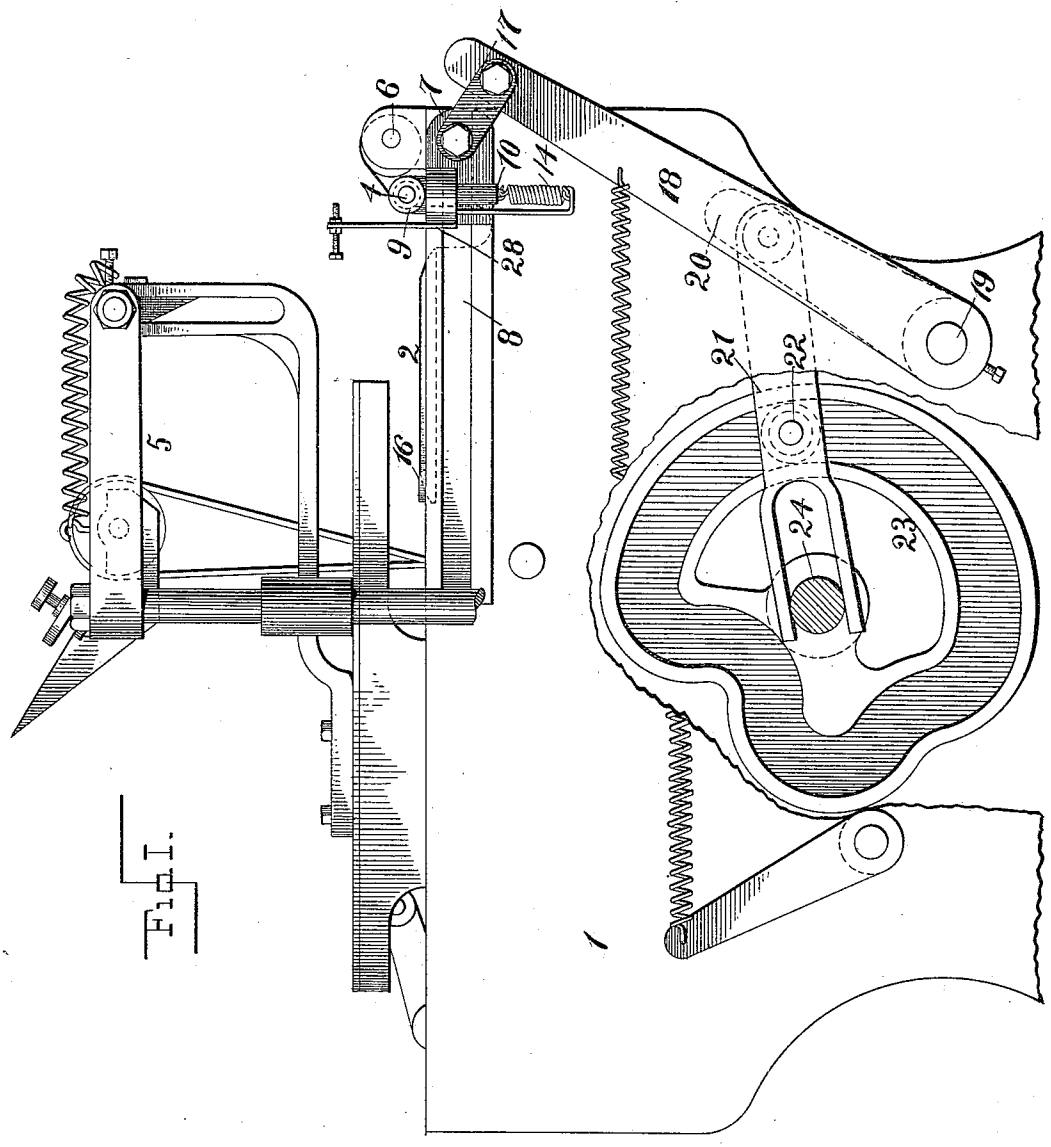

Fig. 1.

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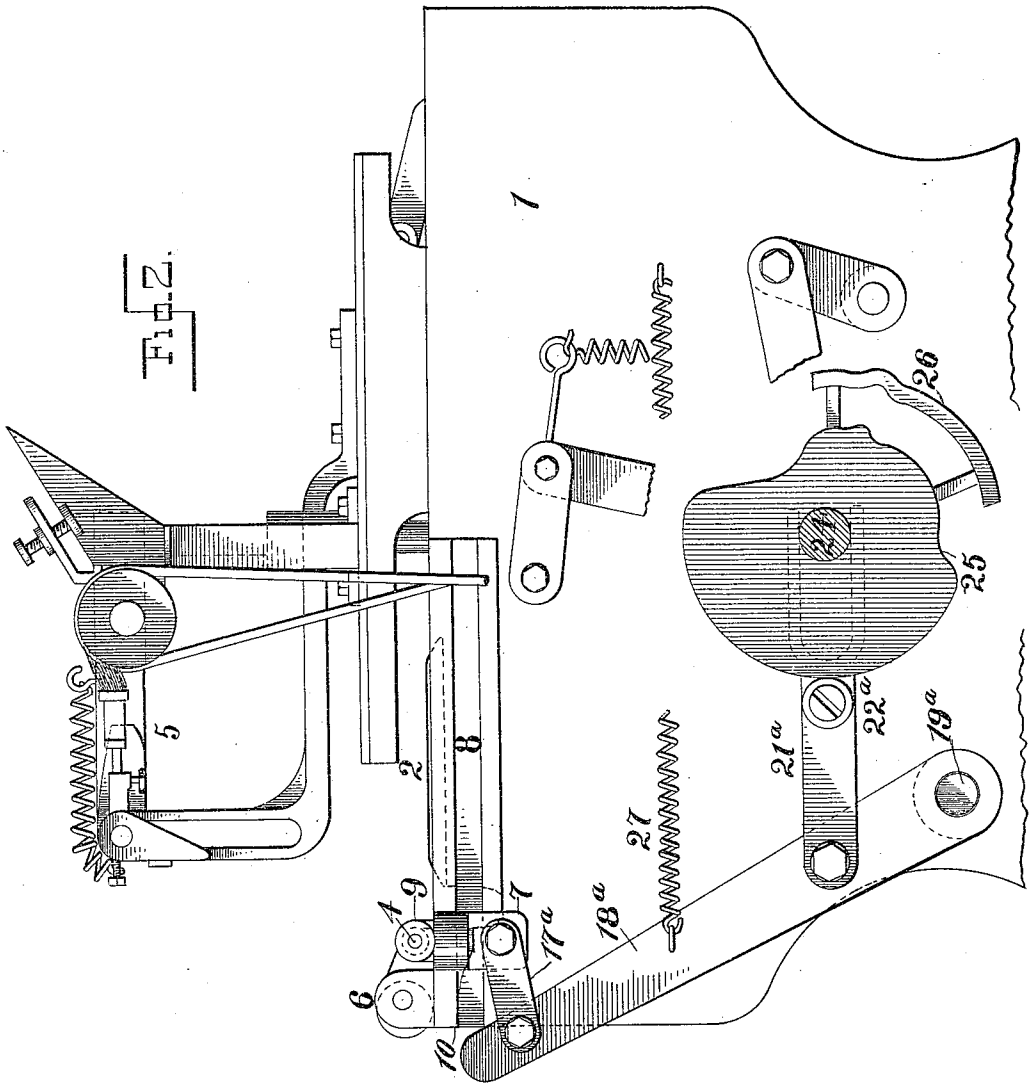
A. MOONELIS.

CIGARETTE MACHINE.

No. 546,824. Patented Sept. 24, 1895.

Fig. 2.



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(No Model.)

5 Sheets—Sheet 3.

A. MOONELIS.

CIGARETTE MACHINE.

No. 546,824. Patented Sept. 24, 1895.

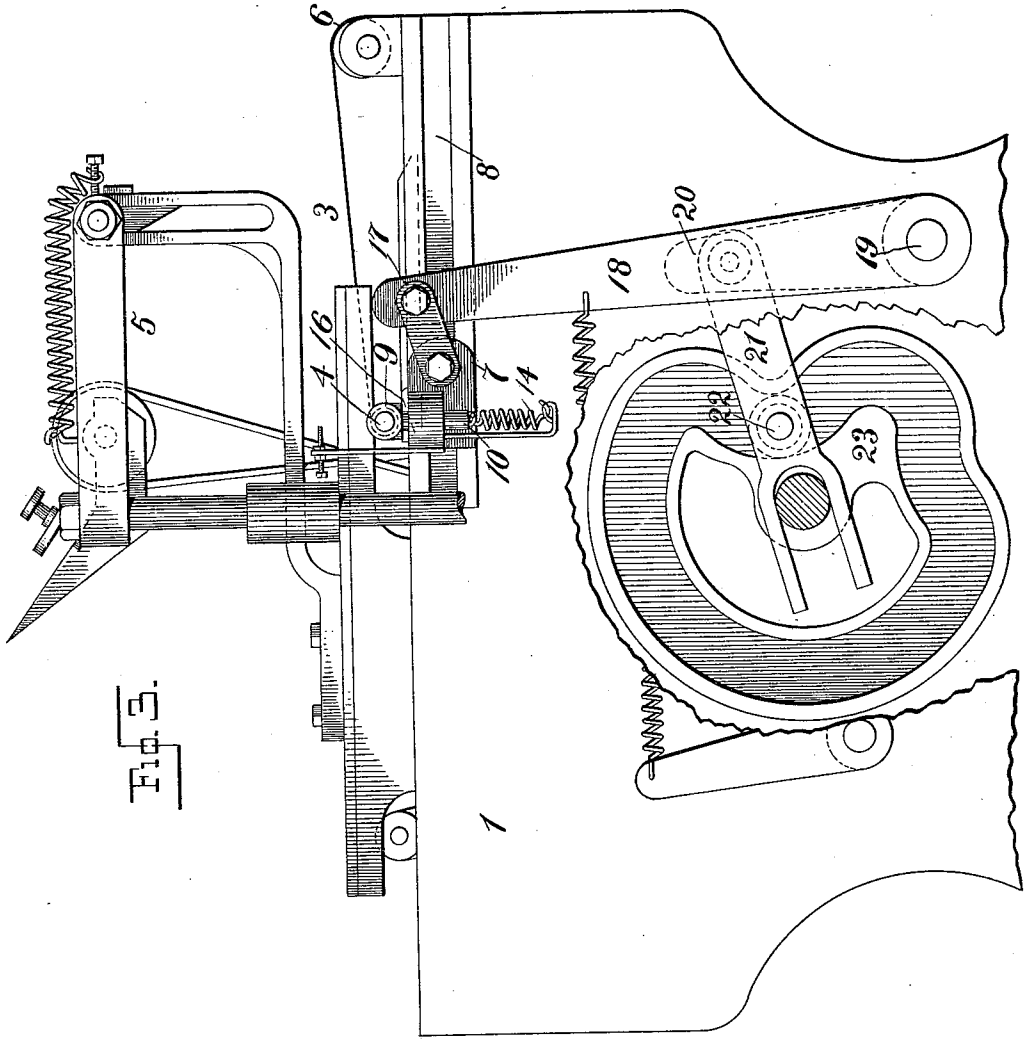

FIG. 5.

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CIGARETTE MACHINE.

No. 546,824. Patented Sept. 24, 1895.

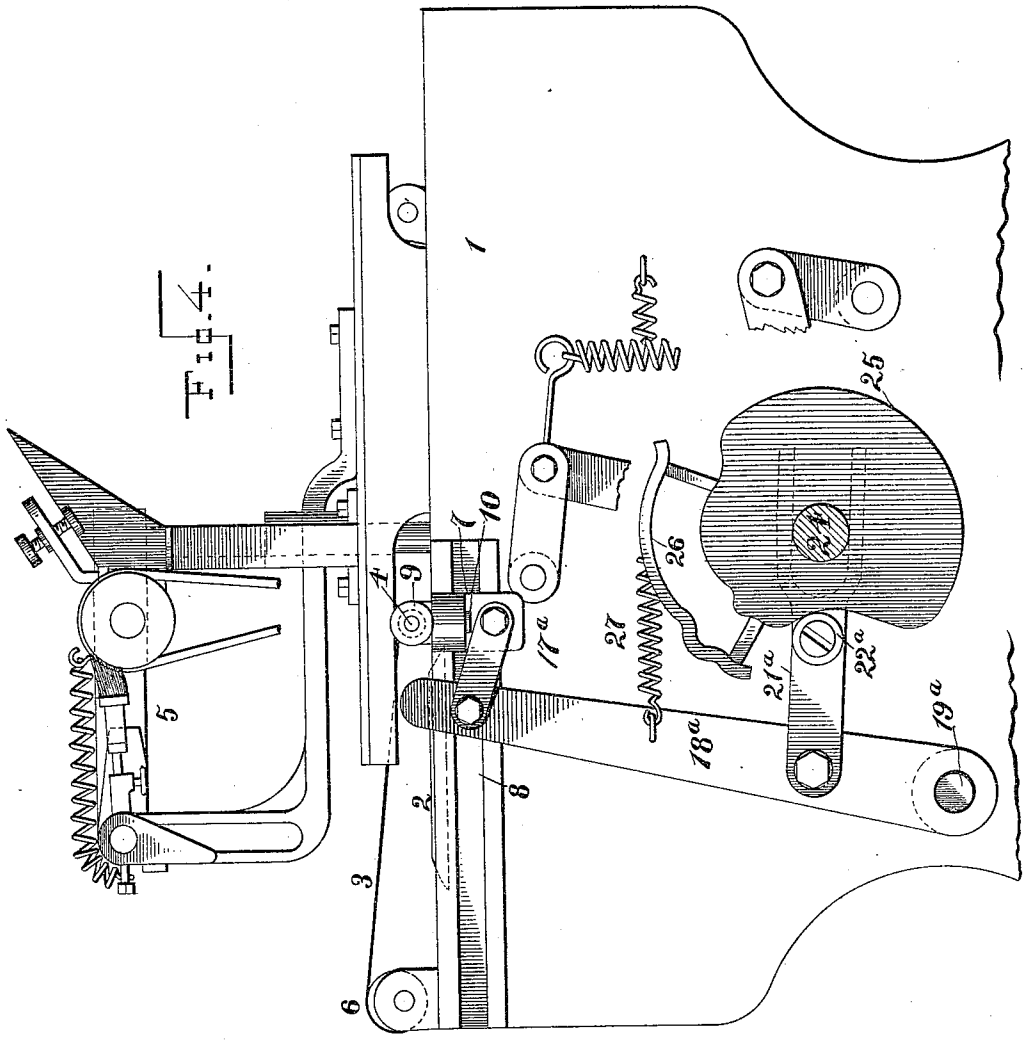

Fig. 4.

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(No Model.) 5 Sheets—Sheet 5.

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CIGARETTE MACHINE.

No. 546,824. Patented Sept. 24, 1895.

Fig. 5.

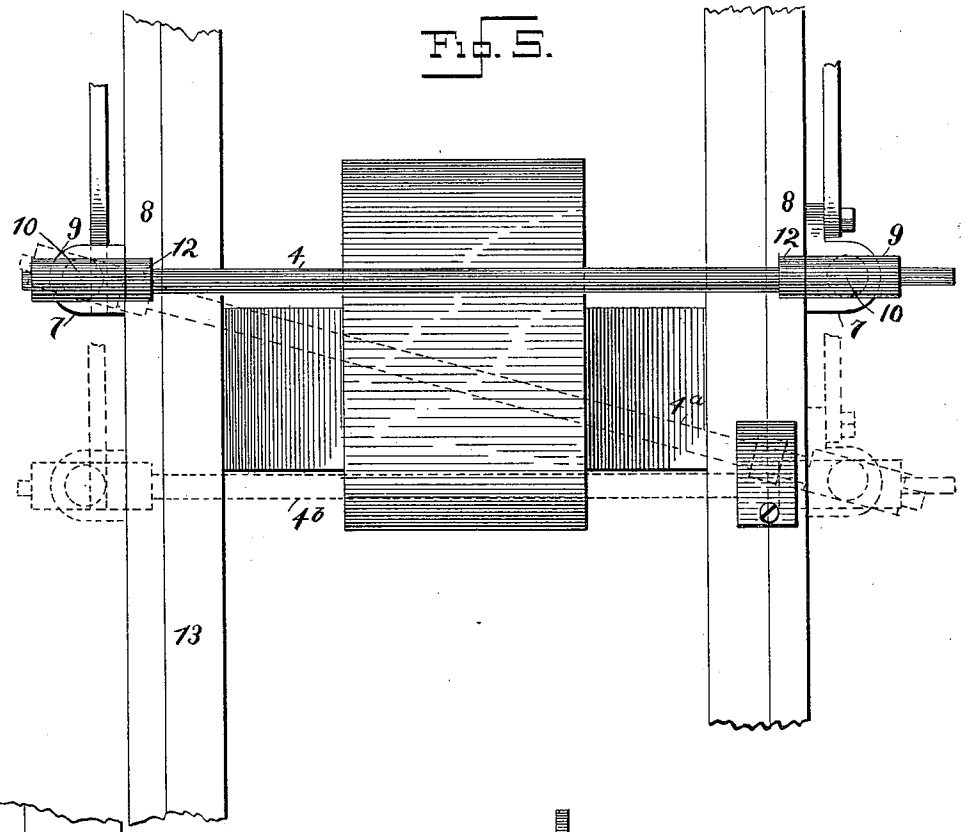


Fig. 6.

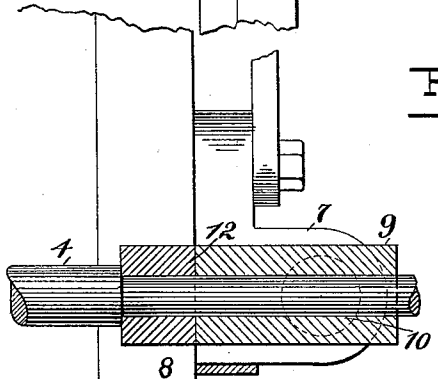
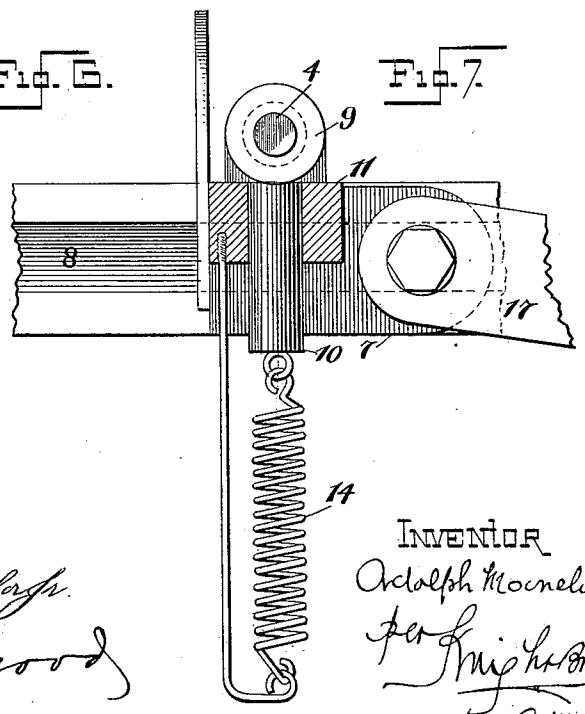


Fig. 7.



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Attys

UNITED STATES PATENT OFFICE.

ADOLPH MOONELIS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN TOBACCO COMPANY, OF NEW JERSEY.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,824, dated September 24, 1895.

Application filed June 20, 1894. Renewed April 20, 1895. Serial No. 546,550. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH MOONELIS, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification.

My invention pertains more particularly to improvements in the class of cigarette-machines shown in my United States Patents Nos. 514,240 and 514,238, dated February 6, 1894, and in my application filed April 9, 1894, Serial No. 506,906, wherein a wrapper previously cut from a tobacco-leaf is rolled upon a tobacco filler suitably prepared and applied to the rolling-apron, upon which the wrapper is placed. In this class of machines a roller is used in conjunction with a rolling-apron to move forward a bight in the apron in order to roll the wrapper upon the filler, and this roller, so far as I am aware, has always heretofore been moved along the rolling-table in a straight line throughout its entire travel.

The object of the present invention is to secure the rolling of the wrapper upon the cigarette more evenly than in constructions heretofore in use, and I secure this result by giving the cigarette-filler and its wrapper a substantially sidewise or angular rolling motion, by which the wrapper is drawn taut on the filler and put under a longitudinal tension, which aids materially in straightening out the wrapper and avoiding wrinkles therein.

The invention is applicable generally in connection with machines for rolling a wrapper upon a cigarette-filler and may be applied in connection with rolling devices of different forms and the desired movement secured by different means; but in machines constructed as in the patents above referred to I secure this result by causing the roller to move angularly with relation to the rolling-table. This manner of rolling the cigarette-filler and its wrapper will be found very desirable when the wrapper is presented to the filler in an angular direction, or as shown in my application for a patent filed April 9, 1894, Serial No. 506,906.

In carrying out my present invention in the class of machines above referred to, I preferably move the roller straight along the rolling-table for the major portion of its travel, and when near the end of the table I cause one end of the roller to advance, while the opposite end comes to rest, and when the first-mentioned end of the roller comes to rest then the opposite end advances to the end of the travel of the roller. Thus the roller near the end of its forward travel is given a side motion on the rolling-table which very closely approximates the motion of an operator's hand in making what are known as "hand-made" cigarettes.

Another feature of the invention consists in the separation of one end of the roller from the rolling-table at or near the end of its movement, so as to allow the cigarette to expand slightly from that end, an improved product being thus secured. This feature is preferably used in connection with the angular rolling above described; but it is of value also in machines in which the cigarette is rolled straight.

The invention also consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a partly-broken side elevation of a cigarette-machine embodying my invention. Fig. 2 is a similar view, looking from the opposite side of the machine. Fig. 3 is a view corresponding to Fig. 1, showing the roller in the forward or cigarette-delivering position. Fig. 4 is a view corresponding to Fig. 2, showing the roller in the forward position. Fig. 5 is a plan view, enlarged, of the rolling-apron and roller, showing in dotted lines the angular positions of the roller; and Figs. 6 and 7 are detail sectional views showing the means for supporting the ends of the roller.

Similar numerals of reference indicate corresponding parts in the several views of the drawings.

In said drawings the numeral 1 indicates a suitable frame for the machine. 2 is a rolling-table; 3, a rolling-apron. 4 is the roller, and 5 is a suitable wrapper-pasting mechanism. The above parts may all be of substantially the same construction as shown in my said

patents and application, or of other suitable arrangement. The apron 3 may also be permanently held at its forward end and secured to a roller 6 at its outer end for the purpose of taking up the slack, as shown in my said patents and application, or otherwise, as desired. The roller 4 travels to and fro over the table 2 to roll a cigarette-filler and apply a binder in conjunction with the rolling-apron 3, and for this purpose said roller is shown carried by slides 7, that travel in guides 8, carried on opposite sides of the frame 1. The roller 4 is so carried by the slides 7 that it may have a pivotal movement at its ends on said slides, and for this purpose said roller is shown carried by bearings 9, that are pivoted on the slides 7, as by pins or studs 10, that project from the bearings 9 into suitable apertures 11 in said slides. The roller 4 is shown provided with bushings or wheels 12, that ride in a way or track 13 on frame 1, whereby said roller may be caused to rotate as it travels along the table 2. The pin 10 at one end of the roller 4 is allowed vertical movement, so that the roller at that end may rise slightly from the way 13, and said pin is kept depressed by a suitably-arranged spring 14. (See Figs. 1, 3, and 7.) In the example illustrated the spring 14 is in the form of a coiled spring secured at one end to the pin 10 and at its other end to a depending arm 15, carried by the slide 7.

The way or track 13 at the forward or inner portion, on the side on which the spring is located, is provided with a raised plate or step 16, upon which the roller 4 or its bushing 12 can ride, so as to provide a pivotal point for the end of said roller to turn on the spring 14, permitting said roller to rise when it encounters said plate. (See Figs. 3 and 5.) Each end of the roller 4 is moved along the ways or tracks 13 by independent and separately-operating devices, so that the roller can be given separate movements at its ends or canted when desired. For this purpose the slide 7 at one side of the machine is pivotally connected by a link 17 with a lever or rock-arm 18, carried by a rock-shaft 19, journaled on the frame 1. The shaft 19 also carries an arm 20, that is pivotally connected with a rod 21, having a friction-roller 22, that bears on a cam 23 on the main shaft 24, suitably driven, whereby the arm 18 is moved back and forth to reciprocate the respective slide 7, the rod 21 being forked to straddle the shaft 24. The cam 23 is so shaped that it will move the slide 7 forward or inward to the end of its stroke, then allow it to come to rest, as in Fig. 3, and then return said slide to the normal position, as in Fig. 1, the roller 4 at the corresponding end being given similar movement; but the devices for moving the slide 7 by the cam 23 may be otherwise arranged, if desired.

The slide 7 at the opposite end of the roller 4 is connected by a link 17^a with a rock-arm 18^a, carried by a rock-shaft 19^a, journaled in frame 1, said parts having movement independent of the opposite slide 7 and its connected parts. The arm 18^a is connected with a rod 21^a, having a roller 22^a to bear on a suitably-shaped cam 25 on shaft 24, the rod 21^a being forked to straddle the shaft 24. The cam 25 is suitably shaped to cause the corresponding slide 7 to advance coincidently with the opposite slide 7 for a portion of the travel of the roller, to then bring said slide to rest to stop the advance of one end of the roller 4, while the opposite end advances by the action of cam 23 to the end of its stroke, the cam 25 then advancing its slide 7 to again bring the roller 4 in the normal position across the table 2. The cam 25 is shown provided with an extension-pin 26 to act with the roller 22^a to draw back the arm 18^a. A spring 27, connecting the arm 18^a with the frame 1, also acts in conjunction with the cam 25 to operate the arm 18^a. Of course the arrangement of the cam 25 and its connection with the slide 7 may be otherwise arranged, as desired. It will be understood that the cams 23 and 25 are turned synchronously by the shaft 24 and that the arms 18 and 18^a and their connected slides 7 are moved independently.

The operation is as follows: As shown in Figs. 1 and 2, the parts are in their normal positions, the apron 2 having a bight or pocket 28, in which a filler for a cigarette may be placed by hand or by suitable mechanism. A wrapper is placed on the apron close to the pocket 28 by hand or by suitable means—as, for instance, that shown in my aforesaid patents. A filler now being placed in the pocket 28 and a wrapper upon the apron the machine is started. The cams 23 and 25 now turn and move the slides 7 and roller 4 along the table 2 uniformly, the wrapper being thereby rolled around the filler. When the roller 4 has reached about the position shown in Fig. 5, the cam 25 causes the corresponding slide 7 to come to rest, while the cam 23 causes the respective slide 7 to continue to advance until the roller 4 reaches the plate 16, upon which it rides and comes to rest. The roller 4 will now be in the position shown by dotted lines 4^a in Fig. 5, in which position the roller 4 will extend diagonally across the table 2. In arriving at this position the roller 4 gives the cigarette in the apron 3 a substantially angular rolling movement. The cam 25 next causes its respective slide 7 to advance, so as to bring the roller 4 into the position shown by dotted lines 4^b in Fig. 5, which is the normal position of the roller relatively to the table 2, this latter movement of the roller 4 by the cam 25 giving the cigarette another angular movement in the apron 3. These angular movements of the roller 4 have substantially the effect of an operator's hand in rolling the cigarette and tend to roll the same evenly and smoothly and prevent the wrapper from being bunched or creased on the filler. A continued turning of the cams 23 and 25 next causes the slides 7 and roller 4 to

return to their normal positions, as in Figs. 1 and 2.

From the foregoing it will be seen that the cigarette-filler is first rolled in straight lines and then in angular lines, and it will be delivered from the apron when the roller 4 reaches the position shown at 4^b in Fig. 5.

Having now described my invention, what I claim is—

1. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices with a sidewise or angular movement, substantially as described.

2. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices at right angles to the line of rolling during one part of the rolling operation and with a sidewise or angular movement during another part of the rolling operation, substantially as described.

3. The combination with a rolling table and rolling devices coacting therewith to roll a cigarette wrapper on a filler, of means for moving the rolling devices with a sidewise or angular movement relatively to said table, substantially as described.

4. The combination with a rolling table and rolling devices coacting therewith to roll a cigarette wrapper on a filler, of means for moving said rolling devices in straight lines during one part of the rolling operation and moving the rolling devices angularly with relation to the rolling table during another part of the rolling operation, substantially as described.

5. The combination of a rolling table and apron, with a roller and means for moving the latter independently at opposite ends to enable it to move angularly with relation to the rolling table, substantially as described.

6. The combination of a rolling table and apron, with a roller, and independent actuating devices connected with opposite ends of said roller for moving its ends separately, substantially as described.

7. The combination of a rolling table and apron, with a roller, and means for first moving said roller along said table in straight lines, and for then moving said roller angularly, substantially as described.

8. The combination of a rolling table and apron, with a roller, and means for moving said roller at one end continuously in straight lines, and means for moving the opposite end of said roller intermittently along the rolling table, substantially as described.

9. The combination of a rolling table and apron, with a roller, and means for moving said roller along said table in straight lines for a certain distance, for then arresting the movement of one end of said roller, and for then further advancing said end of said roller, substantially as described.

10. The combination of a rolling table and apron with a roller, slides to which said roller is pivotally connected, and means for independently actuating said slides, substantially as described.

11. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for separating the rolling devices to relieve the pressure on one end of the filler, substantially as described.

12. In a cigarette machine, the combination with rolling devices for rolling a cigarette wrapper on a filler, of means for actuating said rolling devices with a sidewise or angular movement, and means for separating the rolling devices to relieve the pressure on one end of the filler, substantially as described.

13. The combination of a rolling table and apron with a roller, means for moving the latter over the rolling table, and means for raising one end of the roller from the table at the end of the rolling operation, substantially as described.

14. The combination of a rolling table and apron with a roller, means for moving the latter along said table in straight lines for a certain distance and for then moving said roller angularly, and means for raising one end of said roller from the table during the angular movement, substantially as described.

15. the combination of a rolling table and apron, with a roller, slides, bearings carried thereby to receive said roller, pins connecting said bearings with said slides, one of said pins being connected with one slide by a spring, ways or tracks for said roller, a raised plate or stop on said way to receive and raise said roller at one end, and means for reciprocating said slides, substantially as described.

16. The combination of a rolling table and apron, with a roller, cams for operating said roller and connections between said cams and said roller, one of said cams being arranged to advance one end of said roller, to then bring it to rest and to again advance said roller, and a spring to act with said cam to operate the roller, substantially as described.

17. The combination of a rolling table and apron with a roller, slides connected therewith, links connected with said slides, rock arms independently supported connected with said links, a cam connected with one arm to move it continuously in one direction, another cam connected with the other arm and arranged to move said arm conjointly with the first mentioned arm for a certain distance, to then arrest the movement of said arm and to then advance said arm, substantially as described.

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