

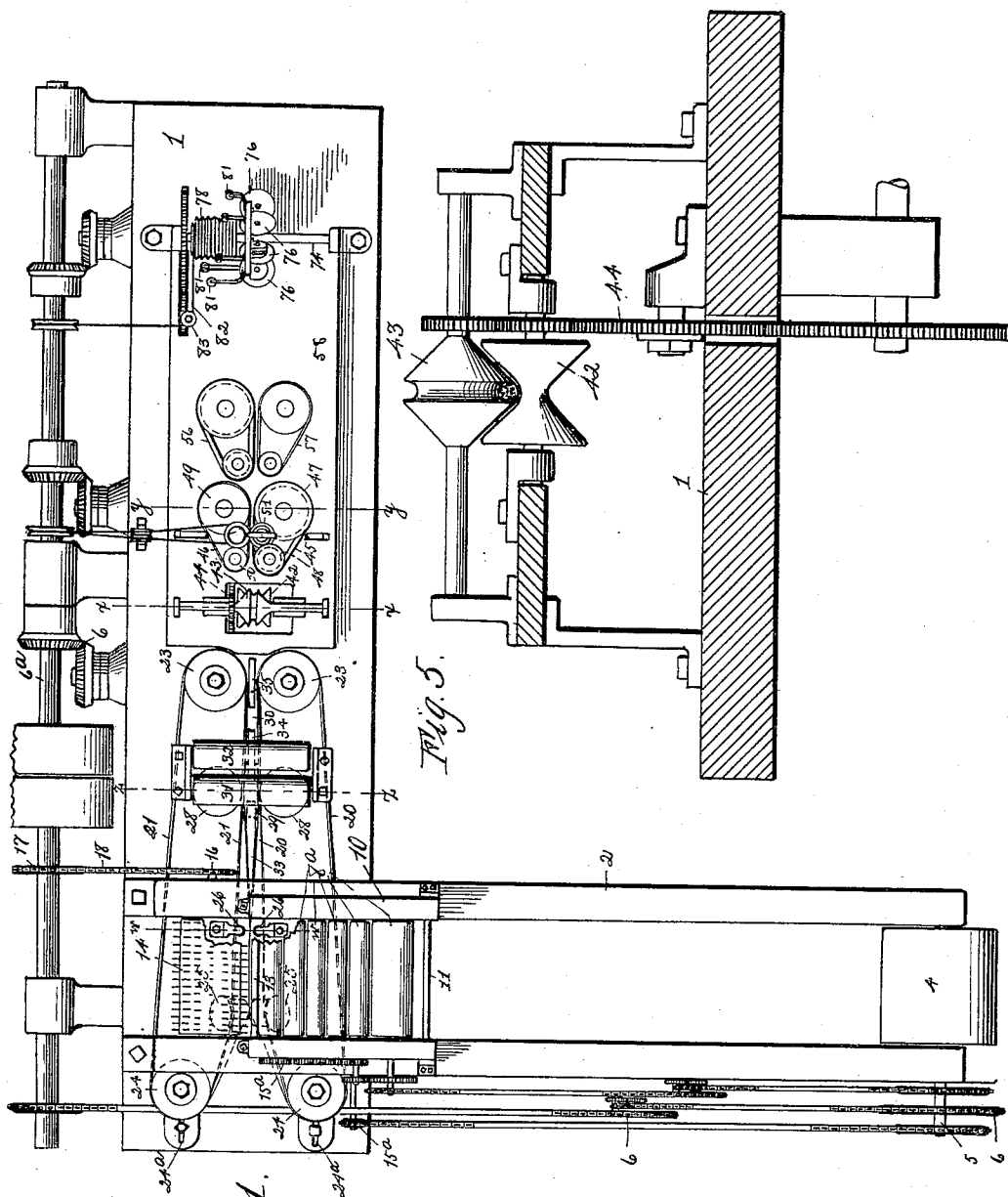
(No Model.)

6 Sheets—Sheet 1.

C. C. SATTERWHITE.  
CONTINUOUS CIGARETTE MACHINE.

No. 583,001.

Patented May 18, 1897.



Witnesses  
*G. M. Anderson*  
*Phil. Masi.*

Inventor  
*C. C. Satterwhite*  
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his Attorney

(No Model.)

6 Sheets—Sheet 2.

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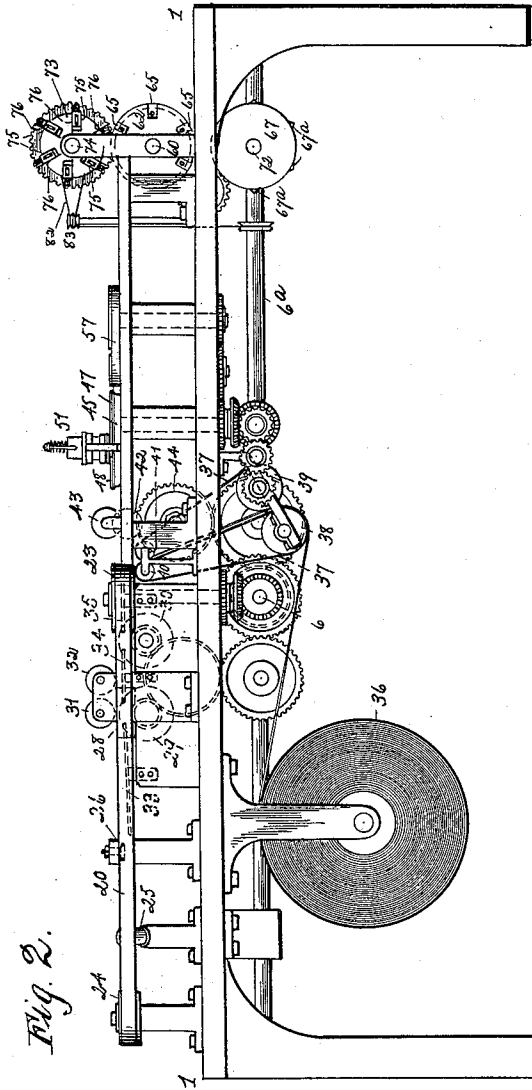


Fig. 2.

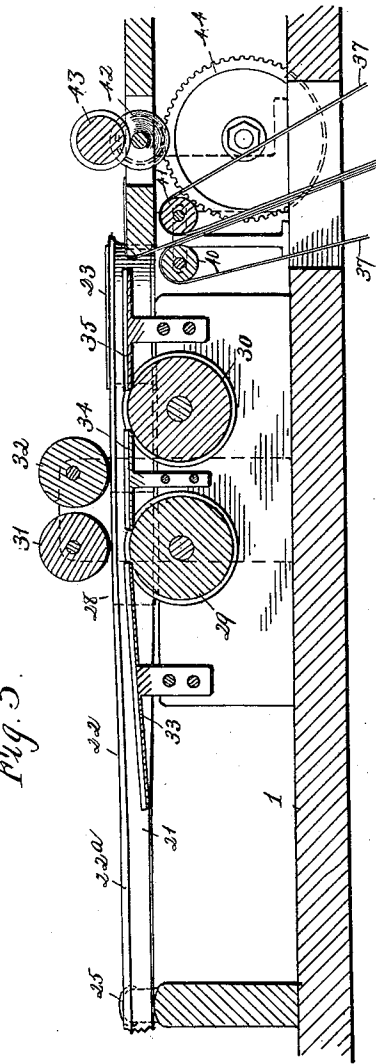


Fig. 3.

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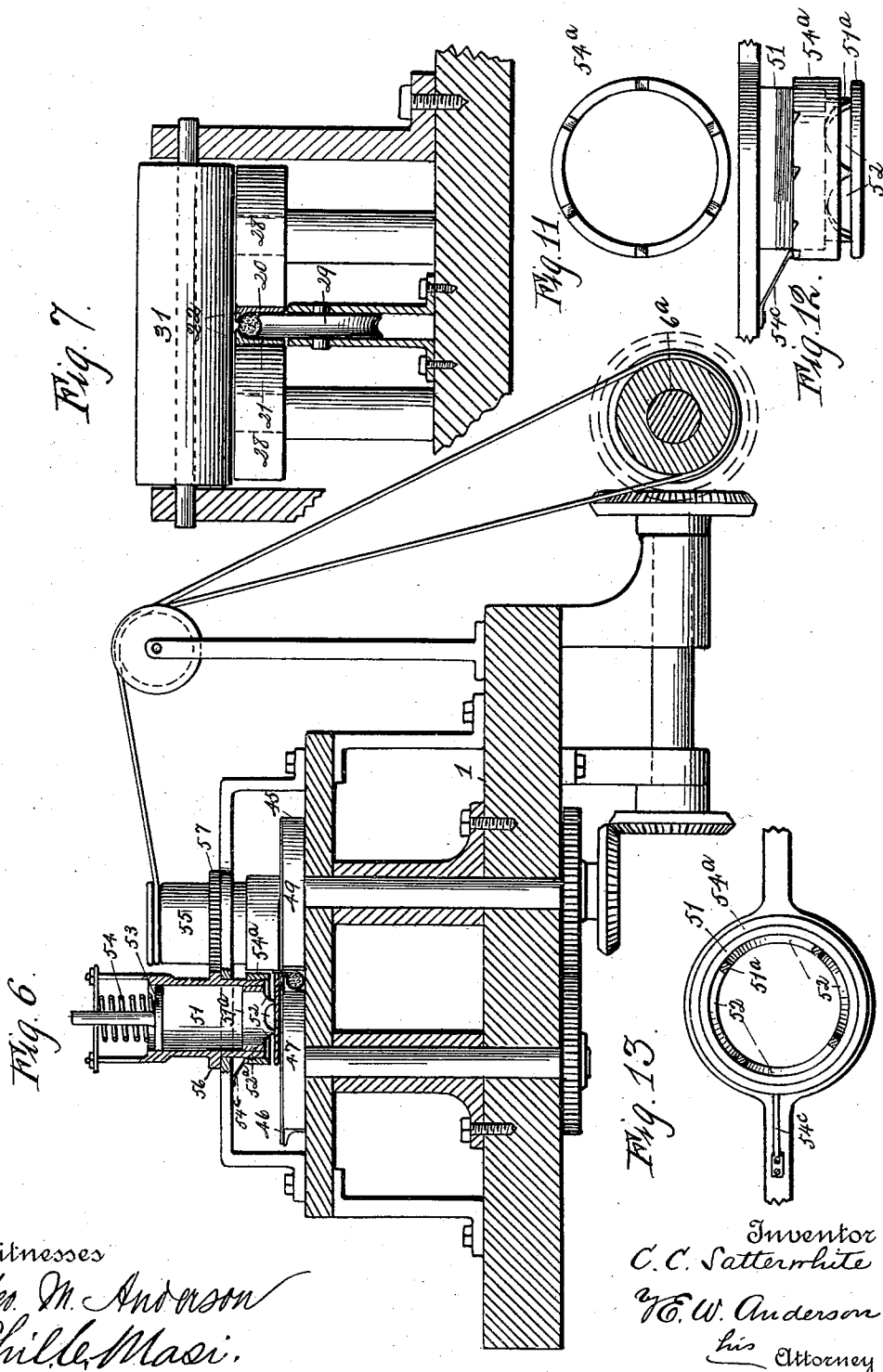
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Fig. 8.

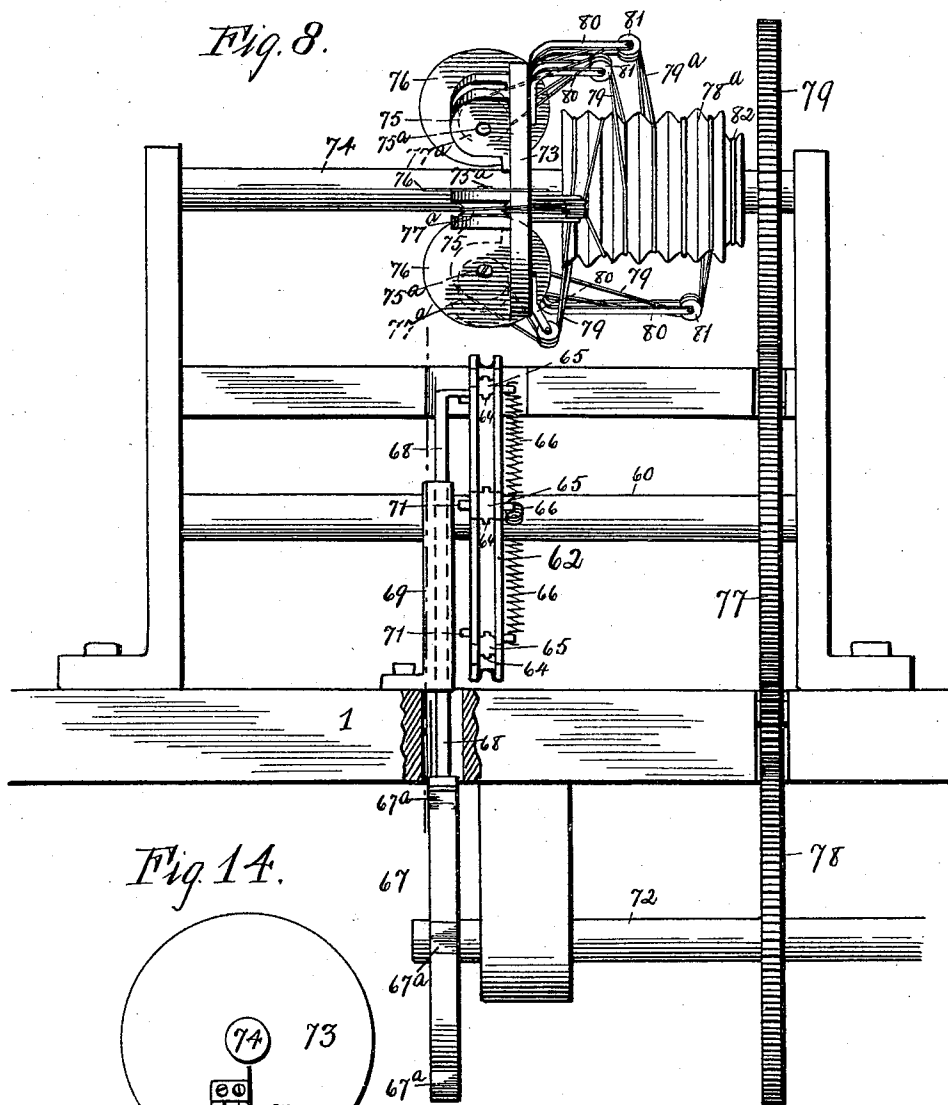
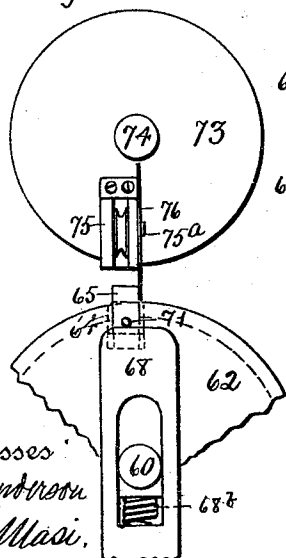


Fig. 14.



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C. C. SATTERWHITE.  
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Fig. 9.

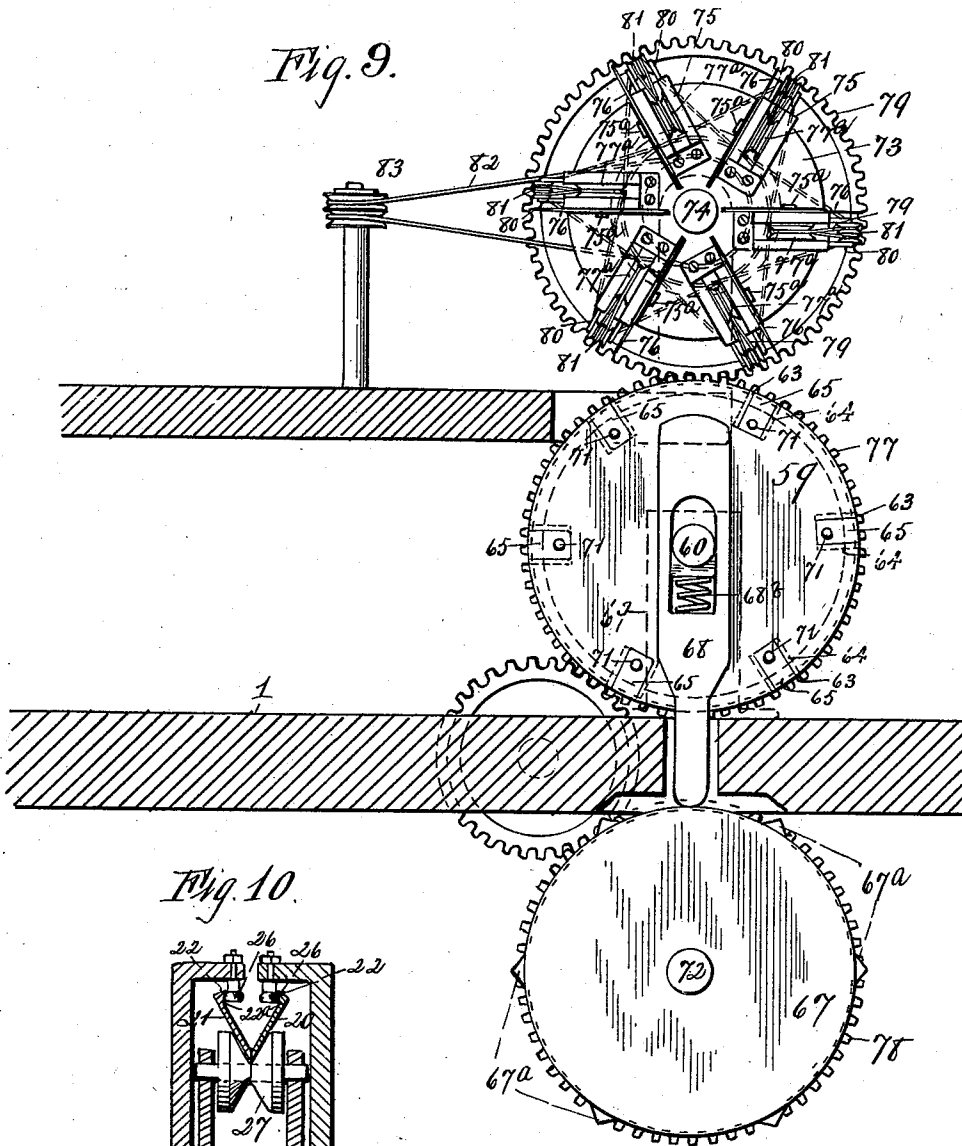
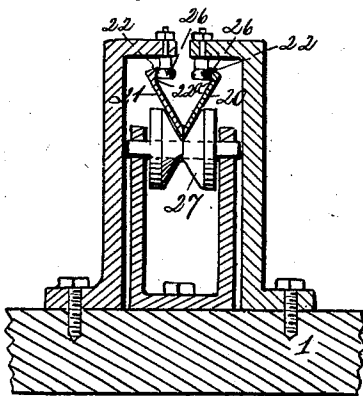


Fig. 10.



Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES C. SATTERWHITE, OF RICHMOND, VIRGINIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE DIAMOND CIGARETTE MACHINE COMPANY, OF WEST VIRGINIA.

## CONTINUOUS-CIGARETTE MACHINE.

SPECIFICATION forming part of Letters Patent No. 583,001, dated May 18, 1897.

Application filed March 15, 1895. Serial No. 541,911. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. SATTERWHITE, a citizen of the United States, and a resident of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Continuous-Cigarette Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a plan view of the complete machine, the feed-belt, the gear for driving the paste-roll, and the belts for driving the cutter-disks not being shown and the support for the paste-roll being broken. Fig. 2 is a side elevation of the machine with the tobacco feeding and carding mechanism removed. Fig. 3 is a central vertical section showing the parts which form the filler-rod. Fig. 4 is a central vertical section through the tobacco feeding and carding mechanism. Fig. 4<sup>a</sup> is a sectional view showing a modification of part of the feeding mechanism. Fig. 5 is a section on line *x x*, Fig. 1. Fig. 6 is a section on the line *y y*, Fig. 1, the support for the paste-roll being broken away and said roll in section. Fig. 7 is a section on line *z z*, Fig. 1. Fig. 8 is a front view of the cutter mechanism. Fig. 9 is a side view of same, the frame being in section and the guide for the slotted arm 68 in dotted lines. Fig. 10 is a section on line *w w*, Fig. 1. Fig. 11 is a plan view of sleeve for regulating the paste-discharge. Fig. 12 is an elevation of paste-roll below the support. Fig. 13 is a section of the same on line *a a*, looking up. Fig. 14 is a fragmentary view of cutter mechanism, showing block 65 thrown up and in cutting relation to one of the cutter-disks. Figs. 15 and 16 are detail views illustrating the manner in which the paper is folded around the filler-rod.

This invention has relation to a cigarette-machine of the class known as "continuous machines," wherein the tobacco is formed into

an endwise-moving continuous filler-rod, and a continuous wrapper folded around said rod and its edges pasted together, the cigarettes being cut from this enveloped rod as the latter is delivered from the machine, the entire operation being mechanically performed.

It is the object of this invention to provide mechanism of improved character for carrying out the steps of the operation from the time the tobacco is fed into the machine until the finished and cut cigarettes are delivered therefrom, which will operate in a rapid and efficient manner, and which will be operative with tobacco of different kinds and in different conditions, and with different grades and manufactures of paper.

A further object is to simplify the machine as far as possible, doing away with complicated and difficult mechanism, which is liable to get out of order, and to provide throughout the machine parts of simple nature and positive in their operation.

With these objects in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, numeral 1 designates the main frame of the machine, which is of suitable character to provide proper support and bearing for the operative parts.

2 is the main frame of the tobacco-feeding device, which is rigidly secured to the rear portion of the main frame, from which it extends at right angles.

3 is a main feed-belt, which is driven by a pulley 4 on a shaft 5, connected by sprocket or other gear (marked 6) with the main shaft 6<sup>a</sup> of the machine, which shaft is journaled longitudinally of the main frame 1 in suitable lateral bearings thereof. The feed-belt 3 also passes over an idle-roller 7, a series of transverse lower presser-rolls 8, a transverse plate 9, thence down and over an idle-roller 10<sup>a</sup>, and back to pulley 4.

Above the lower series of presser-rolls 8 and the belt 3 are an upper series of similar rolls 8<sup>a</sup>, which are journaled transversely in

an upper pivotal section 10 of the frame 2, the pivotal bearing therefor being indicated at 11.

11<sup>a</sup> is an additional and larger pressure-roller at the rear of the rollers 8<sup>a</sup>.

12 is an adjusting-screw at the forward end of this section 10, by means of which it can be raised or lowered to regulate the vertical distance between the two series of pressure-rolls, according to the amount of tobacco that is being fed. The section 10 has a downward incline toward its forward end, whereby the upper series of rolls is brought into converging relation to the lower series.

13 is a transverse steel plate which is carried by the section 10 and which is directly above the lower plate 9.

14 is a carding and distributing roller which is journaled transversely of the frame 2, just in front of the plates 9 and 13. The surface of this roller is studded with pins 15 or the like, and it is employed for the purpose of tearing or carding the tobacco as it is discharged between the said plates from the feed-belt and pressure-rolls. Both the upper and lower series of these rolls are positively driven by independent trains of suitable gear, such as indicated at 15 15<sup>a</sup>. The carding-roller 14 derives its motion from the main shaft 6<sup>a</sup> by means of sprocket-wheels 16 and 17, connected by a chain 18, or by other suitable gear.

19 are guides or hopper-plates which are bolted to the feeder-frame 2, and which are for the purpose of guiding the tobacco as it falls from the roller 14 to deliver it to the rod-forming mechanism, now to be described.

20 21 designate two endless belts, which are each formed at the upper edge portion with an inward flange 22, having a curved face 22<sup>a</sup>. 23 23 designate the driving-pulleys for said belts. 24 24 are idle-pulleys around which they pass at the rear, and which are made adjustable, as indicated at 24<sup>a</sup>, to regulate the tension of the belts, and 25 25 are other idle-pulleys a short distance in front of the pulleys 24 24. These pulleys 25 25 are journaled at an angle to each other, as best seen in Figs. 1 and 4, whereby the lower edges of the two belts are thrown together, so that the belts form a V-shaped trough or receptacle into which the tobacco falls from the carding-roller. In front of these pulleys are two idle-rollers 26, which run between the two belts in engagement with the edge flanges thereof, (see Fig. 10,) while underneath a grooved roller 27 further holds the belts to the proper position. In order that the meeting edges of the belts may be in close contact with each other, such edges are beveled or chamfered, as indicated. After the belts leave the rollers 26 and 27 they are again caused to resume their edgewise or vertical positions, being guided and held in such positions by idle-rollers 28.

29 and 30 are two vertically-disposed pe-

ripherally-grooved rollers journaled in suitable bearings of the frame and running between the lower edge portions of the two belts after the latter have been brought back to a vertical position.

31 and 32 are two plane-surfaced transverse rollers which turn in close relation to the upper edges of the belts directly over the rollers 29 and 30, (see Figs. 3 and 7,) their purpose being to prevent the tobacco from protruding through between their said upper edges as they close upon it.

33 is an edgewise-disposed plate which is secured to the frame 1 behind the first wheel or roller 29, its upper edge projecting between the two belts and provided with a groove which conforms to the groove of the said wheel or roller. 34 is a similar plate situated between the two wheels or rollers 29 and 30, and 35 is a third plate which is placed in front of 30, extending partially over the periphery thereof. The grooves of these three plates and of the two rollers form a practically continuous channel for the filler-rod. It will be observed that when the two belts and the top rollers 31 and 32 are in position they form with this groove or channel a cylindrical passage which shapes the rod of tobacco as it passes there-through under the feed, as will be more fully hereinafter described.

36 designates the paper-holding roll, which is journaled in suitable bearings, which preferably depend from the under side of the frame 1. From this roll the paper passes forward and thence upward and rearward between two parallel friction-belts 37, which run in close contact with each other and at the same speed. These belts are driven, respectively, by the pulleys 38 and 39 and run around the idle-pulleys 40 and 41, and are for the purpose of pulling the paper from the roll and carrying it to the folding devices. They are extremely effective for this purpose, since they deliver the paper steadily and prevent its wobbling back and forth, being operative with paper of different styles and grades. From these belts the paper passes between a pair of horizontal rollers 42 43, situated in front of the grooved plate 35 and which are positively driven by suitable gearing 44 and travel at the same speed as the paper. The lower roller 42 has therein a deep V-shaped groove, somewhat flattened or curved at the bottom, which gives the initial form to the paper. The upper roller 43 is complementary to the lower roller, being of double-cone form, and has in its periphery an approximately semicircular groove which assists in maintaining the shape of the filler-rod as it passes thereunder and enters the paper.

45 is a partially-grooved endless-face belt, and 46 is a straight-face belt, the former being driven by a pulley 47 around an idle-pulley 48 and the latter by a pulley 49 around an idle-pulley 50. These two belts run parallel with each other at their working portions,

the partially-grooved one on the outside being for the purpose of folding the outer edge of the paper over the filler-rod as the latter passes through. The straight-face belt on the inside permits the inner edge portion of the paper to stand straight to receive paste from the means now to be described.

51 designates a paste-wheel which consists of a hollow cylinder which forms the paste-receptacle. This cylinder has a bottom portion 51<sup>a</sup> attached thereto, in the manner best shown in Figs. 6 and 11, with the openings 52 in its vertical flange 52<sup>a</sup>, through which the paste is caused to ooze to the surface of the wheel under the action of a plunger 53 and spring 54. By adjusting a sleeve 54<sup>a</sup>, which is threaded onto the lower end of said cylinder, the size of the openings through which the paste escapes may be varied and the supply of paste delivered to the exterior of the wheel regulated as may be necessary.

54<sup>c</sup> is a spring which is secured to the cylinder 51 and is arranged to engage notches in the upper edge of the sleeve 54<sup>a</sup>.

55 is a roller journaled parallel with the paste-roller and in proximity thereto, its purpose being to press the standing edge of the paper closely to the paste-roll to receive its coating of paste. The wheel 51 and roller 55 are rotated by the gear 56 and 57. It will be observed that the wheel and roller are so placed that the slight space between them is directly over the space between the belts 45 and 46, so that the standing edge of the paper readily passes between the wheel and roller.

56 and 57 are two belts in front of the belts 45 and 46 and which are similar to the latter, with the exception that the one (56) with the partially-grooved face is placed upon the inside, while the one (57) with the straight face is on the outside, or the same side as the grooved belt 45. (See Figs. 15 and 16.) These four belts serve the double purpose of completely folding the paper around the filler-rod and of pulling the rod and paper through the machine, whereby all clogging is avoided. 58 is a table underneath the said belts. From these belts the enveloped rod passes to the cutting apparatus, now to be described.

59 designates a disk which is fast to a rotary shaft 60, journaled in suitable bearings 61, and having in its periphery a groove 62, which is in proper relation to the table 58 to receive the continuous cigarette as it comes from the folding-belts. At equal distances in said disk are cut peripheral seats 63, having guides 64 for radially-movable blocks 65, each of which has attached thereto a strong spring 66, which is also attached to the shaft 60. Below said disk 59 is a disk 67, which has on its periphery a series of cam projections 67<sup>a</sup> of the same number and spaced from each other the same distance as the blocks 65.

68 is a slotted arm embracing the shaft 60 and capable of a vertical movement in suit-

able guides 69. The lower end of this arm is arranged to contact with the cam projections 67<sup>a</sup>, and its upper end is designed to contact with pins 71, one of which is carried by each of the blocks 65 and projects beyond the face of the disk 59.

68<sup>b</sup> is a spring for retracting the arm 68.

The disk 67 is carried by a rotary shaft 72, with which it is fast.

73 is a third disk which is journaled above the disk 59 on a shaft 74. Attached to one face of said disk is a series of bearings 75, which carry each a shaft or journal upon which is a cutter-disk 76, which is in a plane at right angles to the disks 58, 67, and 73, its edge being in close relation to the periphery of the disk 58. Said cutters are of the same number as the blocks 65, and are separated from each by equal distances.

In order to make a perfect cut, it is desirable that the cutters shall each have a rotary movement independent of their movement with the disk 73. In order to effect such movement, I cut away each of the bearing-pieces 75 and secure on the shaft or journal 75<sup>a</sup> thereof a grooved pulley 77. On the shaft 74 I loosely mount a pulley 78, which is provided with as many independent grooves as there are cutters 76 and pulleys 77—in the present instance six. From this pulley 78 I run an independent belt 79 to each of the pulleys 77. In order to guide these belts and to carry them over the disk 73, I secure to the latter as many brackets 80 as there are belts, and in each bracket, beyond the periphery of the disk, are mounted two grooved pulleys 81. Each belt 79 in going to a pulley 77 passes over one of these pulleys 81, and in returning from 77 passes around the other pulley 81 of the same set. The pulley 78 is driven at a higher speed than the shaft 74 by a belt 82 from the main shaft, such belt having the guide-pulleys 83. By these means each of the cutter-disks is given an independent movement. It is necessary, of course, for each of the several belts 79 to slip upon one or both of the pulleys 77 78 sufficiently to compensate for the rotation of the disk 73 with the shaft. The three disks 59, 67, and 73 are all driven at the same speed by the gears 77, 78, and 79 on the respective shafts 60, 72, and 74, and at the same rate as the feed of the cigarette-rod. The shaft 74 is geared to the main shaft 6<sup>a</sup>.

The operation of the cutting mechanism will be presently described.

In Fig. 4<sup>a</sup> I have shown a modification of the feeding mechanism wherein an upper belt 84 is provided, running around the upper series of pressure-rollers, as indicated.

I have not as a rule deemed it necessary to describe specifically the arrangement of the gearing whereby the various rotary parts are driven, as various arrangements of such gearing may be devised by the mechanic.

The drawings indicate clearly suitable means for driving the various parts.

Having thus described the detailed construction of the various parts, I will now proceed to describe the operation thereof.

The tobacco is fed upon the main belt 3 in proper quantities for the subsequent operations. To facilitate this feeding, the belt may be divided off into equal spaces by a series of transverse lines. The tobacco is carried forward by this belt between the two series of pressure-rollers 8 and 8<sup>a</sup>, the positive movement of which will press the tobacco as closely as required, according to the predetermined adjustment. The tobacco in its continual forward movement with the belt passes between the steel plates 9 and 13, which are for the purpose of getting it as close to the carding-roller as possible while still under pressure and is torn off by said roller and falls between the plates 19 into the V-trough of the belts 20 and 21. By means of this feeding mechanism the tobacco, no matter what may have been its previous condition, is properly prepared for the subsequent operations and is, moreover, fed to the belts 20 and 21 in a regular and uniform manner. These belts again give the tobacco a forward movement as it collects in a layer of uniform thickness in the bottom of the trough formed by the belts, and it is carried by said belts over the grooved plates 33, 34, and 35 and grooved wheels 29 and 30 and under the top rollers 31 and 32, all of which shape it into a round rod. During this operation the grooved wheels 29 and 30 act as feeders. The manner in which this is performed will be apparent from Fig. 7. This rod now passes between the rolls 42 and 43, at which point it also enters the trough of the paper as the latter is shaped by action of the said rolls. (See Fig. 5.) The roll 43 now acts also to hold the filler-rod in place and to feed it onward to the belts 45 and 46. The belt 45 turns one side of the paper over upon the rod, while the opposite edge receives its proper coating of paste from the paste-wheel. After receiving this coating it in turn is folded over by the belt 56 and is pasted to the other side, which was folded by the belt 45. The completely-enveloped rod as it issues from these belts passes into the groove of the disk and is carried forward until one of the blocks 65 comes under one of the cutters 76, at which time one of the cam projections 67<sup>a</sup> comes into contact with and raises the arm 68, causing it to contact with the pin 71 of said block 65. The said block is raised by this contact and the cigarette is forced against the cutter 76 and severed. Spring 66 immediately retracts the block. As the grooved disk, the cam-disk, and the cutter-carrying disk all travel at the same rate of speed and the intermittent actions thereof take place at equal and simultaneous intervals it will be obvious that a perfect and regular cut will be made without in any way checking the feed of the cigarette-rod, which is moved continuously forward.

An important result aimed at in the above-

described machine is that it shall be capable of a high capacity or rate of production, while the parts thereof shall run at a comparatively low speed. That this is achieved to a great extent will be apparent from a careful consideration of the mechanism. As an instance of this attention is called to the fact that the cutting apparatus, which is driven at the same rate of speed as the former, folding, and feeding mechanism, need make but fifty revolutions per minute in order to cut three hundred cigarettes in the same time, a rate of working which would result in an output of eighteen thousand cigarettes per hour.

I do not wish to confine myself to the exact construction and combinations of parts herein shown and described, as various changes and modifications thereof may be made without departing from the spirit and scope of the invention.

I do not claim, broadly, in a cigarette-machine a filler-forming conduit closed at its base and having its side walls formed by opposing separate longitudinal belts, means for inclining outwardly said belts for a portion of their lengths for the receipt of tobacco, and means for subsequently bringing said belts to and maintaining them in substantially vertical parallel planes.

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

1. In a cigarette-machine, the combination of tobacco-feeding mechanism, flanged carrier and former belts upon which the tobacco falls from the feeding mechanism, means for holding said belts in the form of a trough for a portion of their lengths, grooved parts cooperating with said belts to form the filler-rod, paper holding, feeding and shaping mechanisms, means for applying paste to the paper, the folding or wrapping belts arranged in pairs, opposite belts of said pairs having partially-grooved faces, and cutting devices, substantially as specified.

2. In a cigarette-machine, the combination of tobacco-feeding mechanism, the top closing flanged carrier and former belts upon which the tobacco falls from the feeding mechanism, guides for holding said belts in the form of a trough for a portion of their length, and for subsequently maintaining them in vertical relations, grooved parts adjacent to said belts and which form therewith an approximately cylindrical closed channel or passage for the formation of the filler-rod, paper holding, shaping and feeding mechanism, means for applying paste to the paper, and suitable cutting devices, substantially as specified.

3. In a cigarette-machine, means for receiving the tobacco from the feeding mechanism and for assisting in the formation of the filler-rod, consisting of two top closing-belts each of which has at its inner upper edge portion a curved flange or lip, together with guiding and spreading devices which hold the lower

edges of said belts together and their upper portions spread from each other for a portion of their length, and parts adjacent to said belts which cooperate therewith to form an approximately circular channel in which the filler-rod is formed, substantially as specified.

4. In a cigarette-machine, the carrier and former belts having each a lip or flange at its upper inner edge portion, means for carrying and driving said belts, means for inclining outwardly the upper portion of said belts for a portion of their lengths whereby they form a trough for the receipt of the tobacco and for subsequently bringing them to and maintaining them in adjacent vertical planes and means between the lower portions of the belts and independent of the same for forming a bottom support for the tobacco, substantially as specified.

5. In a cigarette-machine, the combination with the top closing flanged belts 20, 21, their driving and main carrying pulleys, of the inclined guide-pulleys, 25, 25, the guide-pulleys 26 which run between the upper portions of said belts, the grooved under roller or guide, and the guide-rollers 28 for spreading the upper portions of said belts, and means arranged to cooperate with said belts to form and feed the filler-rod, all arranged to operate substantially as described.

6. In a cigarette-machine, the combination with the top closing flanged belts 20, 21, which for a portion of their length form a V-shaped trough and subsequently return to edgewise or vertical position and approach each other so that their flanges substantially meet and suitable guiding and spreading devices for causing said belts to assume the described positions, of the grooved plates between the lower edge portions of said belts, the grooved feed-wheels, and the transverse top rollers, substantially as specified.

7. In a cigarette-machine, a filler-forming conduit having its side walls formed by opposing separate longitudinal belts, each of which is formed at its upper inner edge portion with a continuous top closing lip or flange, means for inclining outwardly said belts for a portion of their lengths to form a trough for the receipt of tobacco, and means for effecting lateral pressure upon said belts in advance of their trough-forming portions, together with a bottom support for the tobacco in said conduit, substantially as specified.

8. In a cigarette-machine, the combination with mechanisms for shaping the filler-rod, and for feeding the paper, of the horizontal rollers 42 and 43, at which the filler-rod first enters the paper, said rollers being complementary to each other and adapted to shape the paper into approximately V form and at the same time to guide the filler-rod onto the paper, said roller 43 being also grooved, substantially as specified.

9. In a cigarette-machine, the combination with the rollers 42, 43, said rollers being com-

plementary to each other and adapted to shape the paper into approximately V form, one of said rollers being also grooved to guide the filler-rod of the edgewise-disposed face-belts 45 and 46, whose working portions are parallel with each other, one of which is partially grooved, to fold one edge portion of the paper, the paste-applying devices above the said belts, and the similar belts 56 and 57, one of which is partially grooved to fold the opposite edge of the paper, substantially as specified.

10. In a cigarette-machine, means for folding the paper around the shaped filler-rod, such means comprising edgewise-disposed face-belts arranged in pairs, one belt of each pair being partially grooved, the grooved belts being upon opposite sides, substantially as specified.

11. In a cigarette-machine, the combination with the face-belts 45 and 46, having parallel working portions, of the hollow, rotary paste wheel or cylinder, a rotating vertical presser-roll adjacent to said wheel or cylinder, the space between roll and the wheel or cylinder being over the space between said belts, said wheel or cylinder having means for regulating the delivery of paste therefrom, substantially as specified.

12. In a cigarette-machine, the herein-described means for folding and wrapping the paper around the filler-rod, said means consisting of endless traveling belts arranged in edgewise position, the working portions of each pair of belts being parallel with each other and forming a channel through which the filler-rod passes as it is being wrapped, one belt of each pair having a plain working face while the face of the opposing belt is partially grooved, the grooved belts of the pairs being upon opposite sides, substantially as specified.

13. In a cigarette-machine, the hollow paste wheel or cylinder, the separable bottom portion having a vertically-slotted flange extending into said cylinder and secured therein, the adjusting-sleeve threaded to the exterior of said cylinder, and the spring-pressed plunger working within said cylinder, substantially as specified.

14. In a cigarette-machine, cutting mechanism comprising a grooved rotatable disk having a series of radially-movable peripheral blocks, an arm arranged to move said blocks in one direction under the action of an intermittent cam, the cam-springs arranged to retract said blocks, and a cutter-carrying disk journaled to rotate at the same speed as the grooved disk and having a peripheral series of cutters which revolve with their carrying-disk in close relation to the periphery of the grooved disk, substantially as specified.

15. In a cigarette-machine, the cutting mechanism, comprising the revolving disk 59, its radially-movable blocks 65, their springs 66, the cam-disk 67, the vertically-movable arm 68, the cutter-carrying disk 73, the cut-

ters 76 carried thereby, and gear whereby the three disks 59, 67 and 73 are rotated at a uniform speed, all arranged to operate substantially as and for the purpose described.

5 16. In a cigarette-machine, a grooved disk upon which the cigarette-rod passes from the folding and wrapping devices, a series of peripherally-seated, radially-movable blocks carried by said disk, cutting devices jour-  
10 naled over said disk, and cam mechanism whereby said blocks are successively moved to carry the cigarette-rod to the cutting devices at regular intervals, substantially as specified.

15 17. In a cigarette-machine, the combination with tobacco-feeding mechanism, of the two flanged belts, guides which hold said belts in the form of a V-shaped trough for a portion of their length, other guides which subse-  
20 quently cause said belts to resume edgewise positions and to approach each other, a series of grooved edgewise-disposed plate and feed wheels which act with said belts to shape the filler-rod, the transverse top rollers, paper  
25 holding and feeding mechanism, the complementary rolls 42 and 43 which give the paper its first shape and guide the filler-rod therein, paste-applying devices, folding or wrapping belts, and cutting devices, substantially  
30 as specified.

18. In a cigarette-machine, the combination of a cutter-carrying disk, its driving-

shaft, a series of bearings secured to said disk, a shaft or journal carried by each of said bearings, a cutter-disk and a pulley carried by each of said shafts or journals, a  
35 loose pulley on said driving-shaft having as many belt-grooves therein as there are cutter-disks, a series of belts one of which connects each of the pulleys on the cutter-shaft  
40 with said loose pulley, a series of guide-bearings for said belts carried by said cutter-carrying disk, and means for driving said loose pulley at a higher rate of speed than that of the driving-shaft, substantially as specified.  
45

19. In a continuous-cigarette machine, the combination of a tobacco-feeding mechanism, a pair of flanged carrier and former belts which receive the tobacco from the feeding  
50 mechanism, parts adjacent to said belts and coöperating therewith to form an approximately cylindrical passage in which the filler-rod is formed and which assist in feeding said rod, paper holding, feeding, shaping and pasting mechanisms, and flanged folding-belts  
55 which receive the shaped filler-rod and fold the paper therearound, together with cutting mechanism, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. C. SATTERWHITE.

Witnesses:

GEORGE H. PARMELEE,  
GEO. M. ANDERSON.