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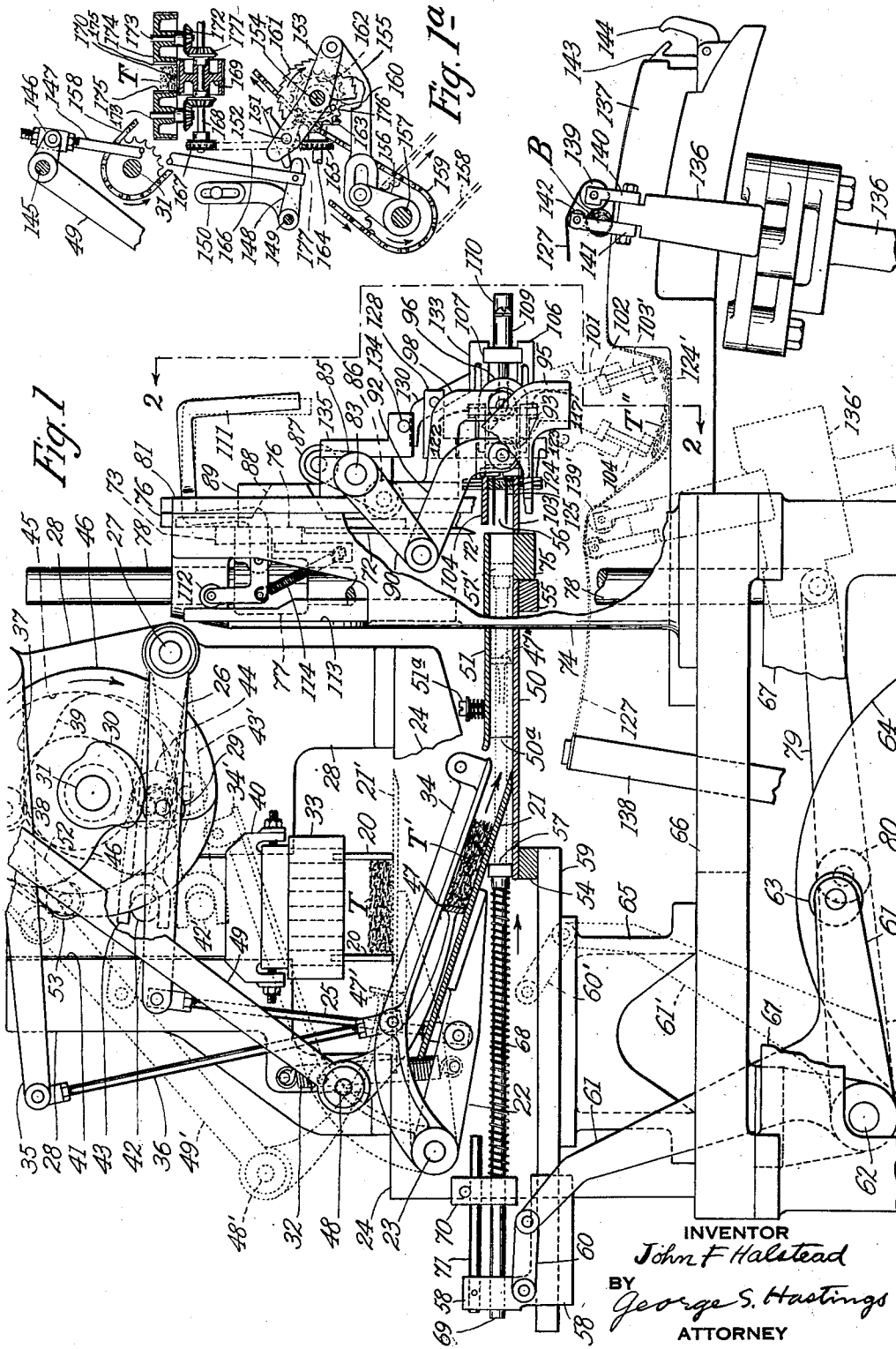
J. F. HALSTEAD

2,156,284

CIGAR MACHINE

Filed Feb. 18, 1936

3 Sheets-Sheet 1



May 2, 1939.

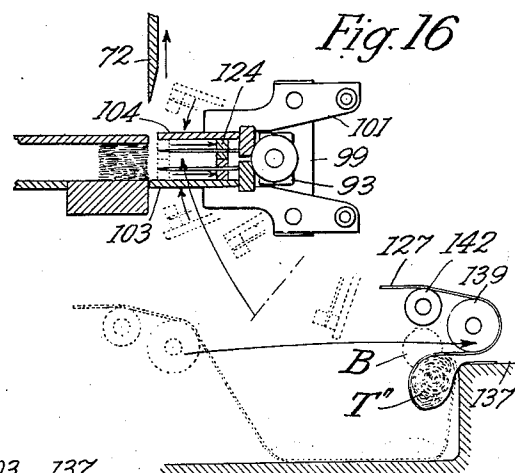
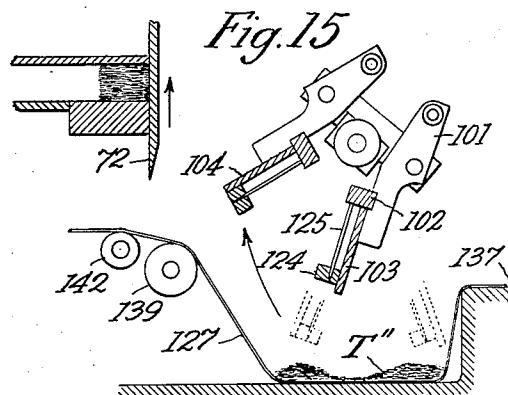
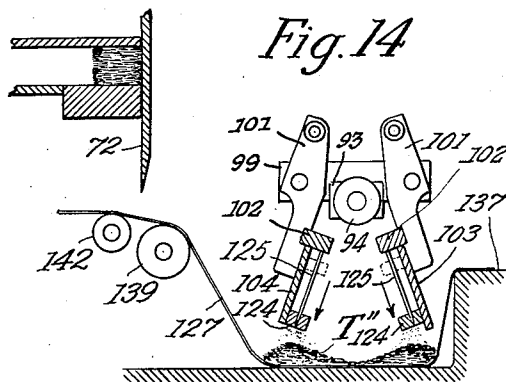
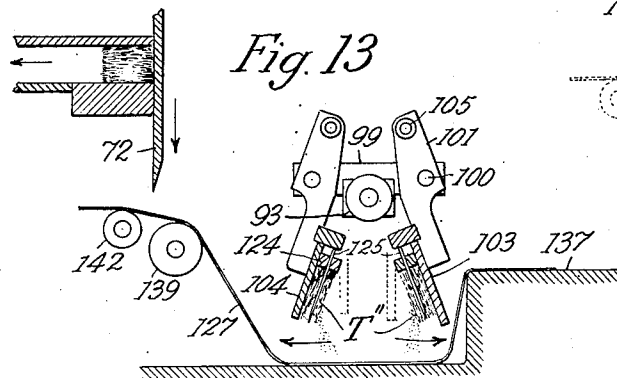
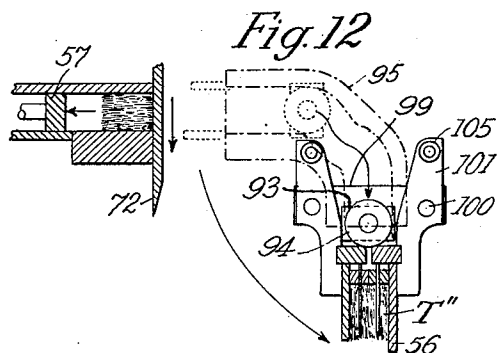
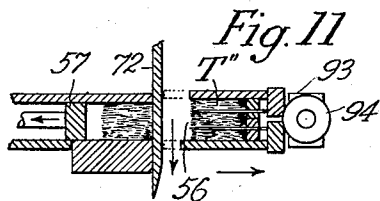
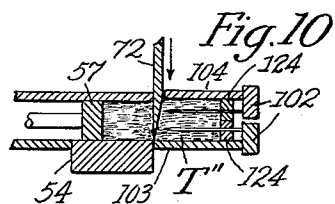
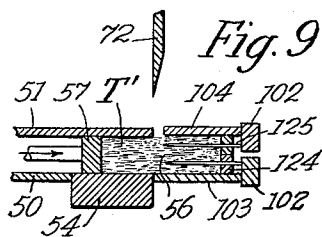
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3 Sheets-Sheet 3



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2,156,284

CIGAR MACHINE

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Application February 18, 1936, Serial No. 64,502

30 Claims. (Cl. 131—39)

This invention relates to cigar bunch machines. Its main object is to improve the quality of cigar bunches, particularly long filler bunches, although many of the features thereof are not limited in their application to long filler but are also applicable to scrap bunches. The invention is particularly concerned with the elimination of flat surfaces, hard portions, or ridges on bunches which render the completed product objectionable.

With this object in view, it is one purpose of the invention to loosen or spread the filler charge so that lumps or flat portions produced in cutting will be broken up and will readily take the cylindrical shape to which the rolling apron of the bunch machine normally rolls the charge.

Another object is to provide a simple and practical device for carrying out the above purposes. In this connection it is an object of the invention to incorporate charge loosening and spreading means in the charge transfer which operates on the bunch charge just prior to its delivery to the rolling apron, or other means for rolling the charge in a binder to form a bunch.

Another object of the invention is to provide for positively stripping the charge from the means which opens or spreads the charge, which means may also serve to eject the charge from the transfer.

Another object is to further insure against non-cylindrical bunches by supplying a dimension controlling element or roll cooperating with the rolling apron at a fixed distance above the rolling table to hold the bunch to the desired diameter and to roll out lumps in said charge. Thus, this latter element serves to mechanically force the bunch and its charge to proper shape and dimensions during rolling.

Another principal object of the invention is to provide an improved simplified filler feeding mechanism, particularly one adapted to economically and efficiently handle long filler. In this connection, it is the purpose of the invention to form long filler cut to length from a stream fed by the cross feed, into an accumulated column or mass and to subject said mass to a uniform degree of compression and to cut therefrom a uniform volume or length of column, to produce charges of substantially uniform volume, despite variations in the condition of the tobacco, etc.

It is also an important feature of the invention to provide a practical and simple means for delivering filler from a cross feed to such a column, particularly to deliver such tobacco with a high degree of directness into a casing in which the cross-section of the column is controlled. In

accordance with the invention, the cut length from the forward end of the cross feed is displaced out of line with the remainder of the tobacco in the cross feed in order that the cut ends, which may be of corrugated or V-form, may not interfere with each other.

Still another purpose of the invention is to provide simple and satisfactory control means for so controlling the operation of the cross feed that an excess of tobacco cannot accumulate and jam the machine at the entrance end of the column receiving casing. In connection with the invention a single pushing or transporting element is provided which displaces the severed length of tobacco from the cross feed, along a supporting surface, directly into the casing referred to. This element in entering the casing is made use of to detect the building of a surplus within the casing and to control the cross feed to stop the feed.

Another object of the invention is to provide a casing in which the long filler tobacco may be accumulated, having a yieldable wide side wall to avoid jamming of long filler lengths which may have been fed too high by the operator feeding the cross feed, thus eliminating one of the sources of difficulty in utilizing a volumetric measurer of this type for long filler.

With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings in which like characters of reference indicate the same or like parts:

Fig. 1 is a side elevation, partly in section, of a cigar machine embodying my invention;

Fig. 1a is an end elevation, partly in section, showing cross feed and control therefor;

Fig. 2 is an end elevation on line 2—2 of Fig. 1;

Fig. 3 is a detail side elevation on line 3—3 of Fig. 2, with the measuring chamber in charge-receiving position;

Fig. 4 is a side elevation similar to Fig. 3, with the measuring chamber in charge-delivering position;

Fig. 5 is an end elevation on line 5—5 of Fig. 4; parts being omitted, or broken away, to reveal underlying structure;

Fig. 6 is a side elevation on line 6—6 of Fig. 5;

Fig. 7 is a sectional side elevation on line 7—7 of Fig. 5, with the measuring chamber closed;

Fig. 8 is a sectional side elevation taken on the line 8—8 of Fig. 5, with the measuring chamber

open and charge strippers in ejection position; and

Figs. 9 to 16 are detail side elevations showing successive stages in the operation of the bunch-forming mechanisms.

Referring to Fig. 1 of the drawings, the filler tobacco T travels lengthwise on endless cross feed belts into a chamber formed by stationary side walls 20, the bottom of which chamber is constituted by a swingable platform or support 21 when said platform occupies its upper position, as at 21', this platform being mounted on an arm 22 pivoted on a shaft 23 supported by the frame 24 of the machine. The arm 22 is connected by a rod 25 with a lever 26 fulcrumed on a shaft 27 in frame member 28 and having a roller 29 held against a cam 30 on a shaft 31 by a spring 32.

While being cut by a cutter 33 having a corrugated or V-shaped cross-section, a clamp arm 34, pivoted on shaft 23 and actuated by a lever 35 connected to it by a rod 36, descends upon the length of tobacco T' forwardly projecting beyond the walls 20, holding it against the platform 21, which then swings downward. An arm 37 fast on the fulcrum shaft of lever 35 carries a roller 38 engaging with a cam 39 on shaft 31. The corrugated cutter 33 is adjustably carried by a holder 40 attached to a slide 41 in frame 28, the said slide having a trunnion 42 engaging with a lever 43 fulcrumed on shaft 27 and having a roller 44 in engagement with a track 45 in the rear surface of a cam 46.

In moving to its lower position the platform 21 displaces the corrugated ends of the cut length out of alignment with the cross feed stream to prevent interference between the cut surfaces when the cut length is displaced horizontally. When the platform 21 has arrived in its lower position shown in full lines, a rake or pusher element 47 resting on the same and swinging on a pivot 48 carried by an arm 49, pushes or sweeps the charge T' into a horizontal casing or chamber having four sides and open ends, the lower side being formed by a stationary plate 50 supported on frame members 54 and 55, while the upper side is formed by a plate 51 pressed yieldingly by a spring device 51a toward upright side pieces 50a, of which one is shown clearly in elevation in Fig. 1, the other being symmetrically disposed relatively to the vertical section plane of the view.

The arm 49 is actuated by a lever 52 fast on its fulcrum shaft and carrying a roller 53 engaging with the periphery of cam 46.

The above described mounting of the top plate 51 permits it to rise slightly if a lumpy formation occurs in the tobacco resulting from an error in feeding, so that the presence of such a lump will not hinder the lateral progress of the charge under the action of a spring 68, to be described. Upon delivery of the charge T'', the platform 21, clamp arm 34 and rake 47 return to their receiving positions 21', 34' and 47', respectively, shown in dotted lines.

The tobacco charge in the chamber formed by the top and bottom walls 50 and 51 and the side walls 50a is now pushed towards and into a combined measuring chamber and filler transfer chamber 56 by a yieldable spring-pressed plunger 57 loosely carried in a block 58 sliding on a bar 59, the block 58 being connected by a link 60 to a cam lever 61 fulcrumed on a shaft 62 and having a roller 63 engaging with a cam 64. The guide bar 59 is attached to a support block 65 resting on the bed-plate 66 carried by the base frame

67 of the machine. The spring 68 surrounding the plunger rod 69 is adjusted by a socket 70 slidable on a rod 71 fast in block 58, to the proper tension to produce the desired tobacco density or degree of compression in the chamber formed by walls 50—50a—51.

When the slide 58 has arrived at the end of its forward stroke, with the plunger in the dotted position 57', a cutter 72 carried by a slide 73 in a pedestal frame 74 mounted on bed-plate 66 descends on a ledger bar 75 mounted across the end of plate 50, thereby cutting the bunch charge T'' in chamber 56. The cutter 72 is attached to the rails 76 of slide 73, the latter being mounted on an arm 77 clamped to a vertical shaft 78 slidable in bearings of frame 74, shaft 78 being pivoted to a lever 79 fulcrumed on shaft 62 and having a roller 80 in engagement with a track in cam 64.

The rails 76, Figs. 2 to 4, are held against the sliding surfaces of frame 74 by guide plates 81 which carry blocks 82 supporting a shaft 83 on which are mounted lugs 84 and 85 carrying cam rollers 86 and 87 engaging with cam pieces 88 and 89 attached to slide 73. On its projecting ends, the shaft 83 carries crank levers 90 which are connected by pivots 91 with curved arms 92 swingably supporting between them a bar 93 having at its ends rollers 94 engaging with cam pieces 95 attached to the guide plates 81. To the bars 93 are affixed guides 96 engaging with rollers 97 carried by curved arms 98 fastened on plates 81. Thus, when the slide 73 is moved downward by cam lever 79, the cam rollers 86 and 87, by turning the shaft 83, swing the levers 90 and thereby force the arms 92 to swing the bar 93 from the position shown in Fig. 3 to that shown in Fig. 4.

To the bar 93, Figs. 5 to 8, are attached cross-bars 99, on pivots 100 of which swing brackets 101 carrying bars 102 and plates 103 and 104, the latter forming the measuring chamber and transfer 56 carrying the bunch charge T''. The brackets 101 have rollers 105 (Fig. 5) engaging with cam pieces 106 attached to a horizontal bar 107 having vertical sleeves 108 sliding on posts 109 fastened to bar 93. At its center, the bar 107 carries a hollow post 110 with which, on the downward move of slide 73, engages an S-shaped rod 111 (Fig. 3) pivoted on arm 77 and having a roller 112 held against a cam piece 113 on frame 74 by a spring 114 anchored on a bracket 115 attached to slide 73. The cam piece 113 keeps the rod 111 in its raised position shown in Fig. 3 until the measuring chamber 56 has been swung into its delivery position shown in Fig. 4, thus clearing the path of post 110 as it swings into upright position. When the rod 111 depresses the post 110, the cam pieces 106 compel the brackets 101 to turn on their pivots 100, thereby separating the plates 103, 104, thus opening the measuring chamber 56 (Fig. 8).

The bar 107 is provided with downwardly projecting pins 116 (Fig. 5) which, after a limited downward movement, contact with, and depress, a horizontal bar 117 sliding on the pins 109 and held in its upmost position, against nuts on screws 118 in bar 93, by a spring 119 attached to a pin 120 in post 110 (Fig. 7). The bar 117 is pushed downward until pins 121 projecting from its underside come into contact with the bar 93.

To the extended ends of the bar 117 are attached frames 122 (Fig. 8) carrying grooved guides 123 in which are slidably supported the ends of a pair of bars 124 each sliding on a row

of needles 125 carried by bars 102 (Fig. 5). The bars 124, being in sliding engagement with the plates 103 and 104, and, in the closed position of chamber 56, engaging with one another by means of pins 126 carried by one of them and fitting into holes of the other, form the rear wall of chamber 56 when the latter is in the receiving position shown in Fig. 3, and act as strippers for the needles 125 when the frames 122 are depressed into their low position shown in Fig. 8. The needles 125 penetrate the bunch charge T' and hold it in chamber 56 while the latter transfers the same into discharge position. Then the plates 103 and 104 of the measuring chamber 56 spread apart and the needles 125 break up lumps and flat surfaces of the charge. In this condition the charge is deposited on the rolling apron 127 after the chamber has been opened by the action of brackets 101 (Fig. 14). The function of the pins 126 is to keep the strippers 124 in line while measuring chamber 56 is closed, thereby relieving the needles 125 from guiding the strippers and taking the resulting strain off them during that time.

A bracket 128 attached to bar 93 (Fig. 5) carries a pin 129 (Fig. 6) on which is pivoted a lever 130 held by a spring 131 pushably against a pin 132 in a bracket 133 attached to bar 107 (Fig. 7). The lever 130, in the receiving position of chamber 56, Fig. 3, engages with a rod 134 carried by brackets 135 attached to the blocks 82 on guides 81, positively holding the chamber closed while the same is being charged by the plunger 57.

Upon delivery of the charge T' and return of the transfer chamber, the rolling arm 136, Fig. 1, moves forward towards the rolling table 137 while a cam-operated arm 138, to which one end of the rolling apron 127 is affixed, moves backward, thereby tightening the apron 127 around the charge T', which then is rolled on table 137 into a bunch B by the rolling pin 139 attached to arm 136 by brackets 140, a binder having been deposited on the rolling table after the charge T' has been transferred.

A second set of brackets 141 on arm 136 carries a fixed roller 142 which confines the bunch B to a given dimension between said roller and the rolling table. This tends to hold the same to true circular shape and to roll out corners or lumps since such protuberances find no room in which to project. At the end of table 137, a guide piece 143 delivers the finished bunch into a spring-clamp 144 from which it is removed by the operator.

In Figs. 9 to 16, the various stages in the operation of the bunch-forming mechanism are shown. After the plunger 57 has applied a degree of pressure adequate to compress the charge T' in the chamber 56 formed by plates 103 and 104 and strippers 124, Fig. 9, the downward motion of shaft 78 and slide 73 (Fig. 1) causes the cutter 72 to descend, Fig. 10, severing a bunch charge T''. Thereupon the chamber 56 starts its transfer movement, Fig. 11, while the plunger 57 begins to recede, and the cutter 72 continues to descend (Fig. 1). As the plunger 57 continues to recede and the cutter 72 to descend, the rollers 94 of bar 93 guide the chamber 56 into its discharge position, Fig. 12, and the rollers 105 of brackets 101, influenced by the members 106, then open the side plates 103 and 104 of chamber 56, Fig. 13, the charge T'' being held in the chamber halves by the needles 125 and the charge thus disrupted from within and spread. When the strippers 124 then move downward by the further descent of slide 73,

the charge T'' is spread open upon the rolling apron 127, Fig. 14, whereupon the slide 73 begins to move upward. Upon having reached a half-way position shown in Fig. 15, the strippers 124 begin to return to their starting position and the plates 103 and 104 begin to close, until in the upmost position of the slide 73, the chamber 56 is again closed and in receiving position shown in Fig. 16, the cutter 72 then having ascended to its starting position as in Fig. 9.

As soon as the transfer chamber has cleared the path of the rolling pin 139, (Fig. 1), the latter with the compression roller 142 advances toward the rolling table 137, thereby wrapping the apron 127 around the charge T' and subsequently, when passing over table 137, rolling the latter into a bunch B as shown in Fig. 1, the action of the roller 142, as explained above, holding the charge to a more uniform diameter and circular shape. While the next charge is being delivered and cut, the rolling pin 139 returns to its starting position shown in Fig. 13 and the apron-tightening arm 138 (Fig. 1) moves to the end of its forward stroke, so that a pocket for receiving the next charge T' is formed in the rolling apron 127 before the chamber 56 executes its transfer motion shown in Fig. 12.

The lengthwise feed of tobacco T' in the chamber comprising side walls 20 is controlled by the quantity of filler present in the chamber formed by the walls 50-50a-51 at each cycle of the machine. Referring to Fig. 1a, on the fulcrum shaft 145 of the rake arm 49 is mounted an arm 146 to which is pivoted a rod 147 connected with a lever 148 swinging on a stud 149 in a bracket 150. The free end of lever 148 engages with a pawl 151 swinging on a pivot 152 in an arm 153 fulcrumed on a shaft 154, the arm 153 being swung back and forth by a lever 155 attached to a crank arm 156 carried by a shaft 157 driven by a chain 158. The shaft 157 through a chain 159 running over an idler 160 loose on shaft 154, drives the cam shaft 31 (Fig. 1). On shaft 154 is fast a ratchet 161 and a bevel gear 162 meshing with a bevel gear 163 on a shaft 164 carrying a sprocket 165. The sprocket 165 by a chain 166 drives a sprocket 167 on a shaft 168 on which is mounted the pulley 169 driving the horizontal feed belt 170, and which also carries bevel gears 171 meshing with bevel gears 172 on the shafts 173 carrying the drive pulleys 174 of the vertical feed belts 175.

When the tobacco charge in chamber formed by walls 50-50a-51 permits the rake 47 to advance (Fig. 1) to a position 47'' within a limited distance from the delivery end of the chamber, the arm 49 turns the arms 146 to an extent sufficient to cause the lever 148 to depress the pawl 151 into engagement with the ratchet 161, thereby, through the rocking of arm 153, turning the shaft 154 in the direction of the arrow. The bevel gear 163 then transmits the motion to shaft 164 and the chain 166 causes the shaft 168 to drive the pulleys 169 and 174, thus compelling the belts 170 and 175 to move additional tobacco T into the channel defined by the side walls 20. However, when there is sufficient tobacco in the chamber formed by walls 50-50a-51 to cause the rake 47 to stop before reaching the aforementioned limiting distance, the pawl 151 is not lifted into engagement with ratchet 161, and no tobacco is fed in that cycle of the machine. Once in every revolution of idler 160, a pin 176 carried by the same engages an inwardly pointing finger 177 attached to pawl 151, thereby resetting the same

into neutral position, out of engagement with ratchet 161.

The connections between the pusher or rake 47 and the cross feed belts for controlling the same are such that the magazine is never permitted to accumulate more than enough tobacco for two charges. Indeed it is set to hold the contents of the magazine below this amount. The reason for this is that the more tobacco accumulating in the magazine, the less sensitive becomes the effect of the plunger in producing a uniform density, since the squeezing of the tobacco against the magazine walls tends to prevent the uniform pressure of the plunger from being communicated to the part adjacent the measuring chamber. In this connection, it should be noted that the springs holding the wall 51 toward the side walls 50a, are quite stiff, and as there are usually four of the spring devices 51a—one in each corner of the wall—, normal variations in the height of the charges produce no yielding of the wall 51, and such yielding only occurs upon occurrence in the charge of an abnormal height, such as would ordinarily produce a jam, holding back the plunger 57.

When the charge and binder are pulled tight in the apron, the rolled charge is confined between the roller 139 in front, the apron 127 pulled tight at the rear, the solid table 137 below and the roller 142 secured at a fixed distance above the table. Hence, a corner or lump cannot simply force the upper side of the loop out but has to yield to the dimensions imposed by said roll.

The needles, since they may extend the full depth of the transfer chamber, open the charge even though the charge may as often happens have a vertical plane of cleavage in the end portion of the chamber.

In the operation of the cross feed, the supporting platform 21 is swung down, as shown in Fig. 1, from a position in alignment with the bottom belt of the cross feed to a position with its delivery edge between the open end of the casing formed by walls 50—50a—51 and the working face of the plunger 57. Thus the support 21 first disengages the interlocked end of cut length, from the cross feed filler stream, and then forms a chute guiding the cut lengths directly into the compression chamber or casing.

The clamping arm 34 in its lower position, (Fig. 1), provides a guide surface which merges into the open receiving end of the casing and facilitates insertion of the lengths without bulging out or overflowing as said lengths are pushed into the chamber by the pusher or rake 47. The same pusher or rake element which slides the cut length of filler along platform 21 also moves into said chamber to fully insert the cut length therein. Thus the plunger 57, which has no means to confine the cut length as to height, is required only to press home and uniformly compress the accumulated charges in the casing and measuring chamber. It is noted that with the present arrangement there are no cracks or joints over which the cut length is pushed, on which the tobacco may catch or through which small tobacco pieces may fall, the platform 21 simply overlying and delivering onto a continuous part of plate 50.

In compressing the cut lengths in a chamber closed on top and bottom sides the effect of the plunger is to squeeze out the tobacco to the same cross section as that of the chamber, and thus to minimize any variations in the height of the tobacco stream as fed by the operator at the cross feed, and to produce charges of uniform volume. Also there is a saving due to preventing

hitherto troublesome loss of scrap from the ends of the cut lengths. Such losses are also reduced by the direct delivery along one surface from cutting position into a position within the four walls of the compression chamber.

In connection with the foregoing, it should be understood that in measuring the long filler tobacco by volume it is important for uniformity that the layers of leaves of one length, as laid in the cross feed, have the same relative position with respect to that of other lengths in the magazine casing, and that the position of such layers be not lost in handling. Also it is important that the tobacco be handled without jostling or tumbling, both for the above reason and because this increases the loss of scrap from the bunches especially at the fragile serrated ends of the bunch. Hence the value of applicant's arrangement for simple and direct sliding along a single platform surface into a position between the compressing plunger and the measuring chamber, with minimum movement of the cut length before it is confined in the compression chamber.

The magazine formed by the walls 50—50a—51 provides an accumulating chamber somewhat wider than the length of the bunch by reason of the preferred spacing apart of the narrow side walls 50a at each longer side of the chamber space, and these side walls are ordinarily set sufficiently far apart so that the indented or serrated ends of the bunches are spaced from said side walls, since if there were engagement, it would have a tendency to break off the points of the serrated ends. Having the side walls somewhat spaced from the ends of the mass in the chamber eliminates adjustment for different lengths. The pusher 47 and the plunger 57 may be of a width substantially equal to the distance between walls 50a.

In connection with the foregoing, it should be understood that the apparatus and method referred to may be widely varied within the scope of the claims, for the specific structure and method selected to illustrate the claims is but one of many possible embodiments of the same. The invention, therefore, is not to be restricted to the details illustrated and described, nor to the embodiments chosen as illustrative of the invention.

What is claimed is:

1. The combination with a bunch rolling apron, of a charge separator, mechanism for delivering charges from said separator onto said apron, and means acting on the separated charge, prior to rolling thereof in the apron, arranged to loosen the tobacco in said charge.

2. The combination with a bunch rolling apron, of a charge separator, mechanism for delivering charges from said separator onto said apron, and means acting on said charge, prior to rolling thereof in the apron, arranged to change the arrangement of the tobacco in said charge, said means including charge penetrating elements and devices for separating said elements to loosen the charge.

3. The combination with a bunch rolling apron, of a charge separator, mechanism for delivering charges from said separator onto said apron, and means acting on the separated charge, prior to rolling thereof in the apron, arranged to change the arrangement of the tobacco in said charge, said mechanism including a filler transfer for depositing separated charges on said apron and said means including parts acting to spread the charge in said transfer.

4. The combination with a bunch rolling apron, of a charge separator, mechanism for delivering charges from said separator onto said apron, and means acting on said charge, prior to rolling thereof in the apron, arranged to change the arrangement of the tobacco in said charge, said means including needles arranged to enter the charge and devices manipulating said needles to disturb the arrangement of tobacco in said charge.

5. The method of making cigar bunches from a compressed mass of tobacco which consists in separating a charge of tobacco from the mass, applying a disruptive force from its interior outwardly of said charge to separate or spread parts of the charge, and rolling the separated or spread charge in a binder.

6. The method of making cigar bunches from a compressed mass of tobacco which comprises separating a charge of tobacco from the mass, penetrating the mass by separate instruments, and separating said instruments while penetrating the charge to spread the charge.

7. The method of making cigar bunches from a tobacco mass which comprises separating a charge of tobacco from the mass, penetrating the mass by separate instruments along a line parallel to the axis of the bunch, and separating said instruments to spread the charge.

8. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge.

9. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, mechanism for giving said elements movement relative to one another to manipulate the charge, and stripper means for stripping the filler from said elements.

10. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge, said elements comprising needles.

11. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge, said stripping means consisting of plates movable along said elements to discharge the filler therefrom.

12. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge, said transfer having opposite side walls between which the charge is received and means for separating said walls to discharge the filler.

13. In a cigar machine, the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge, said transfer having opposite side walls

between which the charge is received and means for separating said walls to discharge the filler, one or more of said elements being connected to each side wall for movement therewith to spread the filler apart.

14. In a cigar machine the combination with a filler transfer for delivering a filler charge to a bunch roller, of filler penetrating elements arranged to penetrate the charge in said transfer, and mechanism for giving said elements movement relative to one another to manipulate the charge, said transfer having opposite side walls between which the charge is received and means for separating said walls to discharge the filler, one or more of said elements being connected to each side wall for movement therewith to spread the filler apart, and stripping means arranged to strip the filler from said elements.

15. In a cigar bunch machine, the combination with an open end magazine having a receiving and a discharge end, of charge measuring and separating means for separating a predetermined volume of tobacco at the discharge end of said magazine, a cross feed for forwarding a stream of long filler tobacco, a movable support positioned to receive a length of the forward end of said stream approximately equal to the length of the bunch, a cutter for severing said length from the remainder of the stream, means moving said support out of alignment with the cross feed into position to deliver into the open receiving end of said magazine, a pusher having to and fro movement along said support and into said magazine to deliver said length into the magazine, and a yieldable plunger movable into said magazine and acting to compress the supply in said magazine with uniform pressure during the charge severing operation.

16. In a cigar bunch machine, the combination with a magazine chamber having open receiving and discharge ends, of charge measuring and separating means for separating a predetermined volume of tobacco at the discharge end of said chamber, a cross feed for forwarding a stream of long-filler tobacco, a tiltable support positioned to receive a length of the forward end of said stream approximately equal to the length of the bunch, a vertically movable cutter of a cross-section to cut indented ends for severing said length from the remainder of the stream, means tilting said support to move said length vertically out of alignment with the cross feed into position to deliver into the open receiving end of said chamber, and a yieldable plunger movable into said chamber to compress the tobacco therein during charge measuring and separating.

17. In a cigar bunch machine, the combination with a magazine chamber of elongated cross section having open receiving and discharge ends, of charge measuring and separating means for separating a predetermined length from a column of tobacco formed by said chamber to provide an elongated charge of substantially uniform volume, a cross feed for forwarding a stream of tobacco substantially parallel to the long dimension of said charges, a cutter for cutting a length from the forward end of said stream substantially equal to the width of said chamber, a pivoted support for supporting said length during cutting, means for swinging one end of said support to a position delivering into said chamber, and a movable pusher element acting to sweep said charge along said support and within said chamber.

18. In a cigar bunch machine, the combination with means for forwarding a narrow stream of tobacco, a cutter for cutting a bunch length from the forward end of said stream, an open end chamber, a platform arranged to form a chute for receiving said cut length and guiding the same within said chamber, a plunger, means yieldingly urging said plunger past said chute and into said chamber to compress a supply therein under a substantially uniform pressure, an adjustable stop wall against which the tobacco of said chamber is compressed, and a knife spaced a predetermined distance from said stop wall to cut bunch charges having substantially uniform volume.

19. In a cigar bunch machine, the combination with means for forwarding a narrow stream of tobacco, a cutter for cutting a bunch length from the forward end of said stream, a magazine chamber, a platform arranged to form an inclined chute for receiving said cut length and guiding the same within said chamber, a plunger, means yieldingly urging said plunger past said chute and into said chamber to compress a supply therein under a substantially uniform pressure, a stop wall against which the tobacco of said chamber is compressed, a knife spaced a predetermined distance from said stop wall to cut predetermined bunches having substantially uniform volume, and a member movable over said chute to deliver the length cut thereon within said chamber.

20. In a cigar bunch machine, the combination with a flat chamber, of a cross section of substantially greater width than thickness having opposite open receiving and discharge ends, severing mechanism arranged to sever a uniform length from a column of tobacco formed by said chamber to provide elongated charges of substantially uniform volume, a filler feed for feeding a stream of long filler tobacco substantially parallel to the long dimension of said charges, means for cutting a bunch length from the forward end of said stream, a supporting surface forming one side wall of said chamber at the receiving end thereof, a platform arranged to support said length during cutting, having a portion movable to a position adjoining and overlapping said surface, means for forwarding the separated length on said surface and into said chamber, and yielding means for compressing the mass in the chamber during severing of the charges.

21. In a cigar bunch machine, the combination with a flat chamber having opposite open receiving and discharge ends, of means for feeding increments of tobacco into the receiving end, mechanism operating to block the discharge end of said chamber, a plunger, means moving said plunger against said mass with a substantially uniform pressure, and a yieldable support for one of the side walls of said chamber arranged to permit the wall to yield outwardly when an increment of greater thickness than the distance between said wall and the opposite wall is fed into said chamber.

22. In a cigar bunch machine, the combination with a chamber having opposite rigid walls and open receiving and discharge ends, of means for feeding increments of tobacco into the receiving end of said chamber, and charge separating means for separating bunch charges from the column of tobacco formed by said chamber, one rigid wall of said chamber being mounted to yield relative to the other.

23. In a cigar bunch machine, the combination with a chamber having opposite walls and open

receiving and discharge ends, of means for feeding increments of tobacco into the receiving end of said chamber, charge separating means for separating bunch charges from the column of tobacco formed by said chamber, one wall of said chamber being mounted to yield relative to the other, said increment feeding means comprising a cross feed channel along which a stream of long filler tobacco is fed, a cutter for cutting a bunch length from the forward end of said stream, and mechanism for delivering the cut length from said stream edgewise into said chamber, said chamber operating to yield to projections on said length resulting from irregularities in placing the long filler in said channel.

24. In a cigar bunch machine, the combination with a feed for forwarding a narrow stream of tobacco, a cutter for severing bunch lengths from said stream, a horizontal magazine having open receiving and discharge ends, a plunger movable into said magazine to compress tobacco therein, and a platform tiltable from a position supporting the bunch length at cutting position to a position with one end of said platform in a position intercepting a line between the plunger and the open end of the chamber, a device acting to push said length along said platform into said intercepting position to bring the length within the range of action of the plunger, yieldable means moving said plunger past said platform into said magazine to compress the tobacco therein, and means for cutting a bunch charge from said tobacco while compressed by said plunger.

25. In a cigar bunch machine, the combination with a measuring chamber having a predetermined volume, an open end magazine chamber aligned with said measuring chamber, a plunger, plunger operating means moving said plunger into said magazine chamber to compress the mass of tobacco in said measuring chamber, a charge separator for separating tobacco in the measuring chamber from that in the magazine chamber, inclined chute means for delivering increments of tobacco into a position between the plunger and the tobacco already in the magazine chamber, and cross feed mechanism for forwarding lengths of long filler tobacco onto and along said inclined chute means.

26. In a cigar bunch machine, the combination with an open end magazine having a receiving and a discharge end, of charge measuring and separating means for separating a predetermined volume of tobacco at the discharge end of said magazine, a cross feed for forwarding a stream of long-filler tobacco, a movable support positioned to receive a length of the forward end of said stream approximately equal to the length of the bunch, a separator for separating said length from the remainder of the stream, means moving said support out of alignment with the cross feed into position to deliver into the open receiving end of said magazine, a pusher having to and fro movement along said support and into said magazine to deliver said length into the magazine, and means connected to said cross feed and actuated by said pusher when held back by an excess of tobacco in the magazine for controlling the operation of the cross feed.

27. In a cigar bunch machine, the combination with an open end magazine having a receiving and a discharge end, of charge measuring and separating means for separating a predetermined volume of tobacco at the discharge end of said magazine, a cross feed for forwarding a stream of long-filler tobacco, a movable support positioned

to receive a length of the forward end of said stream approximately equal to the length of the bunch, a separator for separating said length from the remainder of the stream, means moving
 5 said support out of alignment with the cross feed into position to deliver into the open receiving end of said magazine, a pusher having to and fro movement along said support and into said maga-
 10 zine to deliver said length into the magazine, and means connected to said cross feed and actuated by said pusher when held back by an excess of tobacco in the magazine for controlling the oper-
 15 ation of the cross feed, said control means including mechanism for stopping the cross feed during one cycle of operation of the machine.

28. In a cigar bunch machine, the combination with an open end magazine having a receiving and a discharge end, of charge measuring and separating means for separating a predetermined
 20 volume of tobacco at the discharge end of said magazine, a cross feed for forwarding a stream of long-filler tobacco, a cutter for severing a bunch length from said stream, means acting to deliver said length into the open receiving end
 25 of said magazine, a yieldable plunger movable into said magazine and acting to compress the supply in said magazine with uniform pressure during the charge severing operation, and means responsive to an excess of tobacco in said maga-
 30 zine for controlling the operation of said feed.

29. In a cigar machine, the combination with an open end magazine having a receiving and a

discharge end, of charge measuring and separat-
 ing means for separating a predetermined volume
 of tobacco at the discharge end of said magazine,
 a cross feed for forwarding a stream of long-
 5 filler tobacco, a cutter for severing a bunch length from said stream, means acting to deliver said
 length into the open receiving end of said maga-
 zine, a yieldable plunger movable into said maga-
 zine and acting to compress the supply in said
 10 magazine with uniform pressure during the charge severing operation, and means responsive to an excess of tobacco in said magazine for con-
 trolling the operation of said feed, said means
 including mechanism for stopping said feed.

30. In a cigar bunch machine, the combination
 15 with an open end magazine having a receiving and a discharge end, of charge measuring and separating means for separating a predetermined volume of tobacco at the discharge end of said
 20 magazine, a cross feed for forwarding a stream of long-filler tobacco, a cutter for severing a bunch length from said stream, means acting to deliver said length into the open receiving end of said
 magazine, and means responsive to an excess of
 25 tobacco in said magazine for controlling the operation of said feed, said means including mecha-
 nism for stopping said feed and said means in-
 cluding connections controlling said feed to
 maintain the supply of tobacco in said magazine
 30 at less than that needed for two bunches.

JOHN F. HALSTEAD.