Jan. 16, 1923.

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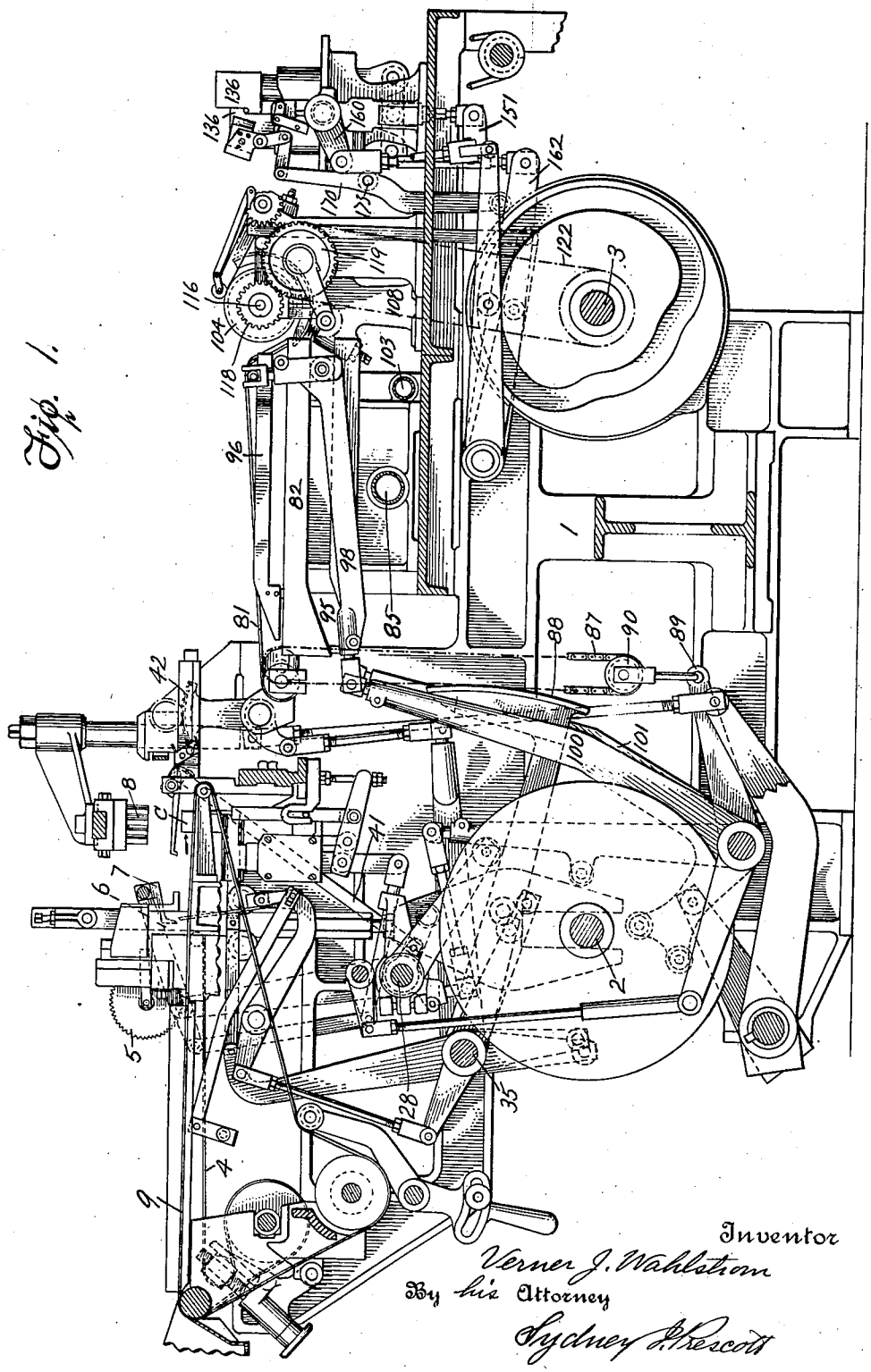
V. J. WAHLSTROM.

CIGAR BUNCH MACHINE.

FILED SEPT. 27, 1919.

15 SHEETS—SHEET 1.

Fig. 1.



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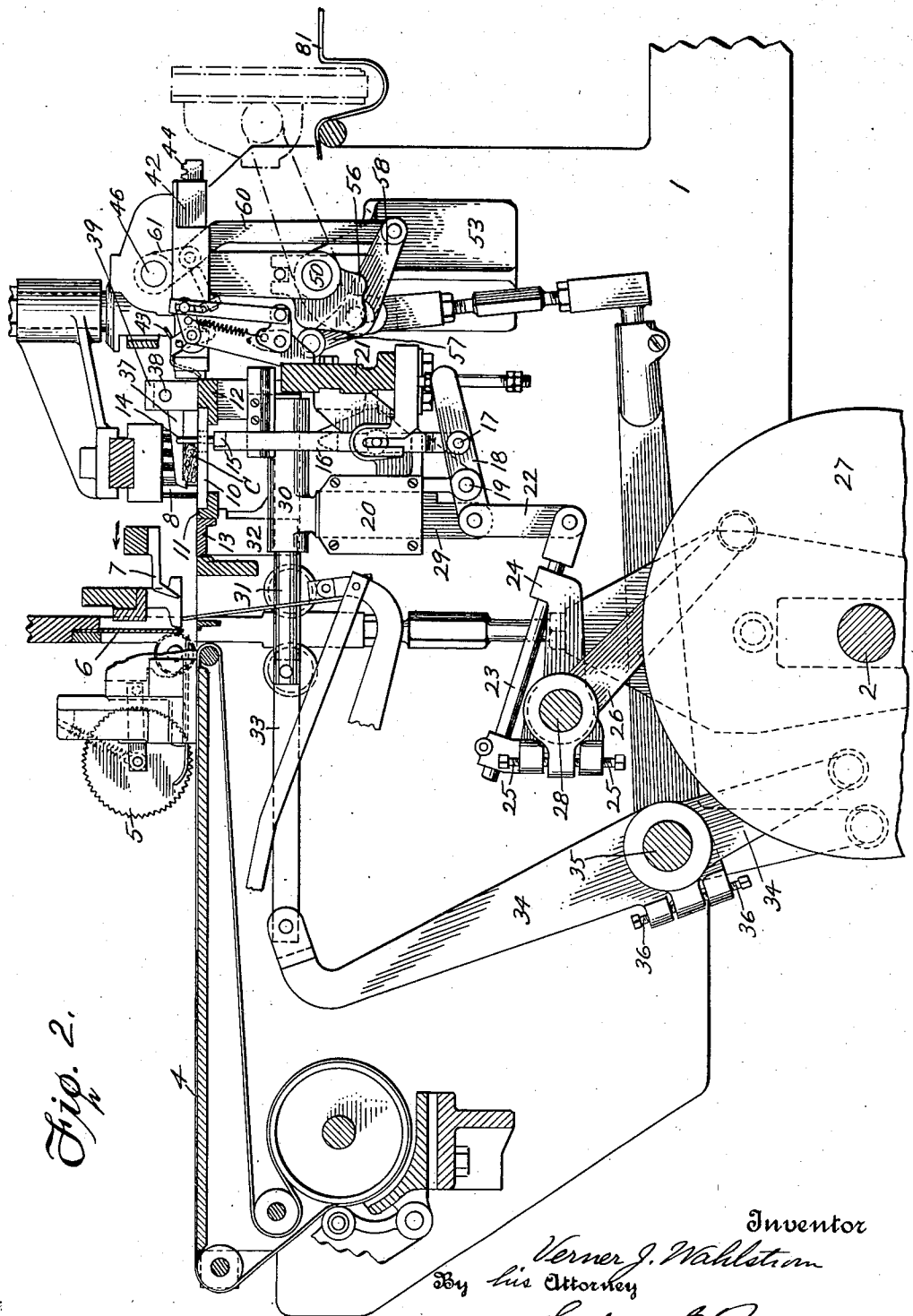


Fig. 2.

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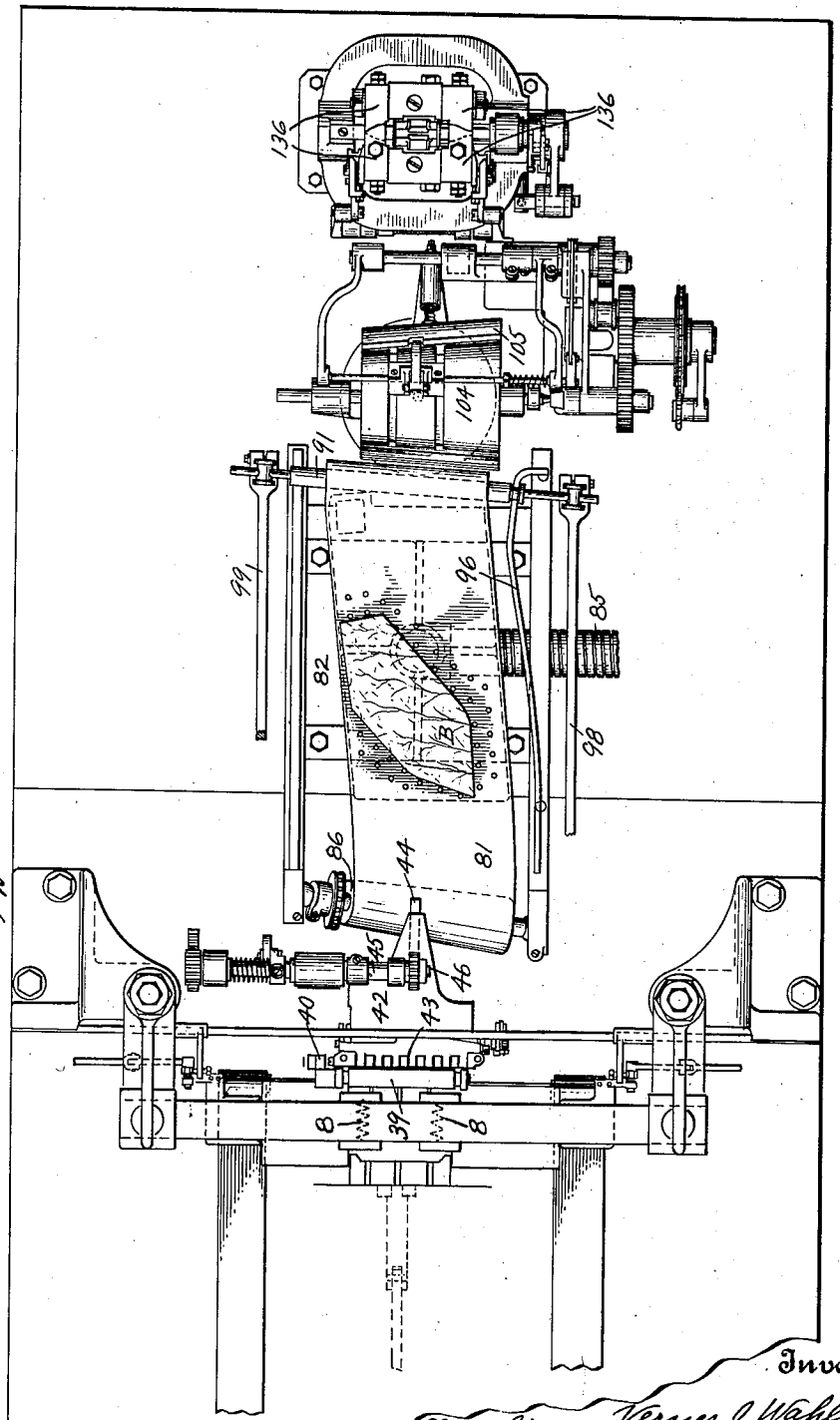


Fig. 3.

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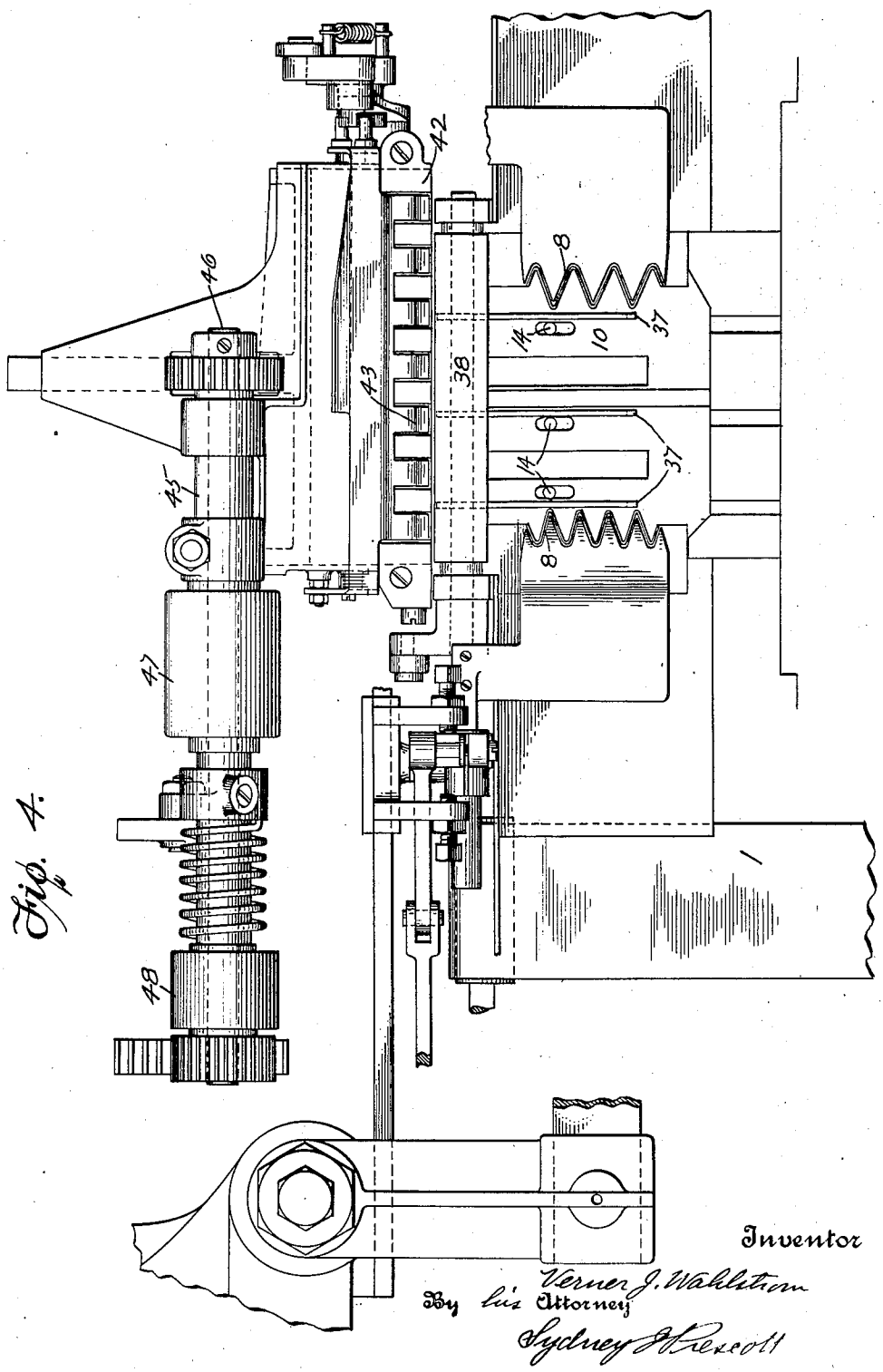


Fig. 4.

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Fig. 6.

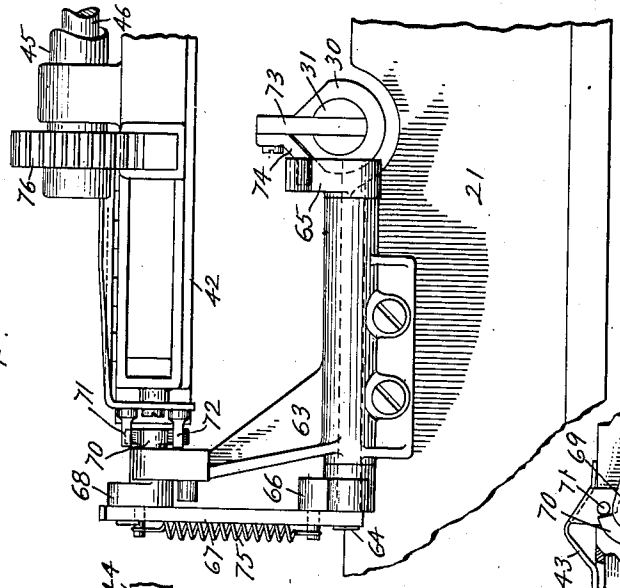


Fig. 7.

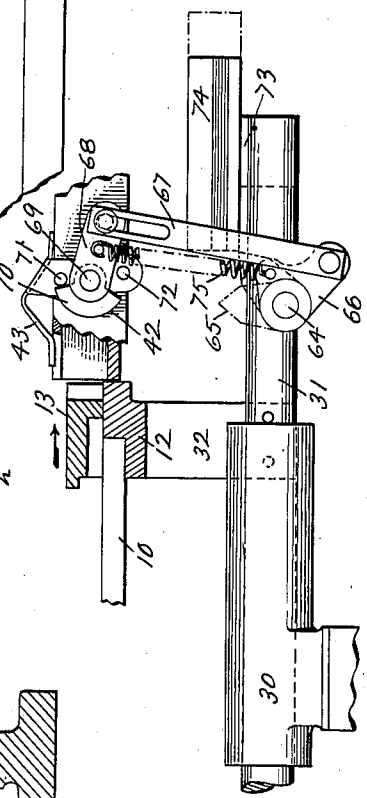


Fig. 5.

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FILED SEPT. 27, 1919. 15 SHEETS—SHEET 6.

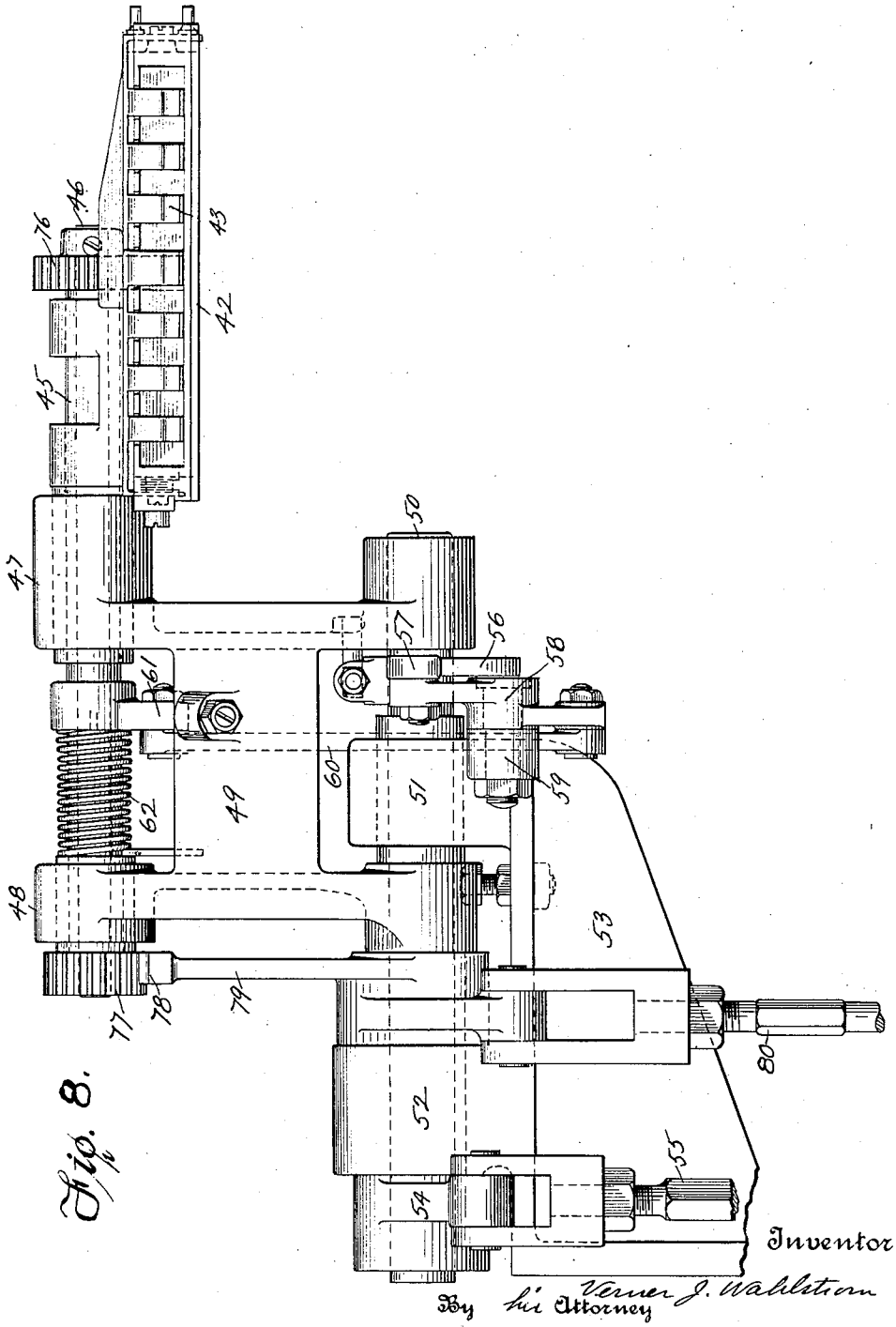


Fig. 8.

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FILED SEPT. 27, 1919. 15 SHEETS—SHEET 7.

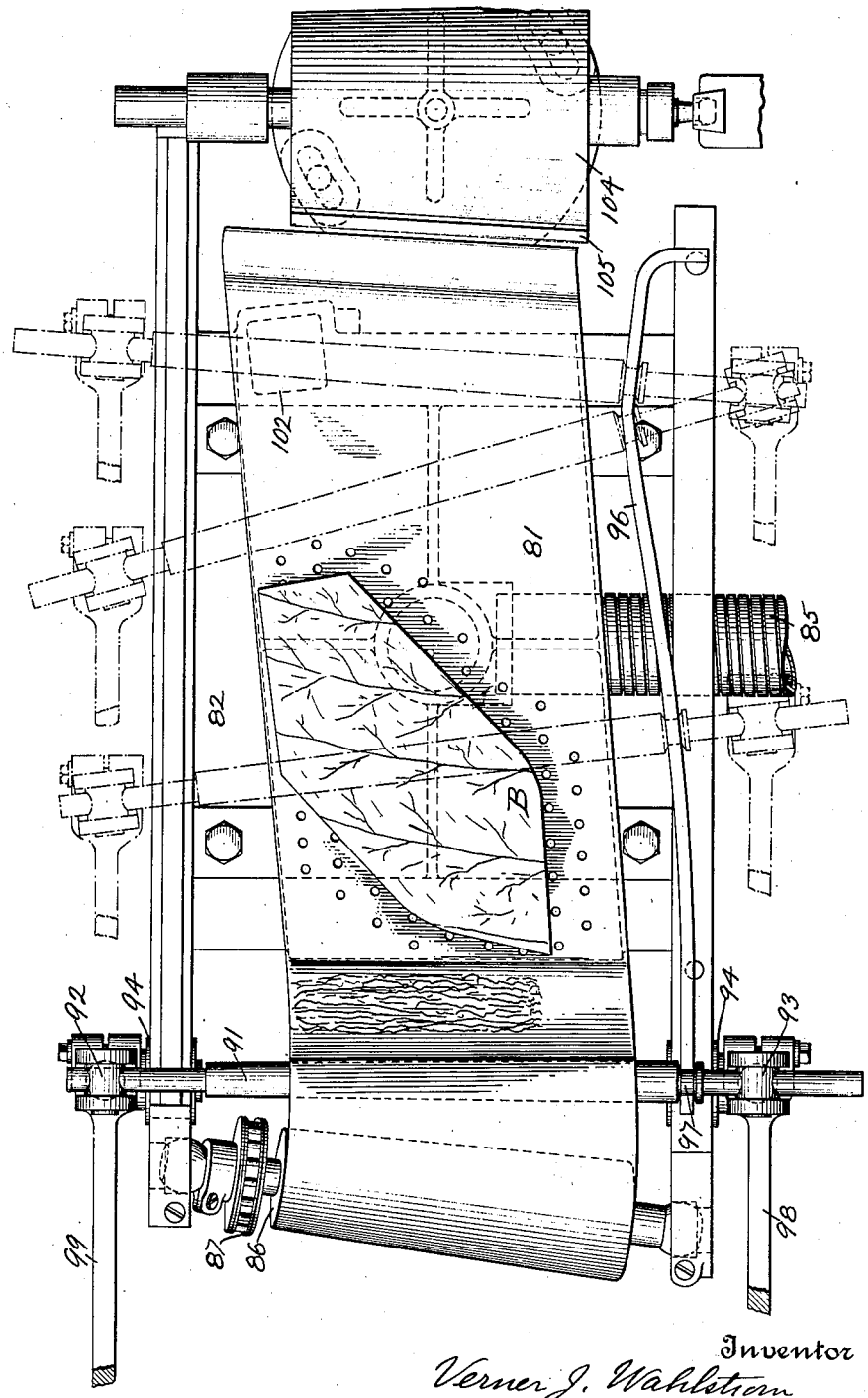


Fig. 9.

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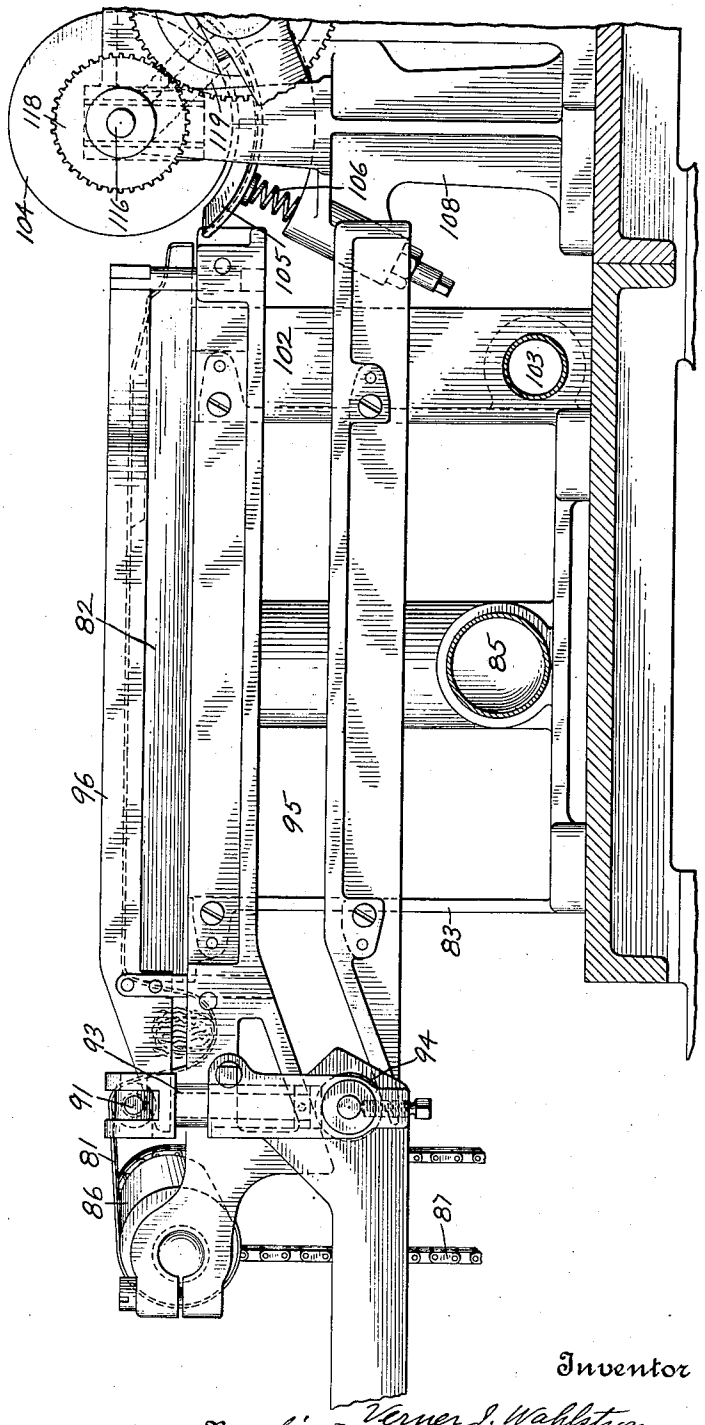


Fig. 10.

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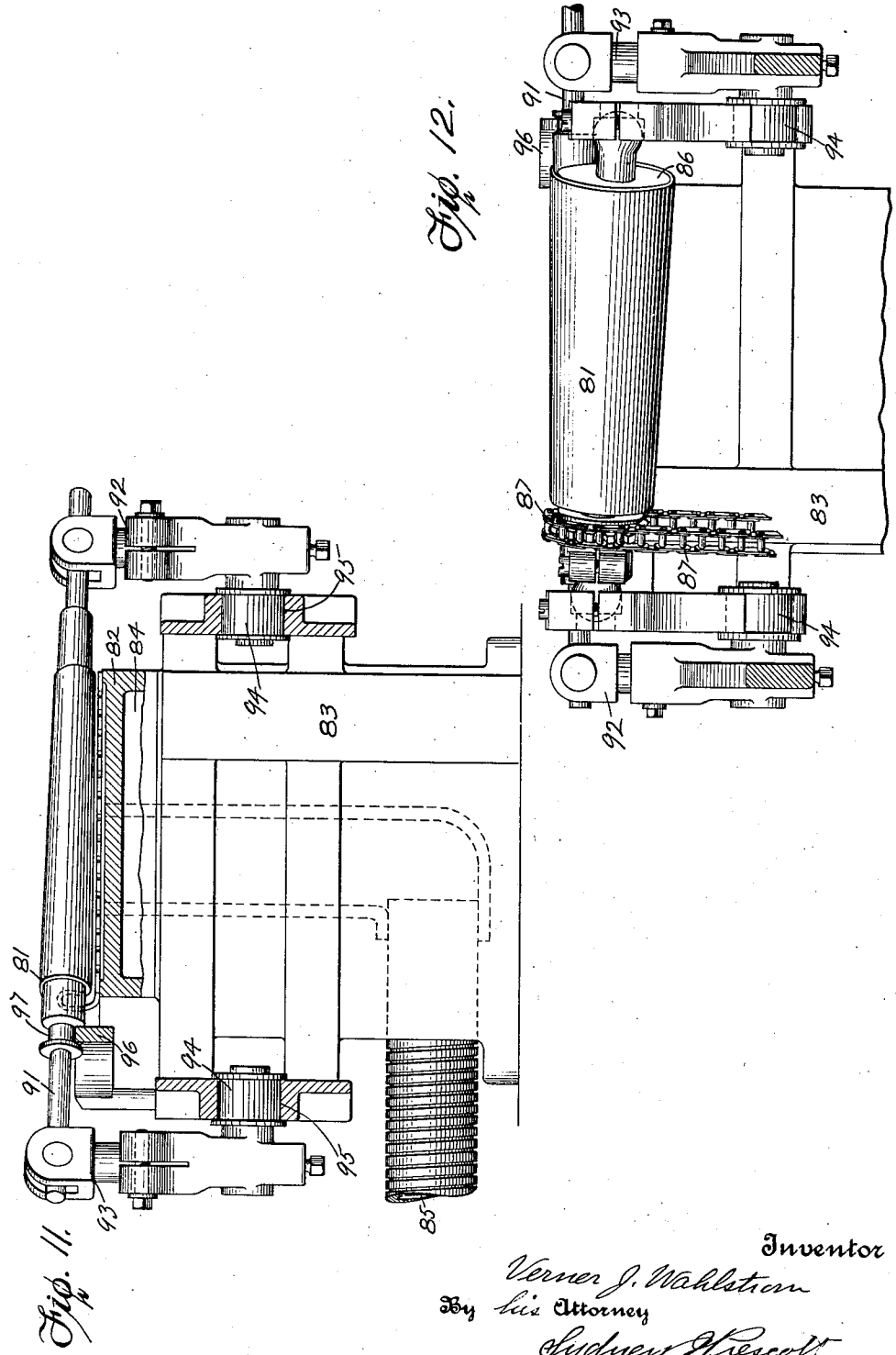
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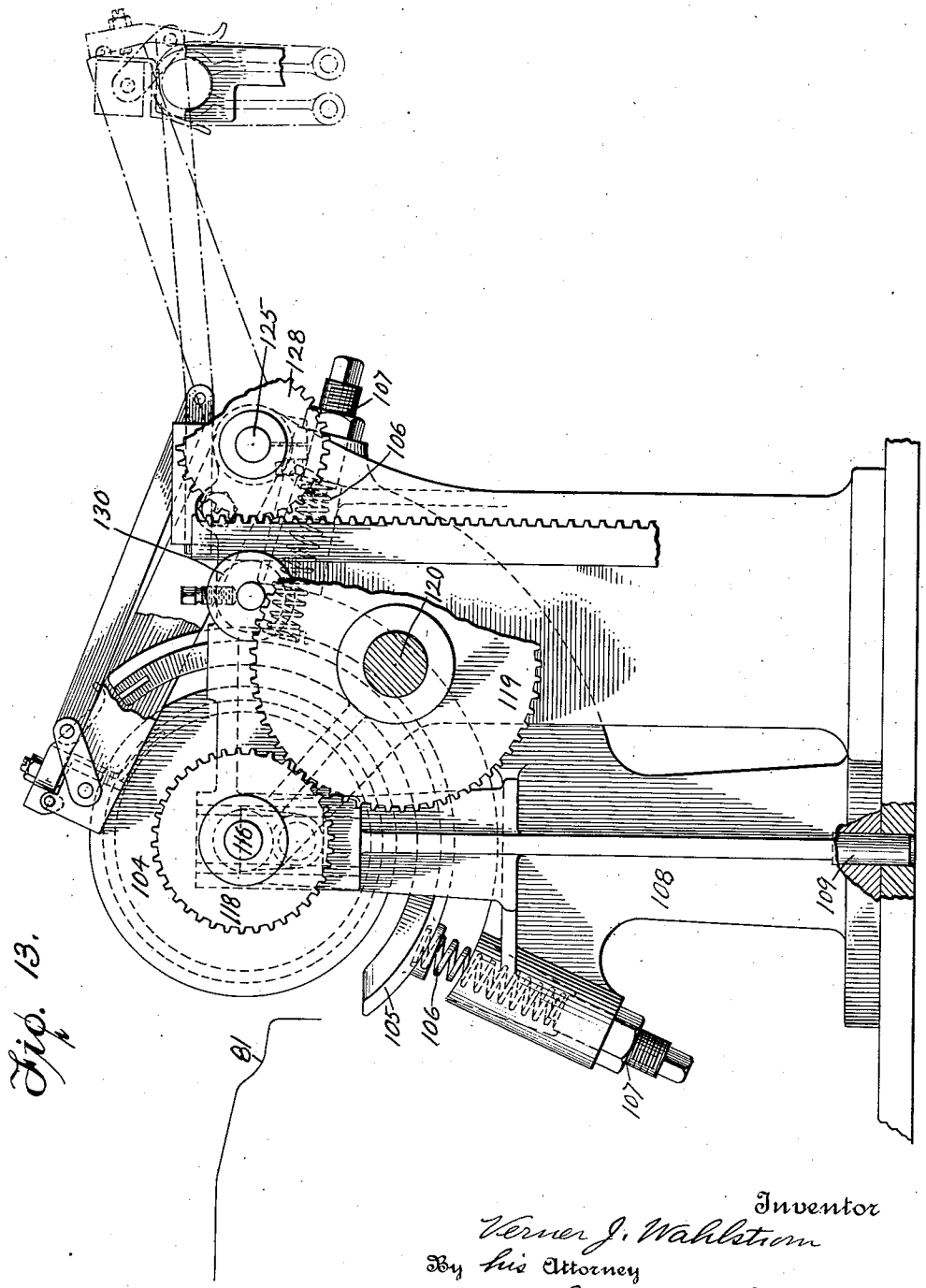


Fig. 13.

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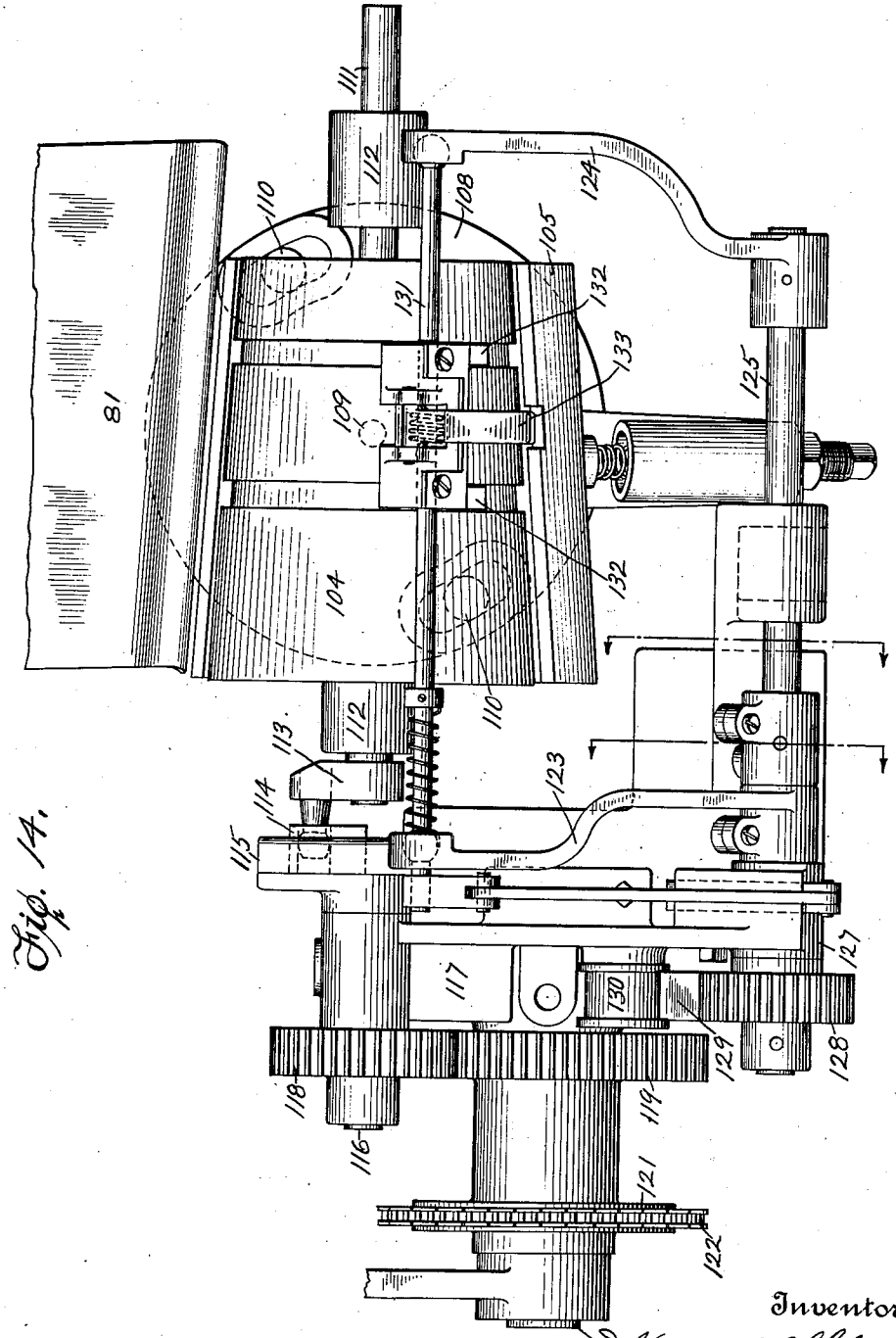


Fig. 14.

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15 SHEETS—SHEET 12.

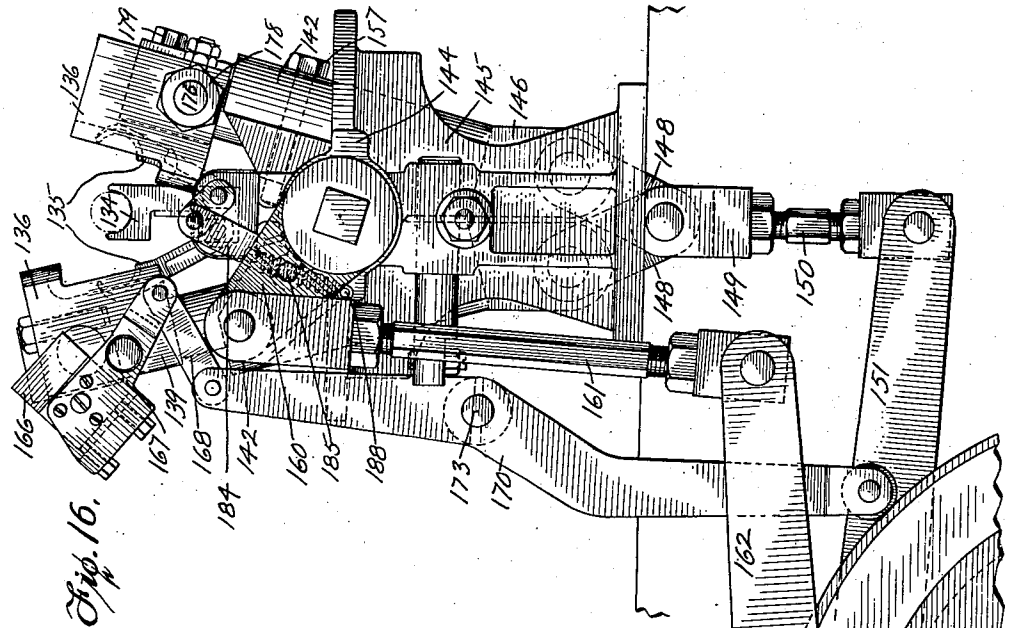


Fig. 16.

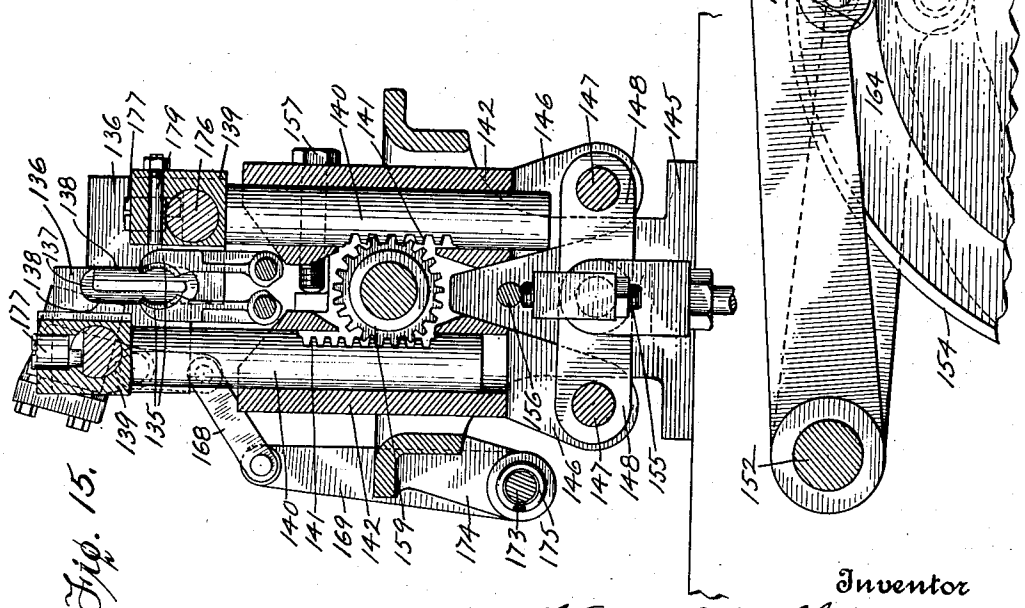


Fig. 15.

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15 SHEETS—SHEET 13.

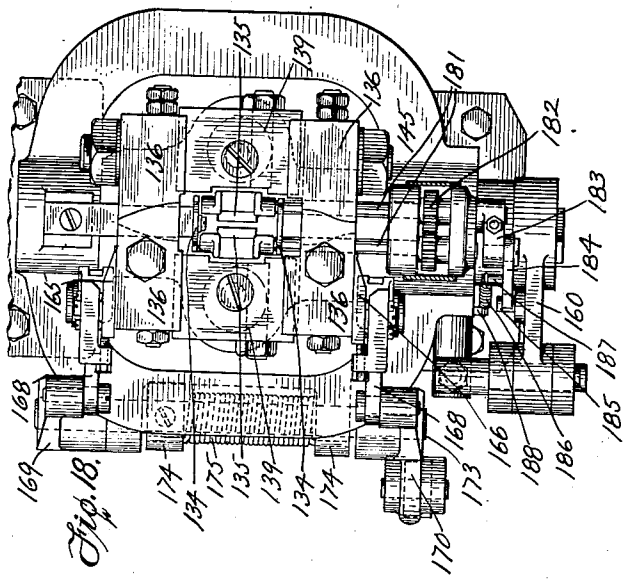


Fig. 18.

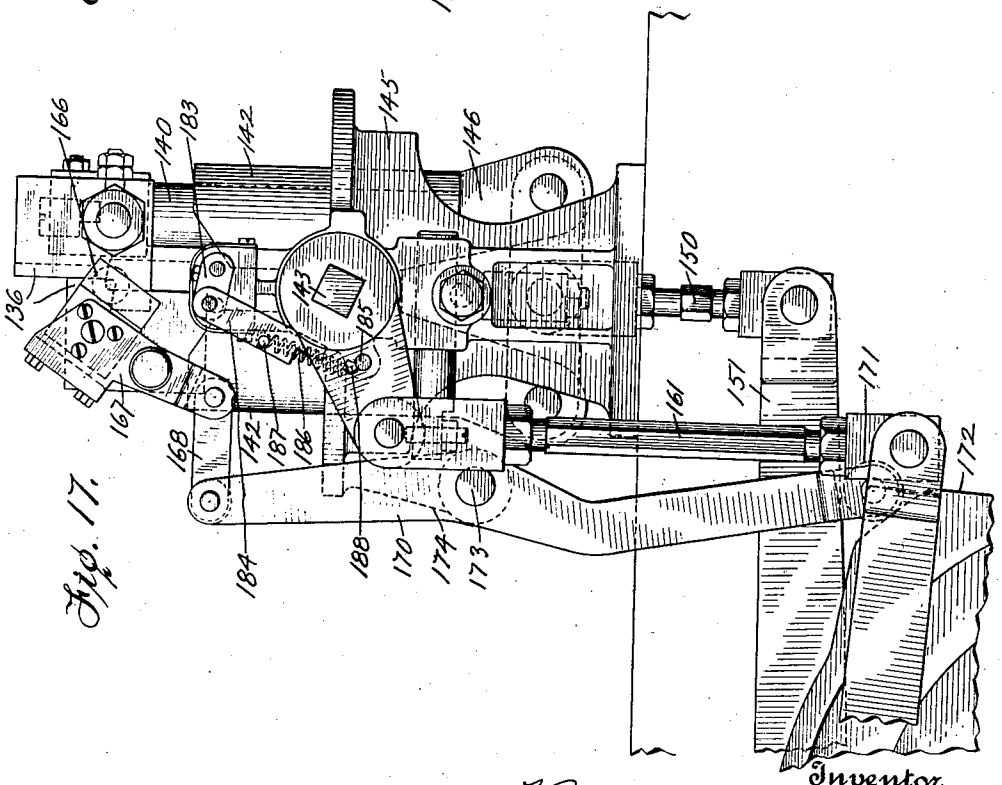


Fig. 17.

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CIGAR BUNCH MACHINE.

FILED SEPT. 27, 1919. 15 SHEETS—SHEET 14.

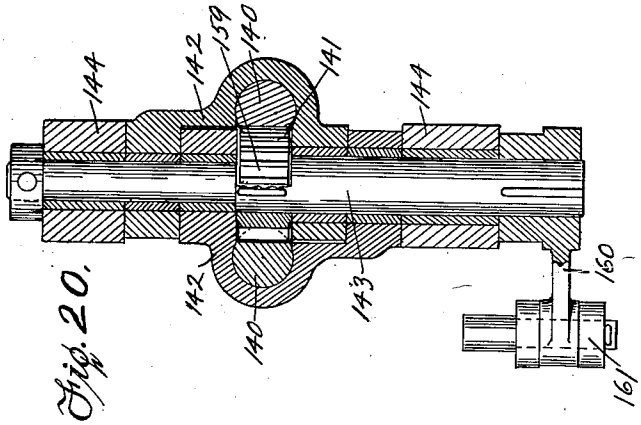


Fig. 20.

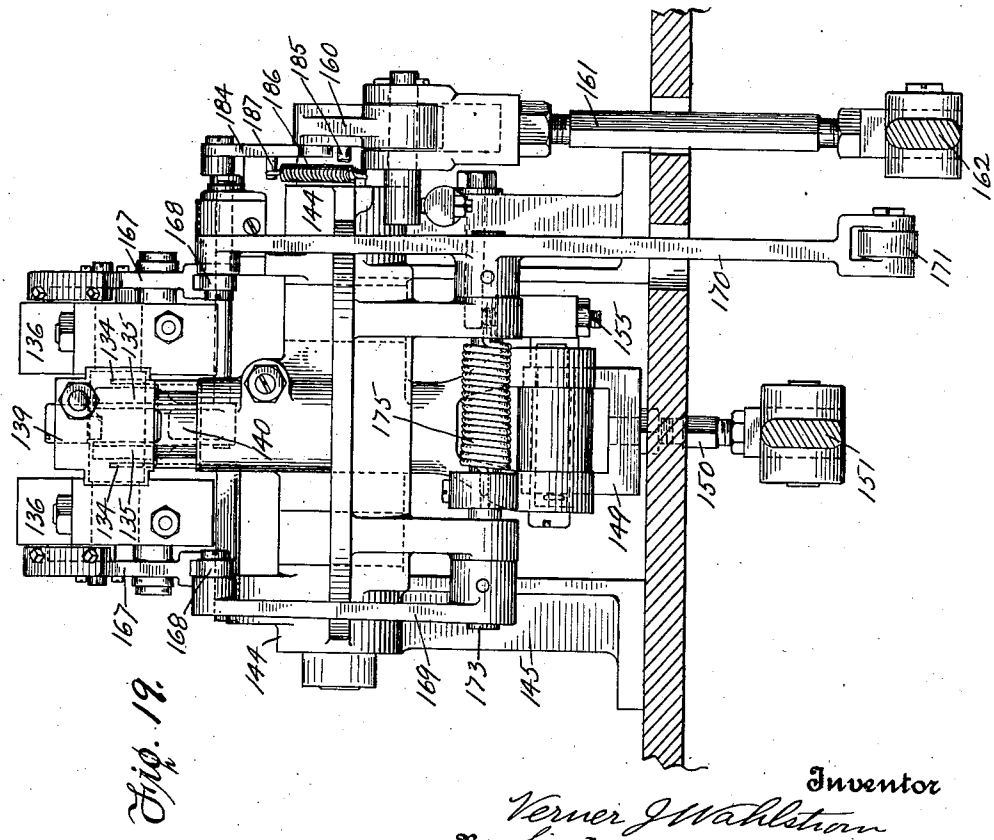


Fig. 19.

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CIGAR BUNCH MACHINE.

FILED SEPT. 27, 1919. 15 SHEETS—SHEET 15.

Fig. 24.

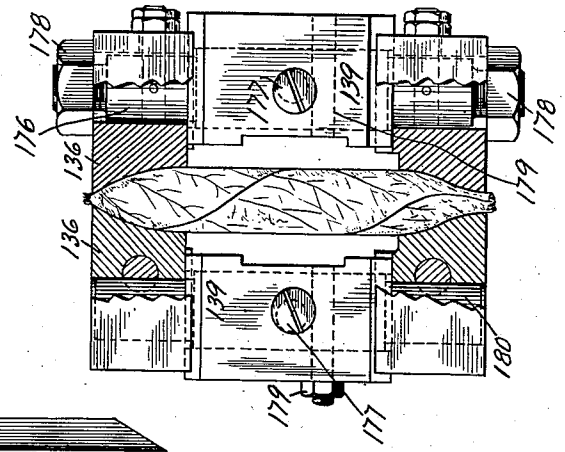


Fig. 22.

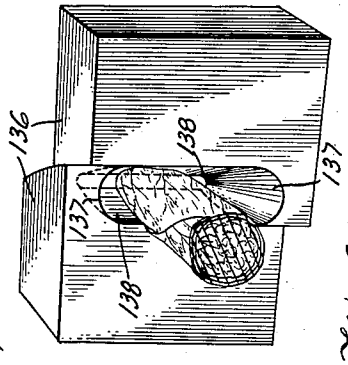


Fig. 23.

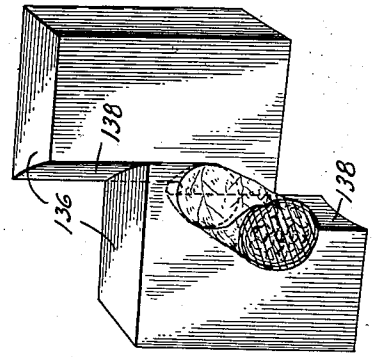
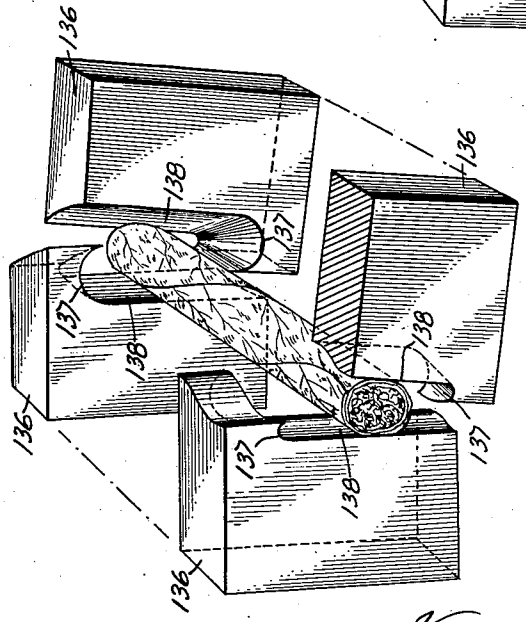


Fig. 21.



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Patented Jan. 16, 1923. 1,442,200

UNITED STATES PATENT OFFICE.

VERNER JOHAN WAHLSTROM, OF BROOKLYN, NEW YORK, ASSIGNOR TO INTERNATIONAL CIGAR MACHINERY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CIGAR-BUNCH MACHINE.

Application filed September 27, 1919. Serial No. 326,720.

To all whom it may concern:

Be it known that I, VERNER J. WAHLSTROM, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Cigar-Bunch Machines, of which the following is a specification.

This invention relates to an improvement in cigar bunch machines of the general type used for making what is known as fresh bunches.

Cigar bunch machines are known in the art which first separate a charge of long filler tobacco from a mass, then cause it to be enclosed within a binder to initially form a fresh bunch, then subject the fresh bunch to the action of a manipulating device for evenly and loosely distributing the filler in its mid-section, and finally compresses one or both ends of the bunch into permanent conic form. It has been found in practice that these machines do not always function as perfectly as they should to satisfy the demands of the trade, particularly when used in the manufacture of high grade cigars. The main object of the present invention is to overcome the defects of existing machines by producing a machine or machines which handles the bunch material in a new and improved way resulting in an improved product. Another object is the production of a machine of the general type above indicated in which a sectional feeding table is used one section being capable of elevation and use to forward a separated charge for further treatment. Still another object is the production of a machine having a chianti belt binder applying mechanism in which the horizontal angular relation of the belt and loop forming roller is changed during the binder applying operation to more evenly wind the binder about the filler charge. Still another object is the production of a machine having a bunch manipulating mechanism movable about an axis lying at an angle to the axis of its bunch rolling drum in order to provide for variations in form of the cigar bunches operated upon, and further having a member cooperating with the bunch rolling drum, said member being yieldingly mounted at two points adjacent its ends whereby a more uniform pressure upon the bunch during the manipulating action is maintained. Still another object is the production of a machine having means for compressing one or both ends of a bunch first into wedge and then into permanent conic form, this having been found much superior to the old method of gathering an end into conic form in one operation. With these and other objects not specifically mentioned in view, the invention consists in certain parts, constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts, Fig. 1 is a side elevation of a machine constructed in accordance with the invention, Fig. 2 is a cross sectional view of the filler feed mechanism, Fig. 3 is a plan view of a filler feed, binder applying, manipulating, and end compressing mechanisms, Fig 4 is a plan view upon an enlarged scale of a part of the charge separating mechanism, Fig. 5 is a sectional view of the charge transferring mechanism, Figs. 6 and 7 are detail views of the same mechanism, Fig. 8 is an end view of the same mechanism, Figs. 9 and 10 are respectively plan and side elevation of the binder applying mechanism, Figs. 11 and 12 are detail views of the same mechanism, Figs. 13 and 14 are respectively side elevation and plan view of the bunch manipulating mechanism, Fig. 15 is a sectional elevation of the end compressing mechanism, Figs. 16, 17 and 18 are elevation and plan views of the same mechanism, Figs. 19 and 20 are detail views of the same mechanism, and Figs. 21, 22, 23 and 24 are diagrammatic views illustrating the action of the end compressing mechanism.

In carrying the invention into effect, there is provided means for supporting a fresh bunch and means acting upon said bunch to first transversely compress one or both of its ends into temporary wedge form and to thereafter compress said end or ends in another direction to give it permanent conic form, this method of compression having been found in practice far superior to the old gathering method. There is further provided in the best constructions within the invention dual end compressing means and means for spacing said dual means in ac-

cordance with the nature and condition of the tobacco of which the bunch is composed, to compensate for the elongation of the bunch which occurs when the finished bunch is rolled in a wrapping device during the subsequent wrapper applying operation, and thus eliminating the wastage of cut wrapper stock heretofore obtaining due to the absence of such adjusting means. In the best constructions also, there is provided a bunch manipulating mechanism including a bunch rolling drum and a cooperating member the latter being mounted adjacent its ends upon compression springs which serve to impart equal pressure to the bunch as it is rolled around by the drum, thus more evenly distributing the filler in the mid-section of the bunch. And in the best constructions also, there is provided a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation whereby a better application of the binder to a doubly tapered bunch is effected, means being also provided for holding the belt against displacement while the angular relation of the belt and roller is undergoing change. All of the above mentioned means, mechanisms and parts may be varied within wide limits within the scope of the claims. The particular construction selected to illustrate the invention is but one of many possible concrete embodiments of the same, and the invention therefore is not to be restricted to the details of the structure shown and described. Furthermore, certain parts of the invention are capable of use independent of other parts, and such independent use is contemplated.

Referring to the drawings, 1 indicates the main frame of the machine selected to illustrate the invention. This frame is of a type well known in the art and serves to support two main power shafts 2 and 3 and numerous brackets which in turn support the various mechanisms in the machine organization. The machine is provided with means for forwarding a mass of filler tobacco in sheet form and with means for separating a charge therefrom and passing it to a binder applying mechanism where it is enclosed within a binder to initially form a fresh bunch. This forwarding and charge separating mechanism is in the main well known in the art and therefore a full detailed description of the same is unnecessary to a full understanding of the present invention and it is omitted in the interest of brevity and clearness. It may be here remarked however that it includes a feed belt 4 and feed wheels 5, cut-off knife 6, rake device 7, charge trimming knives 8, and return belts 9, with operating mechanism therefor deriving its motion from the power shaft 2 through suitable cams fast on said shaft. In Fig. 1, a charge marked C is shown in the position to which the rake device delivers it. In this position it rests upon a grid 10 supported by two cross brackets 11 and 12, the grid and brackets being stationary and forming a part of a sectional table having one movable section marked 13 which normally lies flush with the stationary sections. The rake device 7 delivers the charge against a stop consisting of three fingers 14 which project upwardly through the grid 10. These fingers are secured to a bar 15 fast upon the upper end of an upright 16 the lower end of which is pivoted at 17 to a lever 18 fulcrumed at 19 to a bracket 20 secured to a bracket 21 extending across the machine and supported by the main frame. The lever 18 is rocked at the proper time by means of a link 22 one end of which is pivoted to an adjustable bar 23 carried by an arm 24 having an adjustable connection by means of adjusting screws 25 with a cam lever 26 operated by a cam 27 fast on the shaft 2 before referred to. The cam lever 26 and arm 24 are supported on a bar 28 extending across the machine. The link 22 is also connected with and operates a slide 29 working in the bracket 20. This slide has at its upper end a sleeve 30 open at the top (see Fig. 6). Slidably mounted in this sleeve is a bar 31 which is slotted to support and carry an upright 32 to the upper end of which the movable section 13 of the table is secured. The bar 31 is connected by means of a link 33 with a cam lever 34 fulcrumed on a bar 35 extending across the machine. This cam lever is made in two parts for adjustment purposes, the adjustment being made in a well known manner by the adjusting screws 36. It is to be noted that by means of the structure just described, the movable section 13 of the table lies flush with the rest of the table when the stops 14 are in position to act upon a charge, and that when the section 13 is elevated the stops will be lowered by the same mechanism.

While the stops 14 are in operative position, the charge is clamped on the table in order to securely hold it while the trimming knives move down to cut the uneven ends from the charge. This is accomplished by means of a group of fingers or arms 37 carried by a shaft 38 mounted in a bracket 39 supported by the main frame of the machine. The shaft 38 is provided with an arm 40 which is connected with a link 41, said link being also connected with a cam lever fulcrumed on the bar 28 in a well known manner. After the charge lying on the table has been trimmed, the stops are withdrawn and the movable section of the table 13 is elevated until it is free to move over the stationary part of said table. The cam lever 34 then comes into action and pushes the rod 31 forward in the sleeve 30. This results in moving the movable table section 13 over

the stationary part of the table to push the charge into the open mouth of a charge carrier 42 the function of which is to transfer the charge from the separating mechanism to a binder applying mechanism for enclosure within a binder to initially form a fresh bunch.

The charge carrier 42 is provided with a door 43 for retaining a charge therein, and with a rack ejector 44 for ejecting the charge at the proper time, and it is pivotally mounted on a shaft 45 which is hollow and encloses another shaft 46 the purpose of which will be presently described. The shaft 45 is mounted in bearings 47 and 48 formed on a bracket 49 which is fast on a shaft 50 mounted in bearings 51 and 52 formed on a bracket 53 supported by the main frame of the machine. The shaft 50 is provided with an arm 54 connected with a cam actuated link 55 and by means of which the charge carrier is swung from charge receiving to charge delivering position. During its movement from charge receiving to charge delivering position the carrier must be swung on the axis of the shafts 45 and 46 in order to bring it into proper position for ejection of the charge. This is accomplished by means of the following mechanism: a cam 56 is fast on the shaft 50 and on its periphery runs a bowl 57 carried by a cam lever 58 fulcrumed at 59 and connected with a link 60, this link also being connected with an arm 61 on the shaft 45. The bowl is held to its cam by means of a spring 62 coiled about the shaft 45. The mechanism just described operates to swing the charge carrier from its horizontal position shown in full lines in Fig. 2 to its vertical or charge delivering position shown by dotted lines in said figure.

As the charge carrier moves into position to receive a charge, its door 43 is closed and must be opened. This is accomplished by means of a device mounted on the bracket 21 before referred to. This device consists in the following parts: a bracket 63 rises from the bracket 21. This bracket 63 is provided with a long boss in which a shaft 64 is journaled. Upon one end of this shaft, an operating arm 65 is secured and upon the other end a second arm 66 is fast. The arm 66 is connected with a lost motion link 67 which also engages an arm 68 fast on a short shaft 69 journaled in the upper end of the bracket 63. This short shaft also carries a double dog 70 adapted to engage the pins 71 and 72 on the door 43. The rod 31 before referred to is used for the purpose of rocking the shaft 64 to operate the charge carrier door. With this end in view, the rod 31 is provided with an upright 73 to which is secured an elongated block 74 moving in a path to engage and operate the arm 65. By an inspection of Figs. 5, 6 and 7, it will be readily understood that as the rod 31 moves forward to cause the movable section 13 of the table to push a charge into the carrier, the block 74 moves with it, engages the arm 65 and throws the latter far enough to cause the mechanism just described to open the door 43 in which position it is held by means of the spring 75. After the charge has been pushed into the carrier and the latter is about to swing to delivery position, the block 74 retreats again engaging the arm 65 and rocking it in the opposite direction. This action results in closing the door to hold the charge in the carrier during its swinging movement. When the carrier has reached delivery position, which is over the loop formed in the belt of the binder applying mechanism, the ejector is operated to push the charge out of the carrier. This is accomplished by means of a pinion 76 fast on the shaft 46 and engaging the rack of the ejector 44. The shaft 46 is provided with another pinion 77 which is in mesh with a sector gear 78 formed on an arm of the lever 79 loosely mounted on the shaft 50. A cam acutated link 80 is connected to the other arm of this lever for the purpose of rocking it at the proper time to cause ejection of the charge.

After the charge has been separated from a mass, trimmed and transferred from the separating mechanism, it is acted upon by a binder applying mechanism of the chianti belt type to cause it to be enclosed within a binder to initially form a fresh bunch. While this chianti belt mechanism is of a type generally well known in the art, it differs from those heretofore known in certain respects. The belt 81 rests throughout the greater part of its length upon a table 82 supported by a frame 83 rising from the main frame of the machine. This table and also the belt for a limited area is perforated, the table perforations being in communication with a chamber 84 formed therein, and this chamber is in communication with suitable suction producing mechanism, not shown, by means of a suction pipe 85. The purpose of the perforations is to provide means for holding a binder B in outspread condition on the belt as clearly illustrated in Fig. 9. One end of the belt is as usual secured to the delivery end of the table and the other is attached to a slack adjusting device of well known character and including a roller 86 carrying a sprocket over which runs a chain 87. This chain 87 is fast at one point to a cam actuated lever 88 by means of which it is operated, the chain being kept tight by means of a weighted arm 89 and pulley 90 in a well known manner. The device is provided with a loop forming roller 91 mounted in crossheads 92 and 93. Each of these crossheads is provided with a bowl 94 running in a suitable cam track 95 formed in the sides

of the device. The device is provided with an additional cam track above the table and marked 96, this cam track being different from the main cam tracks. The loop forming roller 91 is provided with an annular recess 97 engaging the cam track 96. The crossheads 92 and 93 are each connected with a cam actuated operating link, that for the crosshead 93 being marked 98, and that for the crosshead 92 being marked 99. The links 98 and 99 are respectively connected with cam levers 100 and 101. After a charge has been deposited in the loop of the chianti belt, the device comes into action in the usual manner and begins to roll the charge over and over and into the binder held by suction on the belt. Thus far, its action is like that of such devices heretofore known. By an inspection of Fig. 9, however, it will be readily understood that the latter part of the rolling action is different from all known devices, the loop forming roller not following the usual direct path across the table without changing its angular relation thereto, but having a certain end thrust produced by the cam track 96 and a certain change in its angular relation with respect to the belt. It is of course the independent crosshead operating mechanisms and the cam track 96 that makes this peculiar movement of the loop forming roller possible. Its main advantage lies in the adaptability of the device to more accurately follow the contour of a cigar bunch having a double taper shape, and to more effectively apply the binder to the charge and in smoother condition. When the angular relation of the belt and roller is changing, there is a tendency of the belt to crowd ahead of the roller and wrinkle. Means are therefore provided to prevent this and as shown said means consists in a suction chamber 102 located under the belt at a point adjacent its delivery end and just where the tendency to wrinkle exists. This chamber is in communication with a suitable suction producing mechanism, not shown, by means of a pipe 103. It will be readily understood that the suction force exerted on the belt at this point will prevent it from slipping and forming a wrinkle.

The binder applying mechanism delivers an enclosed charge, now a fresh bunch, to a bunch manipulating mechanism the function of which is to evenly and loosely distribute the filler in its mid-section so that when finished the cigar will smoke freely and evenly. This mechanism includes a bunch rolling drum 104 and a cooperating concentric member 105, the latter being yieldingly mounted adjacent each of its ends, or, as shown, upon compression springs 106 which are adjustable by means of adjusting screws 107. The drum, cooperating member, and springs are all mounted in a single casting 108 surmounting the main frame of the machine. This casting is located on the main frame by means of a single dowel pin 109 so that the device is adjustable about an axis lying at an angle to the axis of the drum, or, in other words, about the dowel pin 109. The purpose of this adjustment is to adapt the device for making differently shaped bunches without the necessity heretofore existing of changing the parts of the device to meet the new requirements. The casting 108 is held firmly in adjusted position by means of bolts indicated at 110. The drum 104 is mounted upon a shaft 111 journaled in bearings 112 formed on the casting 108, and one of its ends is provided with a crank 113 engaging a sliding block 114 in a crosshead 115 fast on a shaft 116 journaled in a bracket 117 rising from the main frame of the machine. Mounted on a projecting end of the shaft 116 is a pinion 118 which is in mesh with a gear 119 fast on a short shaft 120 journaled in a bearing on the bracket 117. This shaft also carries a sprocket 121 over which runs a chain 122 deriving its motion from the shaft 3 before referred to. It will be understood that the purpose of the crank 113 is to maintain driving connection between the shafts 111 and 116 when the drum is adjusted slightly out of alignment with the shaft 116. The particular manner of mounting the cooperating member has been found in practice to more evenly distribute the filler in the mid-section of the bunch than the earlier devices intended to accomplish the same result.

A bunch transferring device is provided for transferring the manipulated bunch to a bunch end compressing mechanism the function of which is to compress the ends, or in some cases one end, into permanent conic form. As shown, this transferring device is mounted on the bracket 117. It includes a pair of side arms 123, 124, carried by a shaft 125 journaled in bearings 126 and 127 formed in the casting 117. This shaft is rocked at proper times by means of a pinion 128 fast thereon and a cam actuated rack 129, the rack being held to its duty by means of an idle roller 130 of well known construction and operation. Connecting the outer ends of the side arms 123 and 124 is a rod 131 carrying at a point between its ends a pair of fixed fingers 132 and a spring finger 133 adapted to clasp a bunch rolled therebetween by the action of the drum and cooperating member at the end of the manipulating operation.

The bunch transferring device just described delivers a manipulated bunch to a bunch end compressing means which receives and supports the bunch during further treatment. This compressing means includes a cradle 134 and a pair of co-operating bunch

holding fingers 135, this cradle and these fingers being of a type well known in the art, and their function is to support and hold the midsection of a fresh bunch in uncompressed condition while one of its ends is being compressed into permanent conic form: or, in case the bunch is double tapered, while both of its ends are being so compressed.

As hereinbefore pointed out, it has been found in practice that by compressing the end of a bunch first into wedge and thereafter into permanent conic form, a firmer, more even, and otherwise better end is produced. In order to effect this double compression, two pairs of forming jaws 136 are provided, together with means for producing a relative approaching movement of said jaws to cause them to simultaneously compress both ends of the bunch into wedge form, and means for thereafter producing a different relative movement of said jaws to compress the temporarily wedge shaped ends in another direction into permanent conic form. By an inspection of Fig. 24, it will be seen that the two pairs of jaws compress the opposite ends of the bunch into different forms although both ends are conic within the meaning of the term as herein used. Each of the jaws 136 is provided with a concavity 137 and a flat side 138 adjacent thereto. The jaws are mounted in pairs upon a pair of crossheads 139, each crosshead having a stem 140 provided with a rack 141, the purpose of which will be hereinafter explained. Each of the stems 140 is slidably mounted in an oscillating bracket 142. Both of these brackets are fulcrumed on a shaft 143 suitably journaled in bosses 144 formed on a bracket 145 rising from the main frame 1 of the machine. Each of the oscillating brackets 142 is provided with a depending lug 146, and pivoted at 147 to these lugs 146 is a pair of operating toggle arms 148 also pivotally connected to a fork 149 formed in the upper end of an adjustable connecting rod 150, the other end of this connecting rod being pivoted to a cam lever 151 fulcrumed on a bar 152 extending across the machine and carrying a bowl 153 operating in a cam track formed inside of a cam 154 fast on the power shaft 3 before referred to. The toggle mechanism just described operates to oscillate the brackets 142 and thus produce a relative approaching movement of the compressing jaws, as indicated in Figs. 21 and 22, to compress the ends of the bunch into temporary wedge form. For the purpose of limiting the movement of the toggle mechanism, there is provided an adjustable stop screw 155 mounted on the fork 149 before referred to, which, at the end of the toggle movement, engages a stop pin 156 secured in the bracket 145 before referred to.

After the bunch ends have been compressed in a wedge form, the jaws 136 are given opposite movement in parallelism to cause the concavities 137 of the jaws to engage the wedge ends of the bunch and transversely compress them into permanent conic form. In order to do this successfully it is necessary that the jaws be relatively accurately positioned so that they may be moved past each other in close relation but without friction. With this in view, one of the brackets 142 is provided with an adjusting screw 157 which engages a suitable boss 158 formed on the other oscillating bracket. By means of this adjusting screw, the initial approaching movement of the jaws is accurately limited, as shown in Fig. 15. The mechanism for causing the jaws to move in such manner as to transform the wedge shaped ends of the bunch into permanent conic form is a cam actuated rack and pinion mechanism and includes the racks 141 before referred to, both of these racks being in mesh with a pinion 159 fast on the shaft 143 before referred to. One of the ends of this shaft 143 is squared and upon the squared end is mounted an arm 160. The free end of this arm is pivoted to the upper yoke of a connecting rod 161, the lower end of this rod being connected to a cam lever 162, which lever is fulcrumed on the bar 152 and carries a cam bowl 163 tracking in a cam groove 164 in one side of the cam 154 before referred to. It will of course be understood that the cams are timed to produce the approaching movement of the jaws, and after this approaching movement is completed, to produce the jaw movement in parallelism which results in transforming the wedge shaped bunch ends into their permanent conic form.

Means are provided for trimming the ends of the bunch while in the end compressing means and this means comprises a pair of knives 165 and 166. The knife 165 lies in contact and cooperates with the outer surfaces of one pair of compressing jaws when the latter are closed to shear off excess tobacco protruding through said jaws. Similarly, the knife 166 co-acts with the other pair of compressing jaws. Each knife is screwed to and carried by a lever 167 fulcrumed to one of the jaws 136, and each lever is connected to a link 168. The link 168 of the knife 165 is also connected to an arm 169, while the link 168 of the knife 166 is connected to the upper arm of a cam lever 170, carrying at its lower end a bowl 171 tracking on a peripheral cam 172 formed on the cam 154 before referred to. The arm 169 and lever 170 are both fast on a shaft 173 journaled in lugs 174 extending from the bracket 145 before referred to. By the construction just described, the two knives 165 and 166 are operated simultaneously to trim both ends

of the bunch immediately after full compression thereof has taken place. The knives are returned to their normal inoperative position, as shown in Figs. 15 and 16, by means of a torsion spring 175 coiled about the shaft 173 before referred to and operating in a well known manner.

For the reason that during the operation of winding a wrapper about a finished bunch the bunch is subjected to a certain amount of pressure which has the effect of elongating the bunch during the wrapping operation, and for the further reason that the nature and condition of the tobacco of which the bunch is composed affects this bunch elongation, the present invention includes means for compensating or allowing for this elongation although it does not occur until after the present invention has completed its function. With this end in view, the dual end compressing means, or in other words, the two pairs of forming jaws are adjustably spaced to operate in accordance with the nature and condition of the tobacco of which the bunch is composed. One of the crossheads 139 carries a stud 176, as shown, upon which the jaws carried by this particular crosshead are supported. This stud 176 is adjustable in the crosshead and the adjustment is effected by means of an eccentric screw 177 mounted in the crosshead and engaging a suitable slot in said stud. By means of this eccentric screw the stud may be moved longitudinally in the crosshead. One of the jaws 136 is permanently held upon one end of the stud 176 by means of a nut 178 so that it moves with the stud when the latter is moved for adjusting purposes. The other jaw 136 is always in contact with one side of the crosshead 139 and is loose upon the stud 176 while the adjustment is being made, but is held in place by means of a similar nut 178 after the adjustment has been made. The adjusting screw 177 is held in adjusted position by means of a transverse locking pin 179. The other crosshead 139 is also provided with a large supporting stud 180, this stud being like the stud 176 except that it needs and has no clamping nuts.

The bunch holding fingers 135 referred to are mounted upon shafts 181 geared together at 182 so that they may be operated simultaneously. One of these shafts projects beyond the bracket 145 adjacent the arm 160 and its projecting end is provided with an arm 183 clamped thereupon and carrying on its free end a flat bar 184 located in the path of movement of a pin 185 fast in the arm 160 before referred to. The bar 184 is held in proper position by means of a spring 186, one end of this spring being connected to a pin 187 fast in the bar 184, and the other end being fast to a pin 188 fast in the bracket 145 before referred to. When the jaws and fingers are in the position shown in Fig. 16, which is the position they occupy when this mechanism receives a bunch from the manipulating mechanism, the arm 160 is in its upper position, and while in this upper position it holds the fingers 135 open. As soon, however, as the arm 160 swings down, the pin 185 leaves the lower end of the bar 184 and permits the spring 186 to pull the bar 184 down to the position shown in Fig. 17, which results in closing the fingers on the bunch.

In view of the foregoing, a detailed description of the operation of the device is deemed unnecessary and is therefore omitted in the interest of brevity and clearness.

What is claimed is:

1. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

2. In a cigar bunch machine, the combination with a cradle and cooperating bunch holding fingers, of means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

3. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form, and means for trimming said bunch in the compressing means.

4. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of dual means acting upon both ends of said bunch to transversely compress them, and means for spacing said dual means in accordance with the nature and condition of the tobacco of which said bunch is composed.

5. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of dual means acting upon both ends of said bunch to transversely compress them into wedge and then into permanent conic form, and means for spacing said dual means in accordance with the nature and condition of the tobacco of which said bunch is composed.

6. In a cigar bunch machine, the combination with means for applying a binder to a charge of long filler tobacco to initially form a fresh bunch, of means receiving and supporting said bunch, and means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

7. In a cigar bunch machine, the combination with means for manipulating a fresh bunch to evenly and loosely distribute the

filler in its mid-section, of means receiving and supporting said bunch, and means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

8. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch, means receiving and supporting said bunch, and means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

9. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch, means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section, means receiving and supporting said bunch, and means acting upon an end of said bunch to transversely compress said end into wedge and then into permanent conic form.

10. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws, means for producing a relative approaching movement of said jaws to cause them to compress an end of said bunch, and means for thereafter producing a different relative movement of said jaws to compress said end in another direction.

11. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws each having a concavity and a flat side tangent thereto, means for producing a relative approaching movement of said jaws to cause the flat sides thereof to compress an end of said bunch, and means for thereafter producing a different relative movement of said jaws to cause the concavities thereof to compress said end in another direction.

12. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws, means for moving each of said jaws toward the other to cause them to compress an end of said bunch, and means for thereafter moving said jaws in opposite but parallel directions to compress said end in another direction.

13. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws, cam actuated toggle mechanism for producing a relative approaching movement of said jaws to cause them to compress an end of said bunch, and means for thereafter producing a different relative movement of said jaws to compress said end in another direction.

14. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws, means for producing a relative approaching movement of said jaws to cause them to compress an end of said bunch, and cam actuated rack and pinion mechanism for thereafter producing a different relative movement of said jaws to compress said end in another direction.

15. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of a pair of forming jaws, cam actuated toggle mechanism for moving each of said jaws toward the other to cause them to compress an end of said bunch, and cam actuated rack and pinion mechanism for thereafter moving said jaws in opposite but parallel directions to compress said end in another direction.

16. In a cigar bunch machine, the combination with means for supporting a fresh bunch, of two pairs of differently shaped forming jaws spaced apart, means for simultaneously producing relative approaching movements of the jaws of each pair to cause them to compress opposite ends of said bunch, and means for thereafter simultaneously producing different relative movements of the jaws of each pair in another direction to compress said ends in another direction.

17. In a cigar bunch machine, a device for manipulating a fresh bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member adjustable about an axis lying at an angle to the axis of said drum.

18. In a cigar bunch machine, a device for manipulating a fresh bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member the latter being yieldingly mounted adjacent each of its ends.

19. In a cigar bunch machine, the combination with means for applying a binder to a charge of long filler tobacco to initially form a fresh bunch, of means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member adjustable about an axis lying at an angle to the axis of said drum.

20. In a cigar bunch machine, the combination with means for applying a binder to a charge of long filler tobacco to initially form a fresh bunch, of means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member the latter being mounted adjacent each of its ends upon a compression spring.

21. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch, and means for

manipulating said bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member adjustable about an axis lying at an angle to the axis of said drum, said member being mounted adjacent each of its ends upon a compression spring.

22. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch, means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section including a bunch rolling drum and cooperating member adjustable about an axis lying at an angle to the axis of said drum, said member being mounted adjacent each of its ends upon a compression spring, and means receiving and thereafter compressing the bunch ends.

23. In a cigar bunch machine, a device for applying a binder to a charge of long filler tobacco to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation.

24. In a cigar bunch machine, the combination with means for applying a binder to a charge of long filler tobacco to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation, of means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section.

25. In a cigar bunch machine, the combination with means for applying a binder to a charge of long filler tobacco to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation, of means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section, and means receiving and thereafter compressing the bunch ends.

26. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation.

27. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation, and means for holding said belt against displacement during the change in the angular relation of said belt and roller.

28. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass, of means for applying a binder to said charge to initially form a fresh bunch including a chianti belt and a loop forming roller therefor and actuating means for the latter operating to change the horizontal angular relation of said belt and roller during the binder applying operation, and suction devices for holding said belt against displacement during the change in the angular relation of said belt and roller.

29. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass including a sectional table and means for elevating one section and then moving it over another to forward a charge, of means for applying a binder to said charge.

30. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass including a sectional table and means for elevating one section and then moving it over another to forward a charge, of means for applying a binder to said charge to initially form a fresh bunch, and means receiving and manipulating said bunch to evenly and loosely distribute the filler in its mid-section.

31. In a cigar bunch machine, the combination with means for separating a charge of long filler tobacco from a mass including a sectional table and means for elevating one section and then moving it over another to forward a charge, of means for applying a binder to said charge to initially form a fresh bunch, means for manipulating said bunch to evenly and loosely distribute the filler in its mid-section, and means receiving and thereafter compressing the bunch ends.

In testimony whereof, I have signed my name to this specification.

VERNER JOHAN WAHLSTROM.