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CIGAR MACHINE

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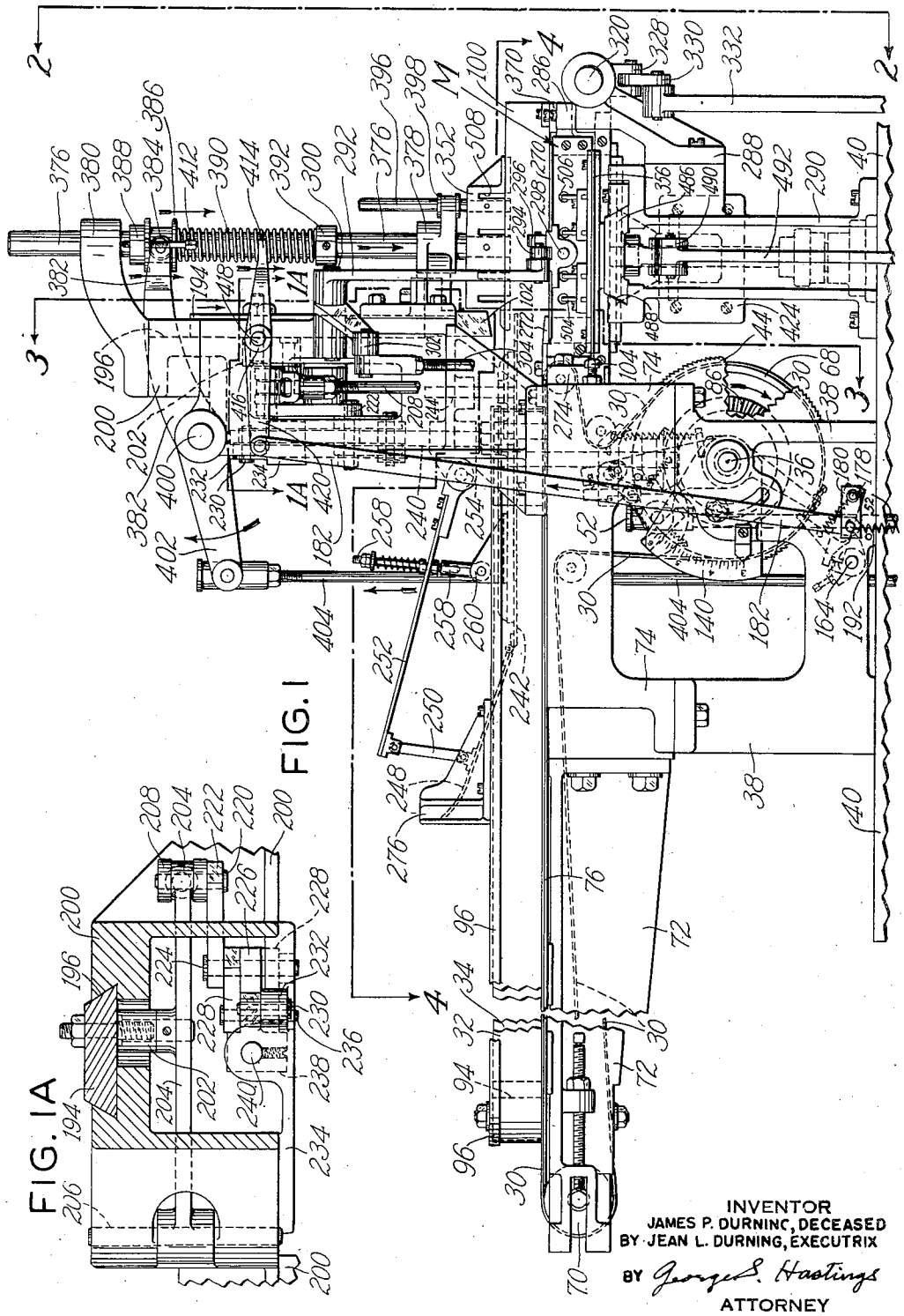


FIG. 1

FIG. 1A

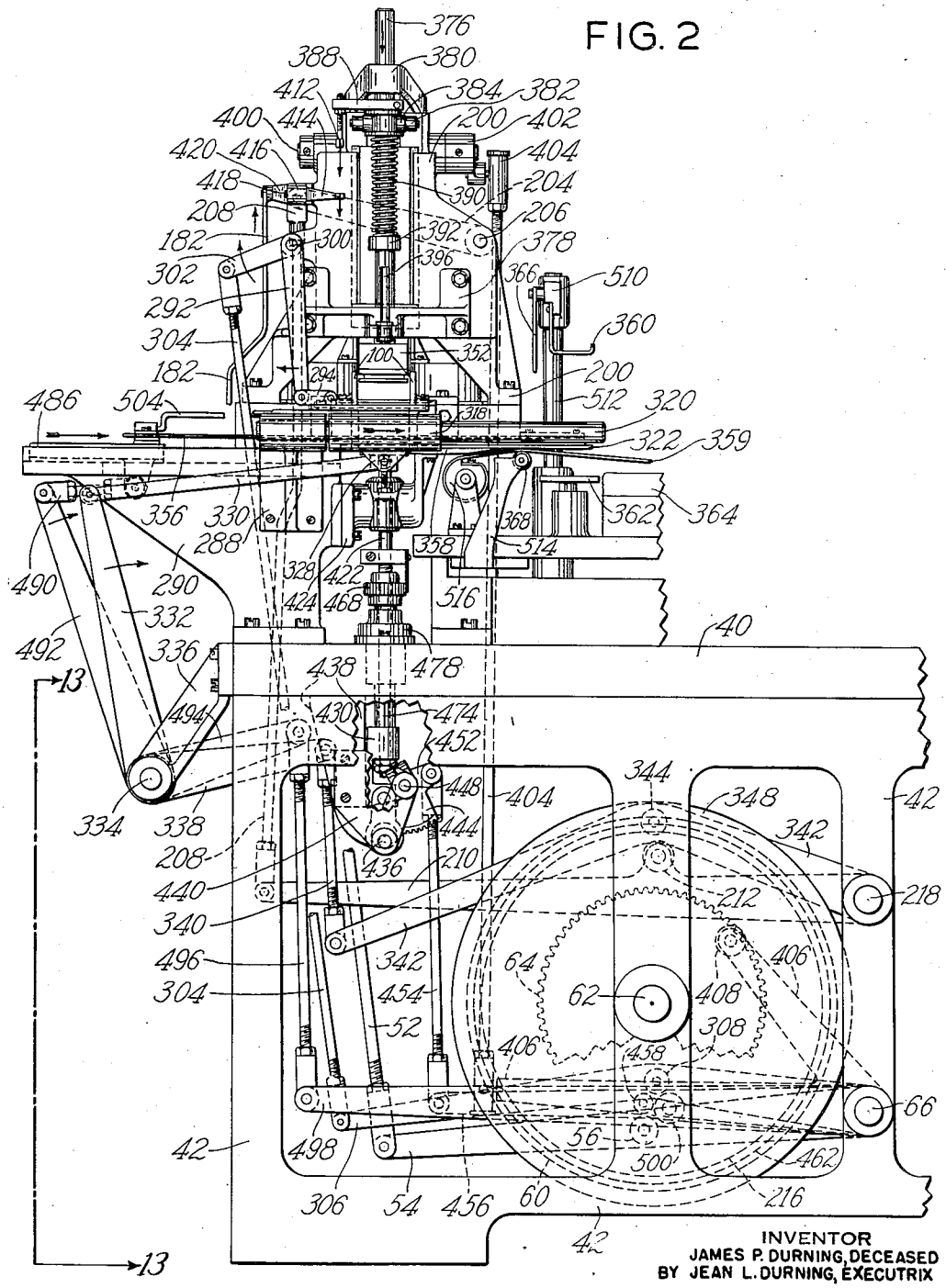
INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 2



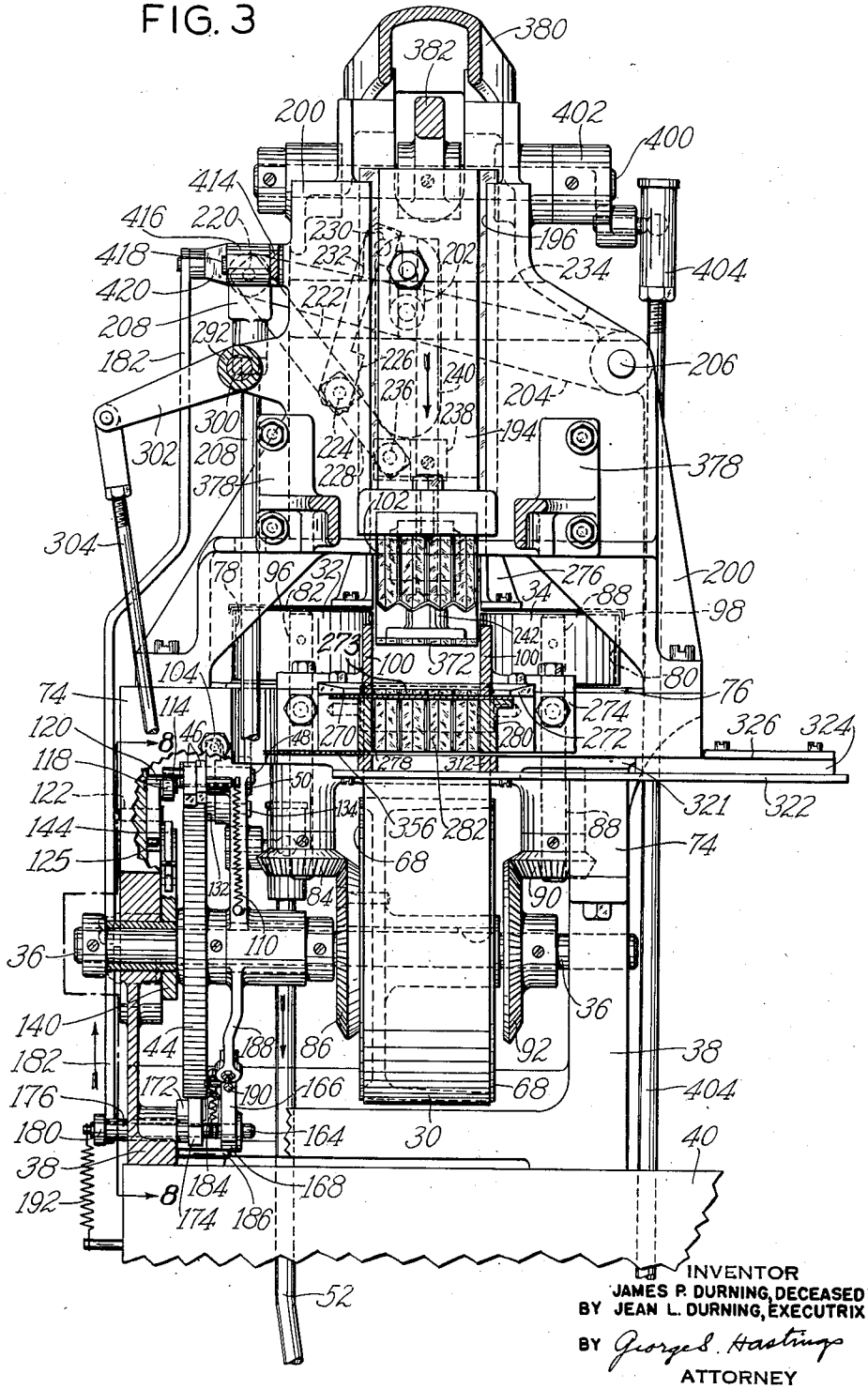
INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 3



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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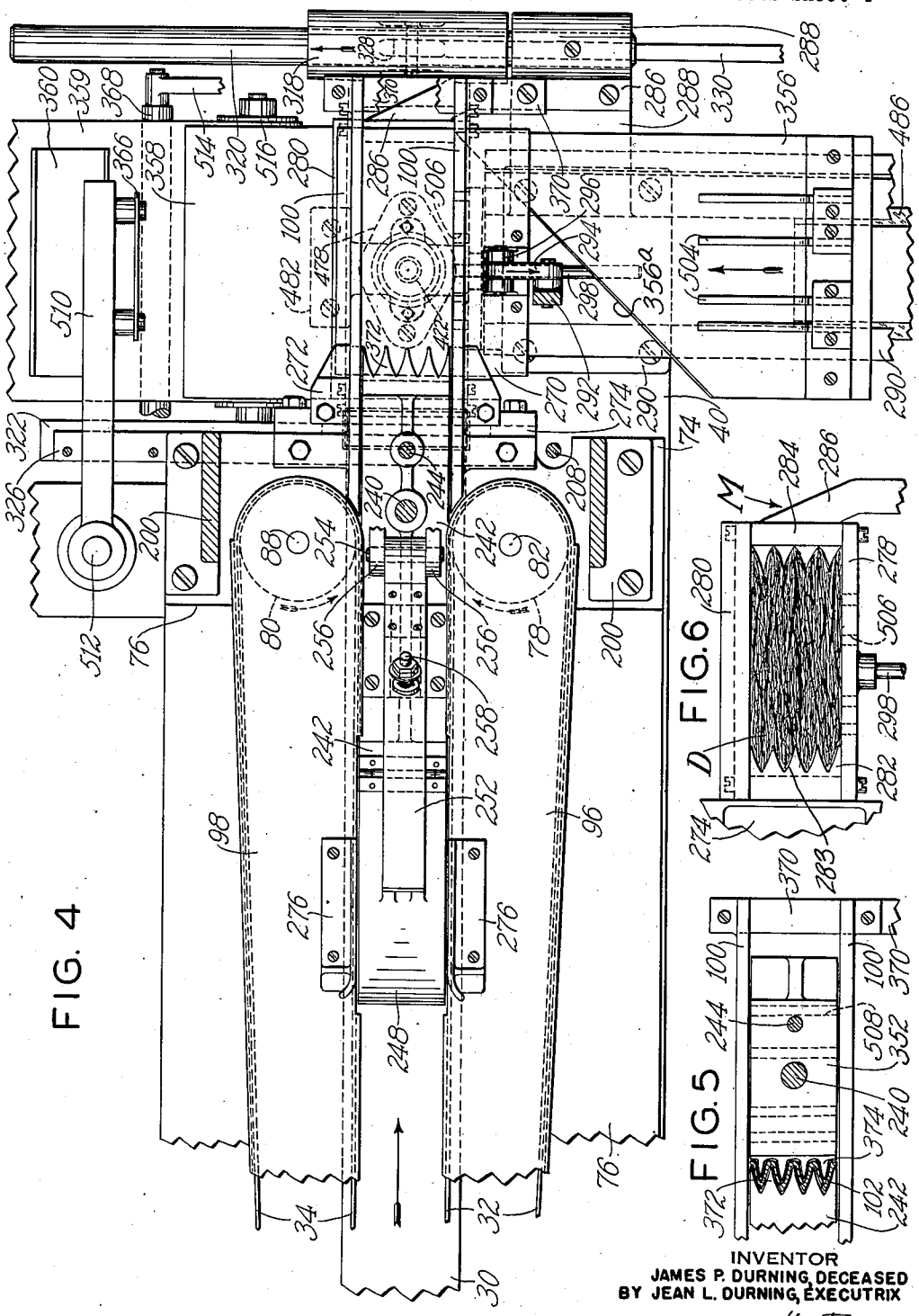


FIG. 4

FIG. 6

FIG. 5

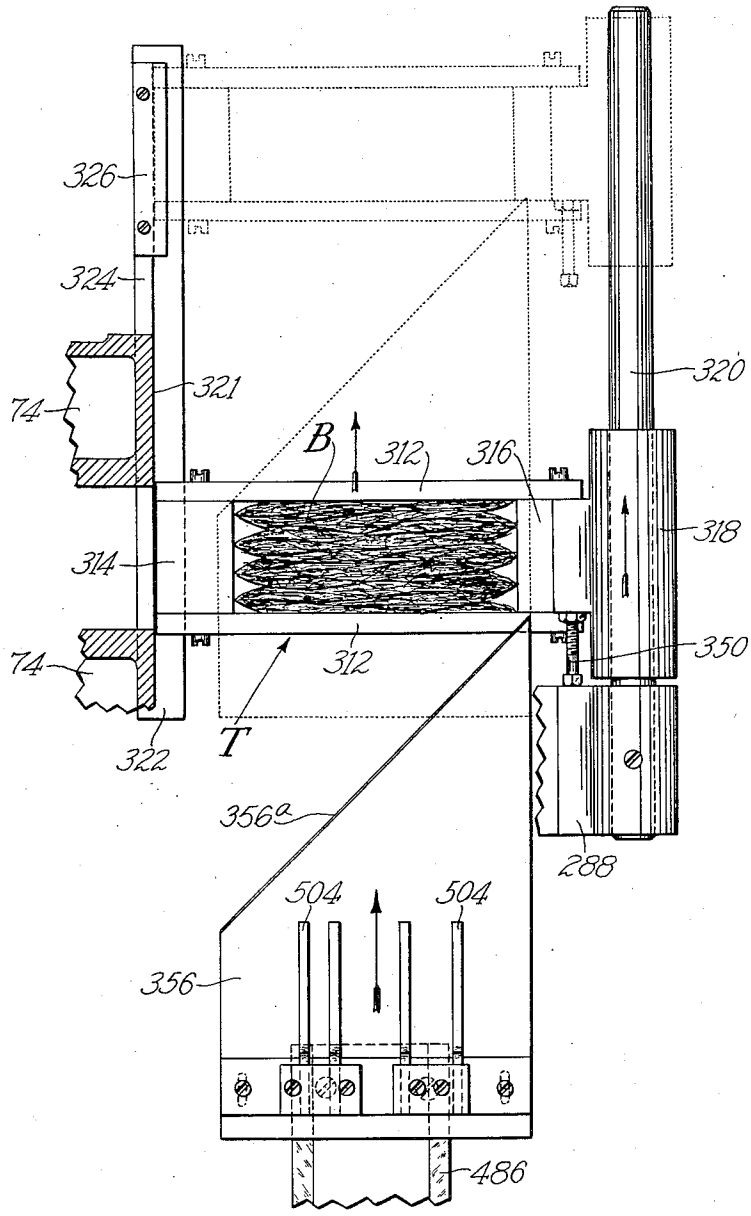
INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 7



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 8

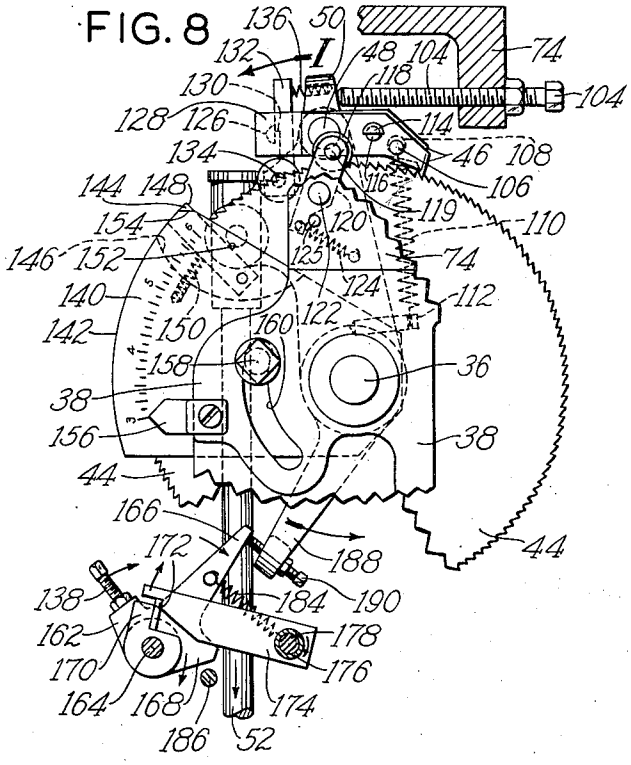
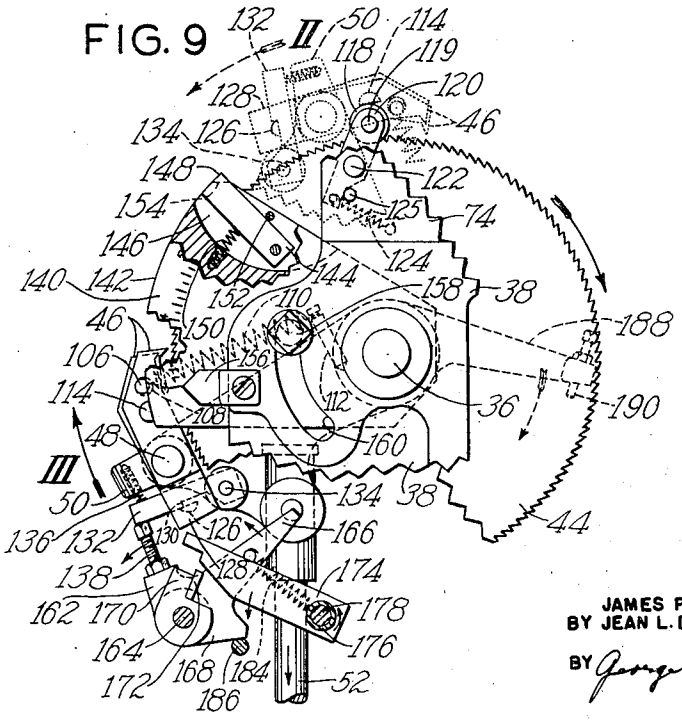


FIG. 9



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 11

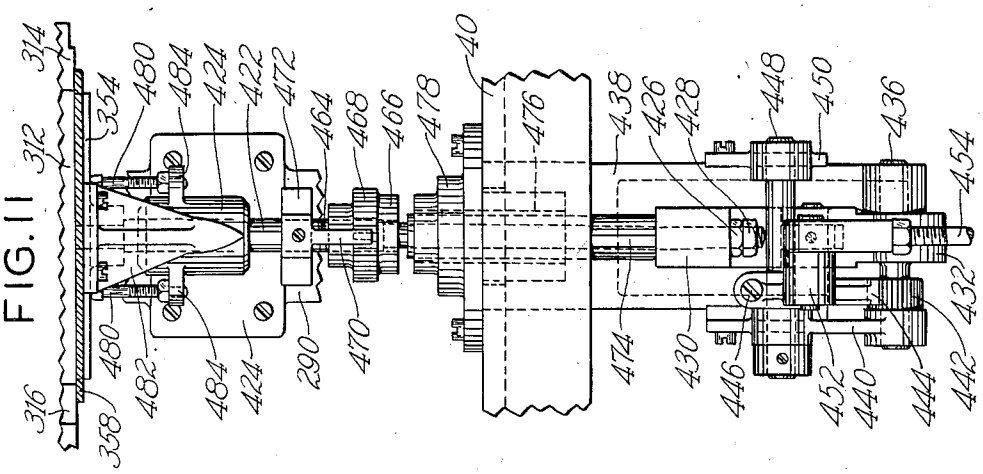


FIG. 12

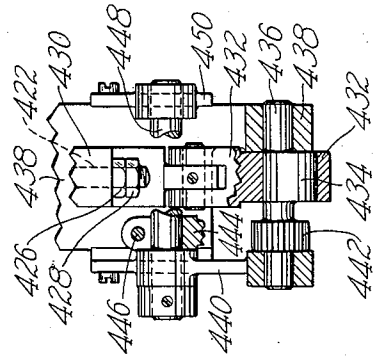
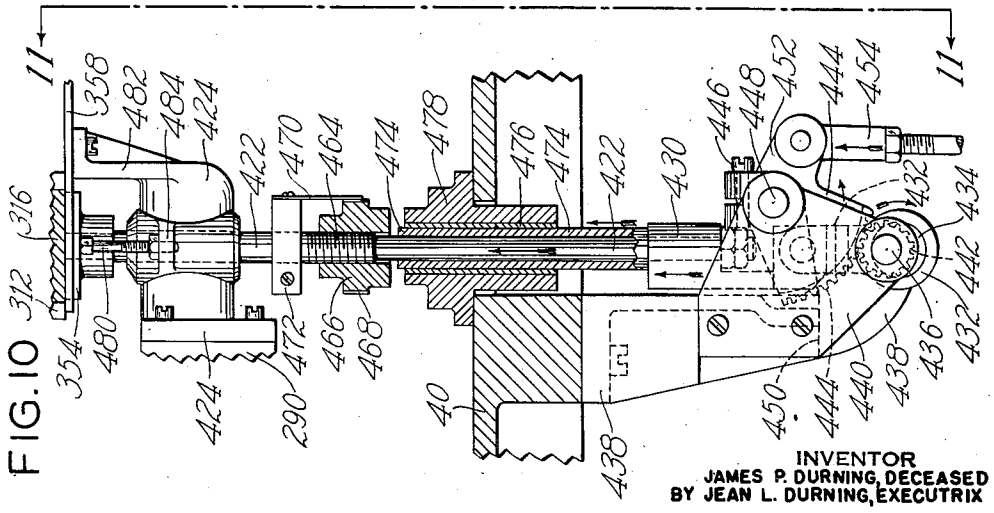


FIG. 10



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX

BY George S. Hastings
ATTORNEY

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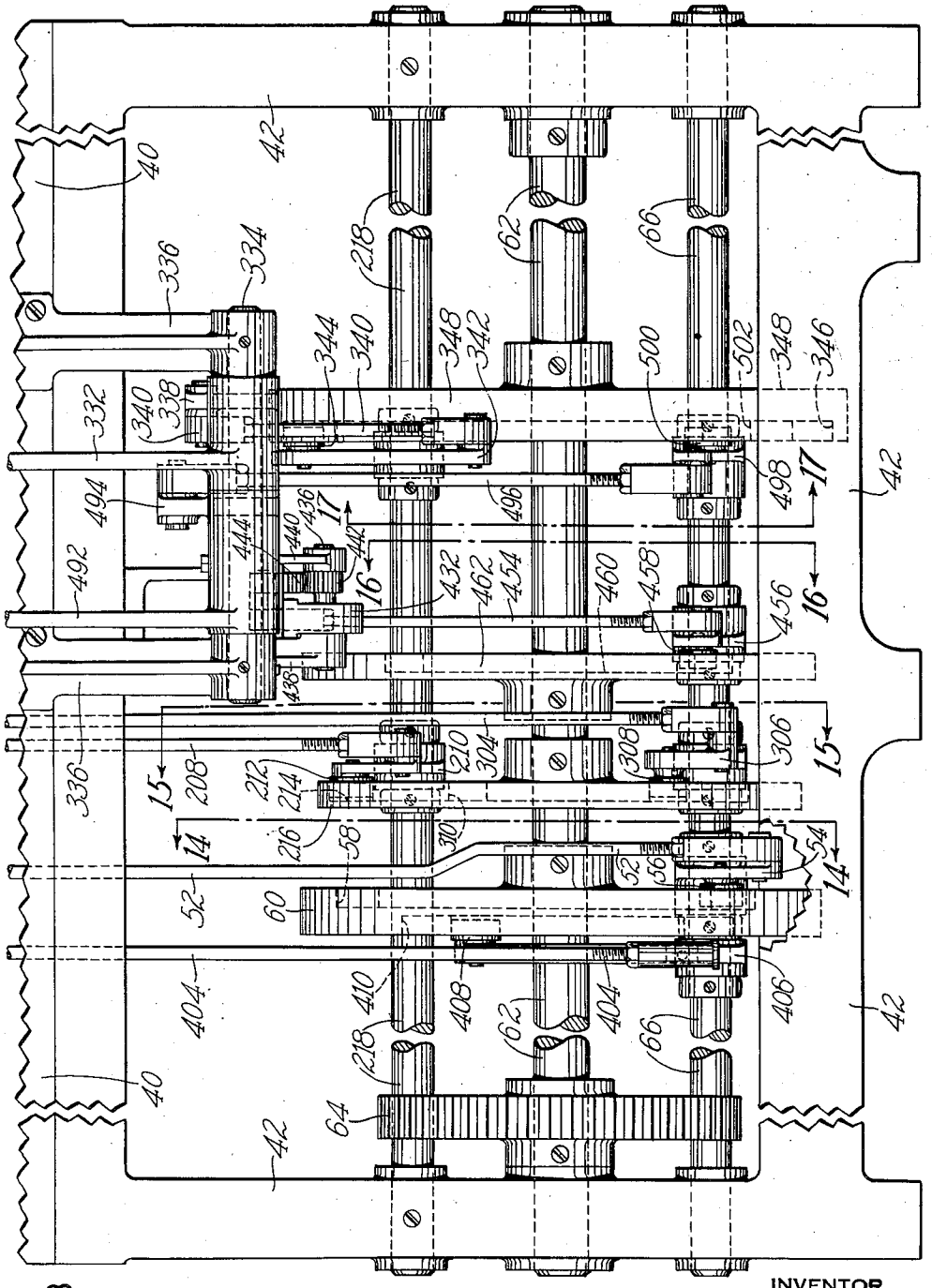


FIG. 13

INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 14

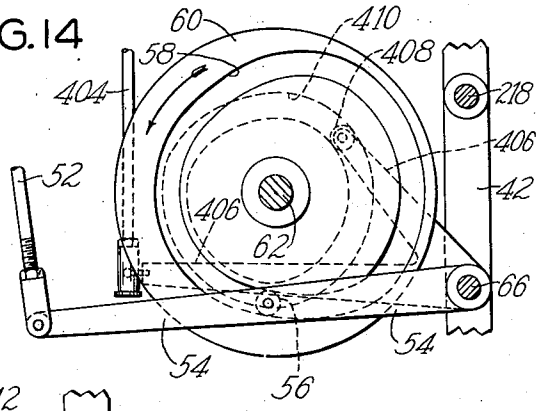


FIG. 15

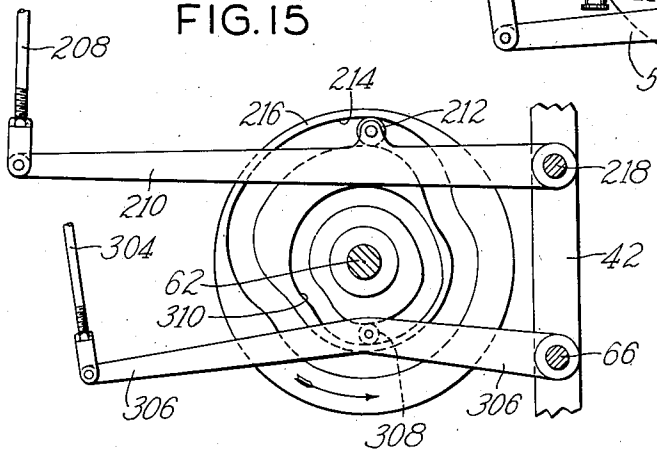


FIG. 16

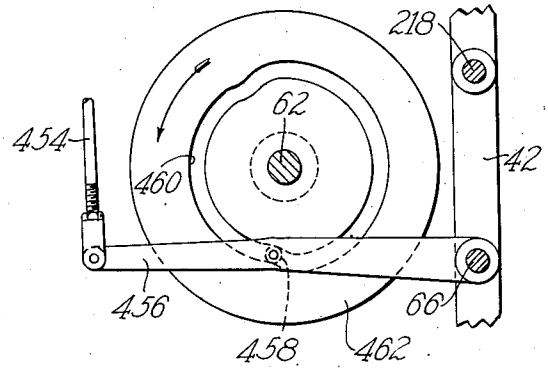
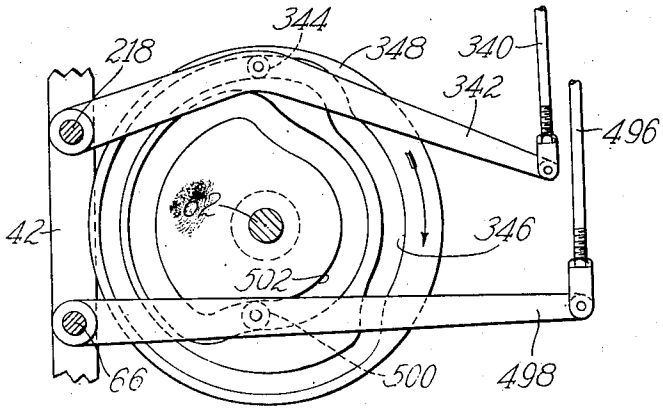


FIG. 17



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 18

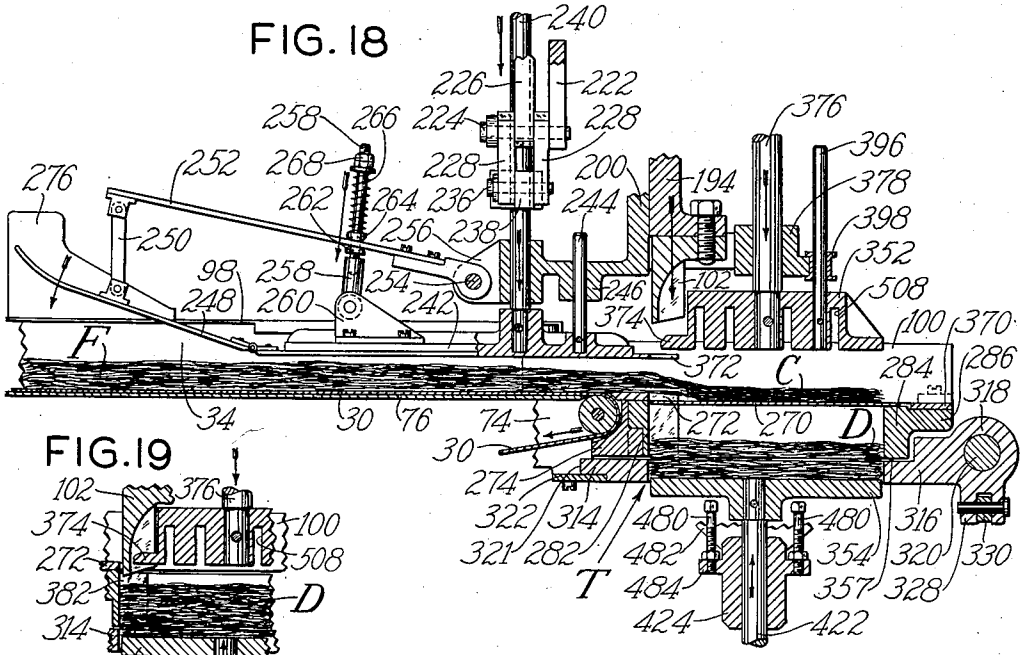


FIG. 19

FIG. 20

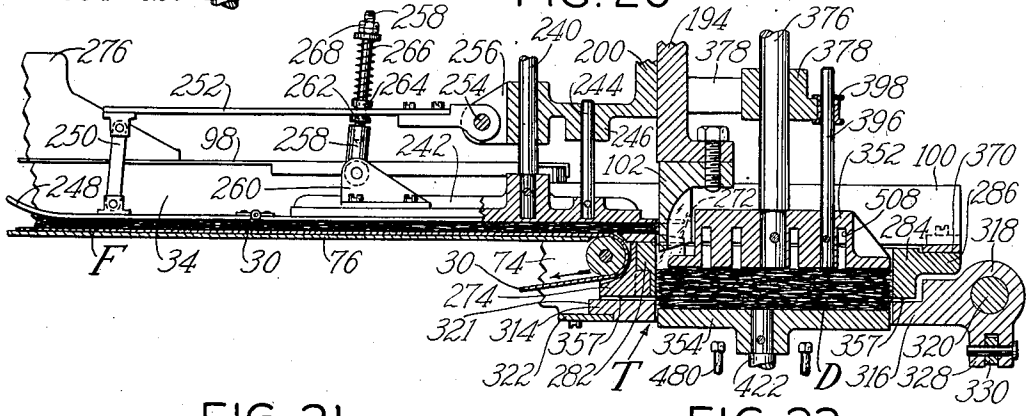


FIG. 21

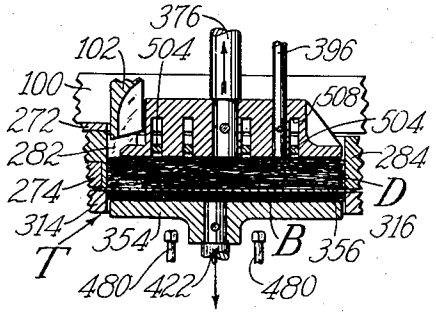
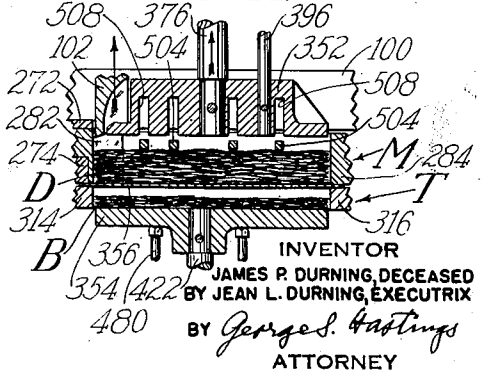


FIG. 22



INVENTOR
JAMES P. DURNING, DECEASED
BY JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

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FIG. 23

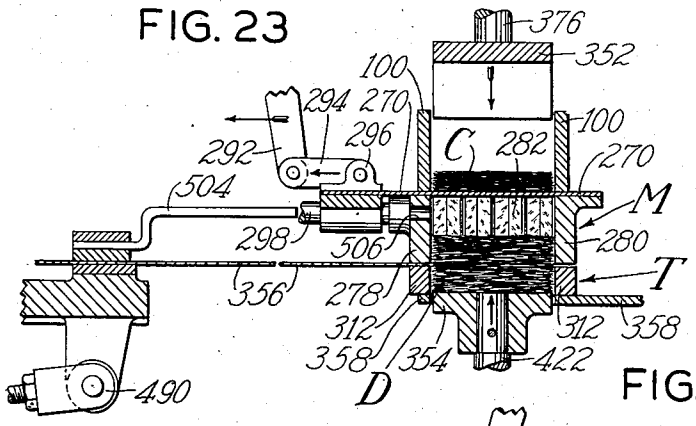


FIG. 24

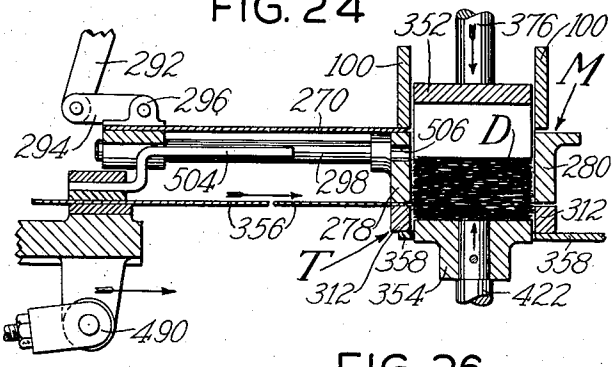


FIG. 25

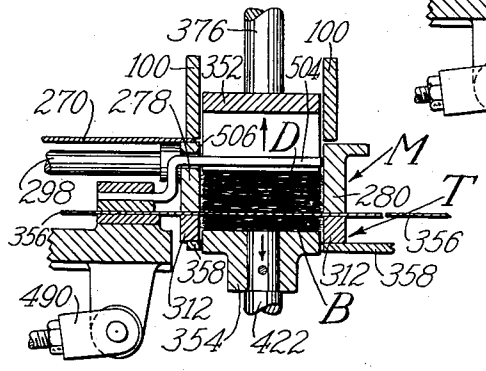


FIG. 26

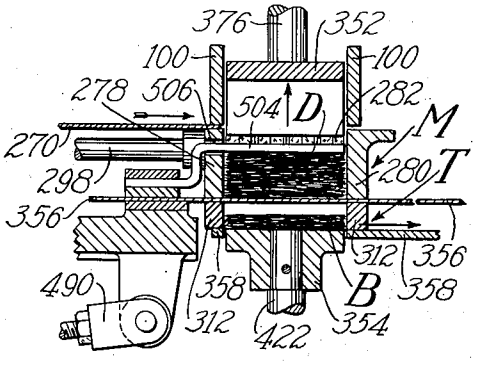
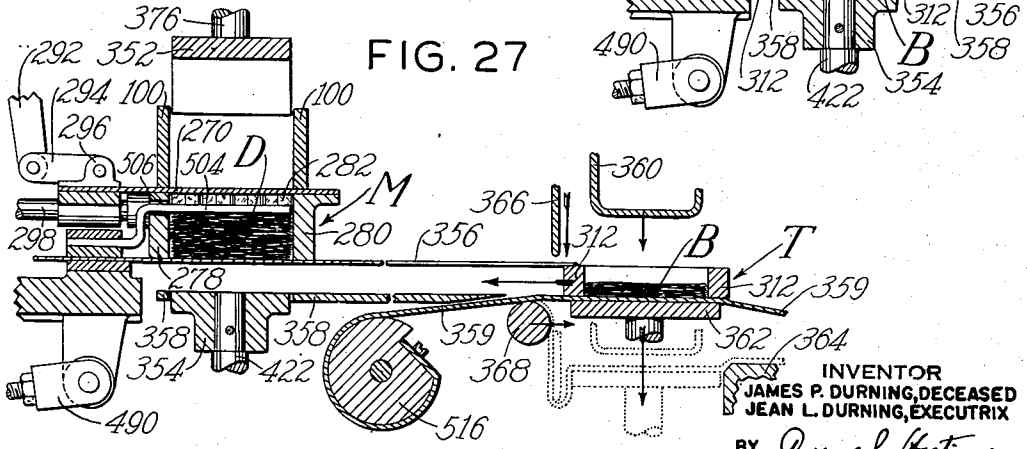


FIG. 27



INVENTOR
JAMES P. DURNING, DECEASED
JEAN L. DURNING, EXECUTRIX
BY George S. Hastings
ATTORNEY

Patented May 24, 1949 2,470,766

UNITED STATES PATENT OFFICE

2,470,766

CIGAR MACHINE

James P. Durning, deceased, late of St. Albans, N. Y., by Jean L. Durning, executrix, St. Albans, N. Y., assignor to International Cigar Machinery Company, a corporation of New Jersey

Application February 17, 1944, Serial No. 522,701

22 Claims. (Cl. 131—21)

1

This invention relates to cigar machines, more particularly to cigar machines of the type wherein bunch lengths severed from a continuous layer of long filler tobacco are superimposed to form a vertical column and bunch charges are separated from the column and transferred to bunch rolling position. Heretofore cigar machines of this type employed an oscillatory cutter for separating the bunch charge from the vertical column. In the operation of cigar machines equipped with an oscillatory cutter for separating the bunch charge, the knife was worn out in a short time and had to be replaced.

One of the main objects of the invention is to employ a reciprocating knife which has a cutting edge on its forward end extending diagonally thereof, for separating bunch charges from the tobacco column when the knife is advanced horizontally through the column. The reciprocating knife of the present invention will last considerably longer. It has been found that when the knife has a cutting edge extending diagonally of the forward end thereof at an approximate angle of 45° or greater, that the bunch charge will be separated without disturbance of the column. With a cutting edge extending diagonally of the knife at an angle of 30° it was found that the bunch charge was pushed rearwardly during separation of the charge by the knife. Accordingly, it is preferable to provide the knife with a diagonal cutting edge at an angle in the neighborhood of 45° or greater.

Another object of the invention is to simplify the operation of certain machines of the vertical column type which elevated the vertical column into the open bottom of a charge transfer and then separated the charge filling the transfer from the column by an oscillating knife. To this end the bunch lengths are superimposed in a measuring chamber to form a vertical column and a hollow charge transfer is arranged below the chamber to receive the lower end of the column. After separation of the bunch charge filling the charge transfer from the remainder of the column by the reciprocating knife, the charge transfer is moved horizontally to advance the separated charge upon a bunch rolling apron which is then lowered while the charge is ejected from the transfer and a loop is formed in the apron at one side of the charge.

In connection with the improved knife construction, it is noted that the beveled portion of the cutting knife is on the side away from the charge transfer. Due to the thinness of the charge, it has been discovered there is not

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sufficient resilience or room for further compression in the charge to compensate for the thickness of the knife, so there is a tendency to push the charge to one side as well as unduly compress the same. On the other hand, the greater height of the column above the blade permits compensating for the thickness of the knife on this side of the blade, without difficulty. Thus the present arrangement eliminates an obscure but substantial source of disturbance to the charge.

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

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 filler feed exemplifying the invention;

Fig. 1A is a sectional plan view of the same, taken on line 1A—1A of Fig. 1;

Fig. 2 is an end elevation of the cross feed portion of the filler feed, taken from line 2—2 of Fig. 1, portions of the frames supporting the filler feed channel being broken away to expose the feed belt driving mechanism;

Fig. 3 is a sectional end elevation of the same, taken on line 3—3 of Fig. 1;

Fig. 4 is a sectional plan view of the cross feed taken on line 4—4 of Fig. 1;

Fig. 5 is a partial plan view of the cross feed, partly in section, illustrating the corrugated cutter and the measuring plunger in detail;

Fig. 6 is a detail plan view of the measuring chamber;

Fig. 7 is a plan view on an enlarged scale of the novel charge transfer and the straight horizontal cutter;

Fig. 8 is a side elevation on an enlarged scale of the drive control mechanism for the cross feed channel belts, taken on line 8—8 of Fig. 3;

Fig. 9 is a similar side elevation on an enlarged scale of the feed belt control mechanism illustrating the movements of said mechanism;

Fig. 10 is an end elevation on an enlarged scale illustrating the measuring platform and its operating mechanism in detail;

Fig. 11 is a side elevation of the same as seen from line 11—11 of Fig. 10;

Fig. 12 is a partial side elevation on an enlarged scale of the measuring platform oper-

ating mechanism with parts broken away to disclose the eccentric locking device;

Fig. 13 is a side elevation of the lower portion of the cigar machine cross feed, illustrating the drive as well as the cams and levers actuating the various mechanisms in said cross feed, taken on line 13—13 of Fig. 2;

Fig. 14 is a side elevation of the cam and levers actuating the measuring plunger and feed belts, taken on line 14—14 of Fig. 13;

Fig. 15 is a side elevation of the cam and levers controlling the movements of the corrugated cutter and charge guide plate, taken on line 15—15 of Fig. 13;

Fig. 16 is a side elevation of the cam and lever operating the measuring platform, taken on line 16—16 of Fig. 13;

Fig. 17 is a side elevation of the cam and levers actuating the horizontal knife and charge transfer taken on line 17—17 of Fig. 13;

Figs. 18 and 20 are sectional side elevations of the feed channel and measuring chamber illustrating the feeding and compressing of the tobacco filler stream in the feed channel and the building up of the filler column;

Fig. 19 is a detail sectional view of the measuring chamber subsequent to the severance of a bunch length section from the leading end of the filler stream;

Fig. 21 is a sectional side elevation illustrating the cutting of a thin charge off the bottom of the tobacco column in the measuring chamber;

Fig. 22 is also a sectional side elevation showing the cut charge ready to be moved by the charge transfer; and

Figs. 23 to 27 are sectional end elevations illustrating the successive steps and operations of building up a tobacco filler column in the measuring chamber, cutting a charge from the bottom of said column and transferring said charge on to a rolling apron of a cigar bunch making machine.

Referring to Figs. 1 and 4, it may be noted that the stemmed leaf tobacco is placed by an operator in the filler feed channel of the cross feed, with their lengths extending lengthwise of the channel, to form a continuous layer or stream of tobacco of proper thickness. Said feed channel is formed by a horizontal feed belt 30 and two vertical feed belts 32 and 34. Said belts are intermittently driven from a drum 68 on a shaft 36 and pulleys 78 and 80 driven from shaft 36, the latter being supported in suitable bearings of a supporting frame 38 secured to a bed plate 40 mounted on the main frame 42 of the machine. On shaft 36 is fastened a ratchet 44 which is driven intermittently by a pair of pawls 46 (Figs. 3, 8 and 9) pivoted upon a stud 48 on the upper end of an oscillating arm 50 loosely mounted on shaft 36. Arm 50 is connected by an adjustable rod 52 to a cam lever 54 (Figs. 2, 13 and 14) carrying a cam roller 56 engaging with a cam track 58 of a cam 60 mounted on the main cam shaft 62 which is supported by suitable bearings of the main frame 42. Cam shaft 62 carries a gear 64 (Figs. 2 and 13) which is driven from the main drive of the cigar machine (not shown). Cam lever 54 is loosely mounted on a supporting shaft 66 mounted in the main frame 42.

The horizontal feed belt 30, which forms the bottom of the tobacco feed channel and is driven by the drum 68 secured to the intermittently rotating shaft 36, is led over several suitable idler pulleys and a guide pulley 70 (Fig. 1) which is supported by an adjustable bearing to take up slack and secure the proper tension of said belt. Guide pulley 70 and its adjusting means are supported by a suitable bracket 72 attached to a member 74 which is mounted on frame 38 and supports a plate 76 (Figs. 1, 3 and 4). The plate 76 is secured to bracket 72 and member 74 and supports the upper run of belt 30 and thereby assures a straight and even bottom on the feed channel. The inner runs of the vertical feed belts 32 and 34 form the side walls of said channel.

Belts 32 and 34, as previously mentioned, are driven by rollers 78 and 80, respectively (Figs. 3 and 4). Roller 78 is secured on the upper end of a vertical shaft 82 which carries on its lower end a bevel gear 84 (Fig. 3) meshing with a bevel gear 86 which is secured to the drum 68. Roller 80 is similarly mounted on a vertical shaft 88 to the lower end of which is attached a bevel gear 90 meshing with a bevel gear 92 secured to the intermittently rotating shaft 36. Each vertical belt 32 and 34 runs over one of a pair of vertical rollers 94 (Fig. 1). Cover plates 96 and 98 are supported on the shafts of rollers 80, 94 and 78, 94, respectively, and the upper edges of belts 32 and 34 are guided by downwardly extending flanges on plates 96 and 98, respectively. As mentioned heretofore, the filler tobacco is placed in the filler feed channel to form a continuous layer or stream and the filler stream is advanced by the feed belts into an extension of the filler feed channel formed by two stationary side walls 100 wherein a corrugated cutter 102 severs a predetermined length from the leading end of the stream of filler tobacco. The construction of the walls 100 and the corrugated cutter 102 is hereinafter fully described.

This severed section of the tobacco stream should correspond to the length of cigar bunches to be produced, and not vary during the operation of the machine. To achieve this object, the feed belt drive mechanism shown in Figs. 8 and 9 is of a novel construction to eliminate all possible lost motion. In describing said drive mechanism, we may assume that one bunch length of the filler stream has been fed into the extension of the filler feed channel and oscillating arm 50 has come to a rest against an adjustable stop screw 104, position I, Fig. 8. Stop screw 104 is threaded into a flange of the member 74 and is adjusted to a position at which its inner end will stop the oscillating arm 50 at the end of each forward stroke thereof, thereby taking up all possible back lash.

The return stroke of arm 50 in the direction of the arrow in Fig. 8, as well as its forward stroke, is produced by the action of cam lever 54 upon connecting rod 52, as previously described. Shortly after starting on their return stroke with arm 50 the pawls 46 are lifted off the ratchet 44, at the dotted position II thereof shown in Fig. 9, and remain locked in this position while being carried by arm 50 to its rearmost position III shown in Fig. 9. The pawls 46 are interconnected at the ends thereof which are in front of pivot 48, by a pin 106 secured in a hole in one pawl and projecting into a slightly larger hole 108 in the other pawl. To the end of pin 106 projecting from hole 108 is attached one end of a tension spring 110 (Fig. 8). The other end of said spring is anchored to a stud 112 attached to arm 50. Thus the pawls 46 are held in engagement with ratchet 44 when arm 50 begins its rearward stroke. During the rearward stroke of the arm 50, the lifting of said pawls occurs when

the flattened portion 114 of a pin 116 secured in the pawl in which the pin 106 is also fastened, contacts and rides upon a roller 118 which projects into the path of said flattened portion 114. Roller 118 is pivoted to a stud 119 on one end of a double lever 120 loosely mounted on a stud 122 held in one side wall of supporting member 74. To the other end of double lever 120 is attached a tension spring 124 anchored to the same side wall of member 74. From the latter also protrudes a stop pin 125 against which the free end of double lever 120 is normally held by the tension spring 124. While pawls 46 are being lifted from ratchet 44, when the flattened portion 114 of pin 116 rides over the roller 118, a projection 126 on an extension 128 of the pawl carrying pin 116 engages underneath a shoulder 130 of a lock lug 132 and thereby holds the pawls in lifted position, so that said pawls do not slide upon or have any contact whatsoever with the now stationary ratchet during their return stroke with arm 50. Therefore less wear on the teeth of the ratchet and the pawls, which can cause improper or delayed engagement during the feeding action, and a much quieter operation of the machine is obtained. Lock lug 132 is pivoted to a stud 134 on arm 50. A compression spring 136 seated in a depression in the outer end of arm 50 keeps lug 132 and projection 126 in constant engagement in either locked or unlocked position. As previously mentioned, the lifted pawls 46 are carried by arm 50 to their rearmost position III, Fig. 9, where lock lug 132 contacts adjustable release screw 138, thereby compressing spring 136 and producing a slight movement of lock lug 132 which releases the projection 126 of the pawl from the shoulder 130 of lock lug 132. Thereupon the tension spring 110 pulls the pawls 46 downward toward ratchet 44 but engagement of the pawls with the ratchet is prevented at this point by a stationary control cam 140 upon whose periphery 142 the flattened portion 114 of pin 116 projecting from one of the pawls 46 rides while arm 50 swings forwardly from its rearmost position, as indicated by the arrow in Fig. 9. Therefore pawls 46 cannot engage with ratchet 44 and impart motion to the same until the flattened portion 114 riding on the periphery 142 of cam 140 has reached the end of said cam and are then pulled downwardly by tension spring 110. It is the distance from the point where the pawls drop into engagement with ratchet 44 to the point where the arm 50 contacts the stop screw 104, which determines the amount of feed, i. e., the length of tobacco filler forwarded by the channel belts 30, 32 and 34. In order to produce uniform cigar bunches it is of utmost importance that the length of each filler charge be uniform and even at all times. For this reason a slot 146 is provided at the end of cam 140 and a hardened finger 144 is pivotally mounted in said slot with its outer corner 148 protruding from the edge of said cam, thus assuring a sharp drop when the flattened portion 114 of pin 116 rides over finger 144. To minimize lost motion due to slippage of the pawls when dropping on ratchet 44, one pawl is a distance of ½ tooth shorter than the other, giving the assurance that in any case one of the pawls will fall immediately into engagement with a corresponding tooth of the ratchet 44. It may be noted that the provision of a sharp and solid point at the edge of the stationary cam 140 instead of the finger 144 would cause considerable damage in case lock lug 132 should fail to lock the pawls in their lifted

position during their return stroke. For this reason a compression spring 150 (Figs. 8 and 9) is employed to hold finger 144 in its operative position. The latter is normally pressed by spring 150 against a stop pin 152, but should the pawls return in an unlocked or down position, the projecting flattened portion 114 of pin 116 would simply press finger 144 out of the way and ride up on an incline 154 provided for this purpose at the edge of cam 140 and slide backward on the periphery 142 of the same.

In order to provide means for changing the length of filler stream fed during each cycle, and also to permit the filler feed to be accurately set to advance the exact length of filler tobacco required for the cigar bunch, the stationary cam 140 is equipped with a scale and pivotally mounted on shaft 36. An indicator finger 156 (Figs. 8 and 9) is mounted on supporting frame 38, and cam 140 may be moved to the desired position upon loosening lock screw 158 which is threaded into said cam and passes through a slot 160 in frame 38. Thus the finger 156 will designate on the scale on cam 140 the length of filler which is being fed in each cycle.

The release and stop screw 138 (Figs. 8 and 9) which trips lock lug 132 at the rearmost position of arm 50 is secured in the hub of a control member 162 loosely mounted on a stud 164 (Figs. 3, 8 and 9) held by frame 38. Member 162 is furthermore equipped with a resetter finger 166, a stop lug 168 and a lock lug 170. To the latter is attached a lock plate 172 which is held in engagement with a lock arm 174 attached to a stud 178 loosely supported by a bushing 176 held by frame 38. On the stud 178 is also secured a control arm 180 (Figs. 1 and 3) to which is pivoted a control link 182, the operation of which will be described later on. Every time link 182 moves in an upward direction it will cause control arm 180 and lock arm 174 to move upward also, thereby effecting a disengagement of the latter from lock plate 172. The engagement of arm 174 with lock plate 172 normally holds the release and stop screw 138 in an ineffective position, as shown in Fig. 8. Disengagement of arm 174 from plate 172 however, permits a tension spring 184 connecting resetter finger 166 and stud 178, to swing member 162 and bring screw 138 into the path of the oncoming lock lug 132 on arm 50. A stop pin 186 held by frame 38 engages the stop lug 168 and thereby limits the extent to which the member 162 will be displaced by spring 184. The arm 50, when reaching its rearmost position, then presses the free end of lock lug 132 against said stop screw 138 and the release of the lifted pawls 46 is effected, as previously described. After the feeding of each length of filler, the release or stop screw 138 is returned to its ineffective position by a resetter arm 188 which projects from the hub of arm 50 and oscillates with the latter. On its free end, arm 188 carries a stop screw 190 which during the forward stroke of arms 50 and 188, engages with the free end of the resetter finger 166 and moves the same upward, thereby producing an upward movement of lock lug 170 and its plate 172. A tension spring 192 (Figs. 1 and 3) connected to control arm 180 acts to maintain lock arm 174 in its downward position to reengage the lock plate 172 when the finger 166 is disengaged by stop screw 190.

As mentioned heretofore, the tobacco filler stream F is advanced intermittently into the

extension of the filler feed channel for severance of bunch lengths or so called charges. The cutting of said charges is performed by the vertically reciprocating corrugated cutter 102 which is mounted on a vertically movable slide 194, guided in a dove-tailed channel 196 (Fig. 1A) of a pedestal 200 secured to the cross feed supporting member 74. Vertical slide 194 is actuated through a link 202 by an arm 204 loosely mounted on a stud 206 held by pedestal 200. Arm 204 is oscillated through an adjustable connecting rod 208 by a cam lever 210 carrying a cam roller 212 engaging with a track 214 of cam 216 (Figs. 2, 13 and 15) mounted on the main cam shaft 62. Cam lever 210 is loosely mounted on a supporting shaft 218 held by the main frame 42. On a stud 220 on arm 204 by which connecting rod 208 is pivoted to said arm, is also pivotally mounted one end of a link 222 (Figs. 1A and 3). The other end of said link is pivoted to a stud 224 (Fig. 18) to which are also pivoted links 226 and 228, the latter forming a toggle which is actuated by link 222. Link 226 is pivoted to a stud 230 held by a stationary lug 232 of a bracket 234 of pedestal 200. Link 228 is pivoted to a stud 236 held by a collar 238 adjustably secured to a vertical shaft 240 slidably mounted in suitable bearing lugs of bracket 234 and pedestal 200 (Figs. 1A and 18).

To the lower end of said vertical shaft 240 is attached a horizontal compressor foot 242 which extends along the filler feed channel. To foot 242 is secured a vertical guide shaft 244 projecting through a guide hub 246 of the pedestal 200. To compressor foot 242 is furthermore hinged an extension plate 248, the free end of which is connected by a link 250 to a pressure arm 252 pivoted to a stud 254 held by a pair of suitable lugs 256 projecting from pedestal 200. Extension plate 248 is actuated and controlled by a member 258, the lower end of which is pivoted to a bracket 260 mounted on compressor foot 242. The upper portion of member 258 protrudes through the pressure arm 252 and is equipped with a bottom washer 262 threaded thereon and a loose top washer 264 which is held in contact with arm 252 by a compression spring 266. The tension of spring 266 may be adjusted by a pair of lock nuts 268 on the upper threaded portion of member 258. The purpose of the compressor foot 242 and its extension plate 248 is to intermittently compress the tobacco stream in the filler feed channel and hold the tobacco leaves firm and flat while a bunch length or charge is cut off by the corrugated cutter 102. The timing is such that when the cutter 102 is moved downward by slide 194 in the direction of the arrow in Fig. 18, the compressor foot 242, which through vertical shaft 240 and the disclosed toggle arrangement and link 222 is connected to the slide operating arm 204, also moves downward and the tobacco stream underneath said compressor foot and its hinged extension is pressed flat and held firmly in position during the cutting action of the corrugated cutter 102 (Fig. 20). The combined length of the compressor foot and extension is at least twice the length of the length of the charge cut off from the filler stream so that the filler stream, while being advanced into the extension of the filler feed channel formed by side guides 100 to be cut off by the cutter, is compressed twice. Therefore the leading end of the filler stream will not be disrupted, as by telescoping, when advanced on to a charge supporting plate 270 which forms the bottom of the extension of the filler feed channel. The cutting of the charge from the filler stream by the corrugated cutter is effected by the coaction thereof with a stationary correspondingly corrugated cutter or ledger plate 272 having indentations 273 (Fig. 3) and forming a bridge between the horizontal feed belt 30 and the horizontal charge supporting plate 270. Ledger plate 272 is mounted on a bridge bracket 274 attached to the end of the cross feed supporting member 74. In order to assure that all filler tobacco placed by the operator into the feeding channel formed by belts 30, 32 and 34 is properly guided underneath the compressor foot 242 and its hinged extension 248, a pair of guide brackets 276 are provided, which are fastened to plates 96 and 98, respectively, and together with said hinged extension 248 when it is in its upper position, form a funnel which smoothly directs any projecting piece of the advancing tobacco stream underneath the compressor foot 242 without causing obstructions or clogging.

As the corrugated cutter 102 descends during the cutting operation, the charge supporting plate 270 is quickly withdrawn. The cutter then severs the charge C from the filler stream and said charge drops into a stationary measuring chamber M (Fig. 6) consisting of a pair of side walls 278 and 280 underlying the walls 100, and one end wall 282, which has a corrugated inner face provided with indentations 283 (Fig. 6) and a straight end wall 284. The latter is supported on a lug 286 (Figs. 1, 4 and 6) of a stationary bearing bracket 288 attached to a bracket 290 (Fig. 1) secured to bed plate 40. The corrugated end wall 282 is supported as shown in Figs. 18 and 20 on a ledge of bridge bracket 274, mentioned heretofore. The corrugated face of end wall 282 conforms to the corrugation of the ledger plate 272 and serves the purpose of maintaining alignment of the corrugated ends of the cut charge and preventing their disturbance while being deposited into measuring chamber M, and holds said corrugated ends during the cutting operation of the horizontal filler knife.

To withdraw the charge supporting plate 270 from the position it occupies in the space between the top of the measuring chamber M and the side walls 100 and the space between the bottom of the stationary ledger plate 272 and end wall 282, it is actuated from an arm 292 (Figs. 1 and 2) which, through a link 294 is connected to a lug 296 of plate 270. On a stationary guide rod 298 secured in and projecting from a suitable hub on side wall 278 of the measuring chamber M, is slidably mounted the lug 296 to which plate 270 is fastened, thus guiding the charge supporting plate 270 in its horizontal reciprocating motion. Arm 292 is pivoted to a stud 300 held by a suitable bearing lug of pedestal 200 (Figs. 1 and 2). From the hub of arm 292 projects an operating lever 302 which is connected by means of an adjustable rod 304 to a cam lever 306 (Figs. 1, 2, 13 and 15) carrying a cam roller 308 engaging with a cam track 310 of the cam 216. Cam lever 306 is loosely mounted on the supporting shaft 66.

Underneath and exactly in line with the above mentioned measuring chamber M is located a horizontally movable charge transfer T (Fig. 7) consisting of two side walls 312, an end wall 314, secured to walls 312 and another end wall formed on a lug 316 to which said side walls are secured,

Lug 316 projects from a sleeve 318 slidably supported by a horizontal shaft 320 held by the bearing bracket 288 mentioned heretofore. The wall 314 at the other end of the charge transfer T is slidably supported in a groove 321 of the cross feed supporting member 74 by a bottom guide rail 322 along which it slides into a channel formed by a side guide rail 324, top guide rail 326 and rail 322. A lug 328 on the bottom of sleeve 318 (Figs. 1, 2 and 4) is connected by a link 330 to an oscillating arm 332 loosely mounted on a shaft 334 (Figs. 2 and 13) supported by a pair of suitable bearing brackets 336 attached to the end of bed plate 40. An actuating lever 338 on the hub of arm 332 is connected by an adjustable rod 340 to a cam lever 342 carrying a cam roller 344 engaging with a track 346 of a cam 348 (Fig. 17) mounted on the main cam shaft 62. Cam lever 342 is loosely mounted on the supporting shaft 216. Lug 316 of sleeve 318 is provided with an adjustable stop screw 350 which engages the stationary bearing bracket 288 when the charge transfer T is in its rearmost position (Fig. 7), for the purpose of properly aligning said charge transfer with the measuring chamber M. While the corrugated cutter 102 descends to cut a charge, a measuring plunger 352 also moves downwardly but trails slightly behind said descending cutter until the latter has severed the charge C from the filler stream F (Figs. 18 and 19). The cutter then dwells in the position at which it has completed the severing of the charge (Fig. 19) while the measuring plunger continues descending toward the tobacco column D, which represents an accumulation of several charges. While the corrugated cutter and measuring plunger are descending together, a measuring platform 354, which closes the bottom opening of the charge transfer T but is slightly smaller than said opening to have a sliding fit therein, ascends into said charge transfer and moves the tobacco column D which rests on said platform, slightly upward. The charge C cut from the filler stream F drops on top of said column D, and the plunger 352 continues to descend. When the measuring plunger comes in contact with said tobacco column, the measuring platform 354 being in its uppermost position and inside of the charge transfer, it continues its downward movement for a short distance to effect compressing of the tobacco column D in measuring chamber M and the charge transfer T as illustrated in Figs. 20 and 24. After the measuring plunger has come to rest with the compacted column D between the latter and the measuring platform 354, a metal knife or cutting plate 356, whose cutting edge 356a (Figs 4 and 7) may extend diagonally thereof at any suitable angle such as 45° or greater, enters the space 357 (Figs. 18 and 20) between the bottom of the measuring chamber and the top of the charge transfer and cuts a bunch charge B from the compacted tobacco column D (Figs. 21 and 25). A suitable thickness of knife 356 has been found to be $\frac{1}{32}$ of an inch. The flat horizontal surfaces formed on the upper edges of the walls 312, 314, and 316 of the charge transfer T serve as a ledger plate for knife 356 during the severance of bunch charge B. The height or thickness of the bunch charge is determined by the vertical distance between the measuring platform 354 and the knife 356. The spacing of the platform from the knife may be regulated to correspond with the desired thickness of the bunch charge.

After the charge B is cut from the tobacco column D, the measuring platform 354 again descends and stops at a position aligned with the bottom of the charge transfer T and the top of a stationary bridge plate 358, as illustrated in Figs. 22 and 26, whereby the compression of the charge is relieved. Plate 358 has a slot in which the platform has a sliding fit and moves upwardly into the measuring chamber. The charge B is then moved by said transfer in the direction of the arrow in Fig. 26, across the bridge plate 358 and on to the rolling apron 359 (Fig. 27) of the bunch rolling mechanism of the cigar machine. It may be noted that the diagonal arrangement of the cutting edge of the knife 356 is such that in severing the bunch charge the knife moves forwardly to a position overlying the path of the charge transfer as the latter is advanced on to the rolling apron, as shown in Fig. 27, so that the foremost corner of its cutting edge will rest on the rear side of the charge transfer and thereby prevent flexing of the knife which might interfere with the return movement of the charge transfer.

Charge B is ejected from the charge transfer T by a vertically reciprocable ejector 360 (Figs. 2, 4 and 27) which presses the charge against the portion of the apron overlying platform 362 while the latter is lowered together with apron 359, to a position aligned with the rolling table 364 of the bunch rolling mechanism of the machine, this position being illustrated in dotted lines in Fig. 27.

A loop or pocket former 366, which is connected to and descends with the ejector 360, is employed for the purpose of stretching the apron smoothly over the platform 362 and forming a loop at one side thereof in the manner shown in dotted lines in Fig. 27. The ejector 360 and loop former 366 then ascend and rolling pin 368 advances in the direction of the arrow shown in Fig. 27 and rolls the charge B upon itself and then within a binder to form a cigar bunch in the customary manner. As soon as plunger 360 and loop former 366 have reached their uppermost position, the charge transfer T returns in the direction of the arrow to its original position, aligned again with the stationary measuring chamber M. Thereupon the horizontal knife 356 withdraws to a position wherein its foremost corner is between the rear walls of the measuring chamber and charge transfer, and the remaining portion of the tobacco column in measuring chamber M drops into the charge transfer now positioned below the chamber. While the charge transfer T is moving its charge B on to the rolling apron 359, the charge supporting plate 270 moves in again, covering the measuring chamber M and ready to support the advancing end of the tobacco filler stream from which a new charge is to be cut and be deposited on the top of the tobacco column D in the measuring chamber M, after withdrawal of plate 270.

The stationary side walls 100 of the filler feed channel extension are provided at each end with suitable flanges. The flanges at one end thereof are attached to the cross feed supporting member 74 while the flanges at the other end are secured to a supporting bar 370 fastened to the lug 286 of the measuring chamber M. The free end of the compressor foot 242 is cut out to provide corrugations 372 which conform to the shape of cutter 102. Thus the filler stream F is compressed and held down adjacent the cutting edge of the cutter 102 and the corrugations 372 also act as a scraper

for any particles of tobacco which might cling to the cutter 102 while it is ascending. One end of the measuring plunger 352 is provided with corrugations 374 (Fig. 5) which fit the corrugations of cutter 102 and fit into the corrugations of end wall 282 of the measuring chamber M, whereby not only the center portion of the tobacco column D but one of its corrugated ends as well are compacted by the measuring plunger.

The measuring plunger 352 is attached to the lower end of a vertical shaft 376 (Figs. 1 and 2), slidably supported by means of a pair of suitable bearing brackets 378 and 380, both of which are rigidly attached to the pedestal 200. Shaft 376 is reciprocated by an oscillating forked lever 382 carrying a pair of rollers 384 engaging with a collar 386 loosely mounted on shaft 376. To the latter is adjustably clamped a lug 388 against which the collar 386 is held by a compression spring 390 seated against a collar 392 fastened to shaft 376. In order to prevent turning of the measuring plunger 352, it is provided with a vertical guide rod 396 projecting from said plunger and engaging with a guide sleeve 398 held by a suitable lug extending from bracket 378. The lever 382 is fastened on a horizontal shaft 400 (Figs. 1, 2 and 3) supported by suitable bearings in pedestal 200. Shaft 400 carries a rocker arm 402 which is connected by an adjustable rod 404 to a cam lever 406 (Figs. 2, 13 and 14), having the shape of a bell crank and carrying a cam roller 408 engaging with a cam track 410 of the cam 60 on cam shaft 62. Cam lever 406 is loosely mounted on the supporting shaft 66. The downward movement of the measuring plunger 352 is effected by the downward motion of the oscillating arm 382 which, by means of rollers 384 depresses the collar 386 and through spring 390 and collar 392, imparts downward motion to shaft 376. The tobacco column D in the measuring chamber M offers resistance to the descending measuring plunger, but arm 382 continues its downward stroke for a short distance, thereby compressing spring 390 and causing collar 386 to move away from lug 388. In this manner sufficient pressure is exerted through compression spring 390 and collar 392 to effect compaction of the tobacco column D in the measuring chamber M and charge transfer T.

In order to effectively control the height of the tobacco column D in the measuring chamber M, which normally consists of several charges, the lug 388 mounted on shaft 376 carries an adjustable trip screw 412 which normally, during the downward movement of shaft 376 and plunger 352, engages the free end 414 of a double lever 416 pivoted to a stud 418 held by pedestal 200. The other end 420 of double lever 416 is connected with the feed belt control link 182. Therefore, when trip screw 412 contacts end 414 of lever 416 and presses the same downward, the other end 420 of said lever moves upward and through link 182 causes an upward motion of control arm 180 and lock arm 174. Since, as previously described, the upward movement of the latter permits the stop screw 138 to move into the path of lug 132 and effect a release of the lifted pawls 46, the feed belt drive control is tripped and a new charge is fed in the following cycle of the machine. It will be noted that the control arm 180 and lock arm 174 are moved downwardly by spring 192 when the trip screw 412 moves away from the lever 416, to permit arm 174 to reengage lock plate 172, when the latter is returned to its initial position by engagement of stop screw 190 with arm 166. In case the tobacco column D in the measuring chamber M is too high, that is too much tobacco has accumulated in said chamber, the measuring plunger cannot enter very far into said chamber and plunger 352 and shaft 376 come to rest before trip screw 412 could contact end 414 of double lever 416, thus no tripping can take place and control arm 180 and lock arm 174 remain in their position and no release of pawls 46 is effected. Thus the pawls remain lifted through the following cycle. Therefore the feeding action of the feed belts 30, 32 and 34 is interrupted and no charge is fed during the following cycle of the machine.

The mechanism for regulating the position of the measuring platform 354 (Figs. 2, 10, 11 and 12) to control the amount of tobacco in the bunch charge B cut by the horizontal knife 356 from the bottom of the tobacco column, will now be described. For this purpose platform 354 is mounted on a vertical shaft 422 slidably supported in a suitable bearing bracket 424 attached to the slide supporting bracket 230. The lower end of shaft 422 is threaded and provided with an adjusting nut 426 and lock nut 428, respectively. On the lower portion of shaft 422 above nut 426 is loosely mounted a lug 430 on whose free end is pivoted a lifter arm 432 which is loosely mounted on an eccentric portion 434 of a shaft 436 supported by a bearing bracket 438 and a bearing plate 440, the latter being attached to the former. Bracket 438 is rigidly secured to the lower side of bed plate 40. Shaft 436 carries a gear 442 engaging with a gear segment 444 having a split hub secured by clamp screw 446 to a horizontal shaft 448 supported by bearing plate 440 and a bearing lug 450 fastened to bracket 438. Gear segment 444 is provided with an extension lug 452 which is connected by an adjustable rod 454 to a cam lever 456 (Figs. 2, 13 and 16) carrying a roller 458 engaging with a track 460 of a cam 462 mounted on the main cam shaft 62. Cam lever 456 is loosely mounted on the supporting shaft 66. The upper half of shaft 422 is of slightly greater diameter and provided with a threaded portion 464 (Fig. 10) on which is threaded an adjusting member 466 equipped with a fluted portion 468. With the flutes of said portion 468 engages a spring finger 470 which is held by a lug 472 adjustably clamped to the upper portion of shaft 422. On the lower half of the latter is loosely mounted a sleeve 474 which rests on lug 430 and is vertically guided and slidably supported by a bushing 476 (Fig. 10). Bushing 476 is held in a suitable bearing flange 478 mounted in and protruding through a suitable opening in bed plate 40. The lifting of the measuring platform 354 is effected by cam lever 456 which through rod 454 acts upon the gear segment 444, swinging the same in the direction of the arrow in Fig. 10, to rotate gear 442 on shaft 436. The arc of movement of gear segment 444 is sufficient to turn gear 442, 180°. This causes the eccentric 434 also to move 180°, thereby raising the lifter arm 432 which has a collar loosely mounted on eccentric 434 of shaft 436. The lifting of arm 432 causes the lug 430 to slide upward on the vertical shaft 422. Since sleeve 474 rests on lug 430 it is also moved upward and slides on shaft 422 until the upper end of said sleeve contacts the lower end of the adjusting member 466. Since the latter is threaded to shaft 422, the entire shaft and the platform 354 secured thereon is

raised. The employment of a gear segment, gear and eccentric to accomplish this movement has the great advantage of reducing any possible wear upon the lifting mechanism, and in case such wear should appear it would have no material effect upon the setting and movement of the measuring platform 354. Another advantage by using this construction lies in the great stability and rigidness which is of supreme importance since due to the compressing action of table 354 upon the tobacco column, considerable pressure is forced upon said mechanism. The setting of the measuring platform, i. e., the distance the same is raised, which in turn determines the thickness of the cut bunch charge, is accomplished by turning the adjusting member 466 clockwise or anti-clockwise. This adjustment decreases or increases the gap between the lower end of said member and the upper end of sleeve 474, thus causing an earlier and longer upward movement of shaft 422 and platform 354 or a later and shorter movement of the same. An earlier and longer upward movement of shaft 422 raises platform 354 to a higher position within the charge transfer T resulting in a cutting of a thinner bunch charge from the tobacco column D, and a later and shorter upward movement of shaft 422 would result in a thicker charge. The downward movement of the measuring table 354 and shaft 422 is checked by a pair of stop screws 480 which are arranged to contact the lower side of said measuring table while sleeve 474 continues moving downwardly and away from member 466 during the downward movement of lug 430 resulting from the downward movement of arm 432. By adjusting the screws 480 alignment of the upper face of table 354 with the upper face of the stationary bridge plate 358 at the end of the downward movement of arm 432 may be obtained. Plate 358 is supported by a suitable lug 482 projecting from the bearing bracket 424. Stop screws 480 are held by a pair of lugs 484 also formed on said bearing bracket.

The knife 356, which cuts the charge B from the tobacco column D, is adjustably mounted on a horizontal slide 486 (Figs. 1 and 2), which is supported and guided by a dove-tailed channel 488 (Fig. 1) in the upper portion of the bracket 290. The slide 486 is connected by an adjustable connecting rod 490 to one arm 492 of a bell crank loosely mounted on the horizontal shaft 334 (Figs. 2 and 13). The other arm 494 of this bell crank is connected by an adjustable rod 496 to a cam lever 498 carrying a roller 500 engaging with a cam track 502 provided in cam 348 (Fig. 17). Cam lever 498 is loosely mounted on the shaft 66. In order to limit the expansion of the compacted tobacco column D in the measuring chamber M after the knife 356 has cut a charge B from the bottom and measuring plunger 352 has started to move upward to release the compression of said column D, the portion of the slide 486 in which the knife 356 is secured is equipped with a number of retainer fingers 504 which travel with the horizontally reciprocating knife and enter the measuring chamber M through corresponding ports 506 in the side wall 276. The measuring plunger 352 is also provided with corresponding slots 508 (Figs. 1 and 18) so that the retainer fingers 504 enter above the top of the tobacco column D which at that moment is compacted by the measuring plunger 352, as illustrated in Figs. 21 and 25. When the plunger 352 starts to move upward and releases said column, the latter cannot expand further than fingers 504 (Figs. 22 and 26), thus preventing any possible interference of the tobacco column with the incoming charge supporting plate 270 which, as soon as plunger 352 passes, moves in the direction of the arrow in Fig. 26 and closes the top of the measuring chamber M (Fig. 27), ready to receive and support a new bunch length.

Ejector 360 which ejects the charge B from the charge transfer T, as previously described, is mounted on an arm 510 which also carries the loop former 366. Arm 510 is fastened to a vertically reciprocating shaft 512 (Figs. 2 and 4) actuated in properly timed relation from the drive of the bunch rolling mechanism of the machine (not shown) which also actuates the vertically reciprocating platform 362. The rolling pin arm 514 and the rolling apron drum 516 of course are actuated and driven from the same source.

What is claimed is:

1. In a cigar machine, the combination with mechanism for superimposing bunch lengths of long filler tobacco to form a vertical column of laminated cigar bunch lengths wherein the filler tobacco is arranged horizontally, of means for compacting said tobacco column vertically, a horizontal knife having a cutting edge on its forward end extending diagonally thereof, a reciprocable support movable horizontally toward and away from said column, said knife having its rear end fastened to said support and projecting forwardly from said support in a horizontal plane spaced from one end of the tobacco column a distance considerably less than the horizontal width and length of said column and to traverse said column of tobacco when said support is moved toward the column and thereby separate a thin bunch charge from said one end of the compacted tobacco column, the cutting edge of said knife being beveled and extending diagonally thereof at an angle of approximately 45 degrees or more and the beveled side of said cutting edge being on the side of the knife which is out of contact with said bunch charge.

2. In a cigar machine, the combination with means for superimposing bunch lengths of long filler tobacco in a vertical column wherein the filler tobacco is arranged horizontally and compacting said column vertically, said means including a measuring chamber into the upper end of which the bunch lengths are inserted by said means, a hollow charge transfer underlying the lower end of said chamber and adapted to admit the lower end of the tobacco column, a reciprocable support movable horizontally toward and away from said column, a horizontal knife having its rear end fastened to said support and a beveled cutting edge on its forward end extending diagonally thereof at an angle of approximately 45 degrees or greater, the beveled side of said cutting edge being on the side of the knife which is remote from the charge transfer and means for moving said support toward the column to cause the forward end of the knife to enter between the charge transfer and measuring chamber and thereby separate a bunch charge from the lower end of the column, and a member for supporting the lower end of said column at a predetermined level in said charge transfer and in a horizontal plane spaced from the plane of said knife a distance considerably less than the horizontal width and length of said

column whereby a thin bunch charge will be separated from the column by said knife.

3. In a cigar machine, the combination with means for superimposing bunch lengths in a vertical column and compacting said column vertically, said means including a measuring chamber into the upper end of which the bunch lengths are inserted by said means, a hollow charge transfer underlying the lower end of said chamber and adapted to admit the lower end of the tobacco column, a reciprocable support movable horizontally toward and away from said column, a horizontal knife having its rear end fastened to said support and a cutting edge on its forward end extending diagonally thereof, means for moving said support toward the column to cause the forward end of the knife to enter between the charge transfer and measuring chamber and thereby separate a bunch charge from the lower end of the column, and means for moving said charge transfer horizontally to a predetermined position at which the charge is ejected and returning said transfer to initial position while the column is supported by said knife, the means for moving the knife support operating to advance the cutting edge of said knife into a position wherein it overlies the charge transfer at the charge-ejecting position whereby said transfer may be returned to initial position without interference with said knife.

4. In a cigar machine, the combination with means for separating bunch lengths from a continuous layer of filler tobacco and superimposing them to form a vertical column of bunch lengths, of a hollow charge transfer arranged to admit the lower end of said column, a member movable upwardly into said charge transfer to support the lower end of said column, a device for separating the portion of said column within said charge transfer from the remainder of the column, mechanism for moving the charge transfer horizontally with the separated charge therein to advance the same to a predetermined position and means for withdrawing said member from said charge transfer before the latter is moved horizontally toward said predetermined position.

5. In a cigar machine, the combination with means for separating bunch lengths from a continuous layer of filler tobacco and superimposing them to form a vertical column of bunch lengths, of a hollow charge transfer arranged to admit the lower end of said column, a device for separating the portion of said column within said charge transfer from the remainder of the column, and mechanism for moving the charge transfer horizontally with the separated charge therein to advance the same to a predetermined position, said device including a support movable horizontally toward and away from said column, a horizontal knife having a cutting edge extending diagonally across the forward edge thereof at an angle of approximately 45 degrees, the rear end of said knife being fastened to said support and the knife projecting forwardly from said support to separate the portion of the column filling the charge transfer from the remainder of the column when said support is moved toward the column, and means for moving said support to advance said knife across the upper face of said charge transfer to a position wherein its foremost corner overlies the charge transfer when the latter is in said predetermined position.

6. In a cigar machine, the combination with a vertical measuring chamber adapted to confine a vertical column of superposed bunch lengths, of a charge supporting member overlying the top of said chamber, means for intermittently feeding a continuous layer of long filler tobacco to advance its leading end upon said charge supporting member, a stationary ledger plate disposed adjacent said charge supporting member, a vertically movable knife supported above said ledger plate and coacting therewith to sever a bunch length from the leading end of the layer of filler advanced upon said charge supporting member, and mechanism for moving said knife downwardly to coact with said ledger plate and sever bunch lengths from said tobacco layer, and withdraw said charge supporting member to permit the severed bunch lengths to drop into the measuring chamber and thereby form a vertical column of superposed bunch lengths.

7. In a cigar machine, the combination with a vertical measuring chamber adapted to confine a vertical column of superposed bunch lengths, of a charge supporting plate covering the top of said chamber, means for intermittently feeding a continuous layer of long filler tobacco to advance its leading end upon said charge supporting plate, a stationary ledger plate disposed adjacent said charge supporting plate, a vertically movable knife supported above said ledger plate and coacting therewith to sever a bunch length from the leading end of the layer of filler advanced upon said charge supporting plate, mechanism for moving said knife downwardly to coact with said ledger plate and sever bunch lengths from said tobacco layer, and withdraw said charge supporting plate to permit the severed bunch lengths to drop into the measuring chamber and thereby form a vertical column of superposed bunch lengths, a hollow charge transfer underlying said measuring chamber and adapted to admit the lower end of said vertical tobacco column therein, a vertically movable measuring platform normally occupying a position within said charge transfer to support said tobacco column, and a vertically movable member adapted to engage the top of said tobacco column when said charge supporting plate is withdrawn and compact the column against said measuring platform.

8. In a cigar machine, the combination with a vertical measuring chamber adapted to confine a vertical column of superposed bunch lengths, of a charge supporting plate covering the top of said chamber, means for intermittently feeding a continuous layer of long filler tobacco to advance its leading end upon said charge supporting plate, a stationary ledger plate disposed adjacent said charge supporting plate, a vertically movable knife supported above said ledger plate and coacting therewith to sever a bunch length from the leading end of the layer of filler advanced upon said charge supporting plate, mechanism for moving said knife downwardly to coact with said ledger plate and sever bunch lengths from said tobacco layer, and withdraw said charge supporting plate to permit the severed bunch lengths to drop into the measuring chamber and thereby form a vertical column of superposed bunch lengths, a hollow charge transfer underlying said measuring chamber and adapted to admit the lower end of said vertical tobacco column therein, a vertically movable measuring platform normally occupying a position within said charge transfer to support said tobacco column, a vertically movable member adapted to engage the top

of said tobacco column when said charge supporting plate is withdrawn and compact the column against said measuring platform, a device for separating a bunch charge from the portion of said column filling said charge transfer while the column is compacted between said platform and member, means for lowering said platform with the separated bunch charge to a position wherein the top of the platform is aligned with the bottom of the transfer, and means for moving the transfer horizontally with the separated bunch charge to a predetermined position after the platform has been lowered.

9. In a cigar machine, the combination with a vertical measuring chamber adapted to confine a vertical column of superposed bunch lengths, of a charge supporting plate covering the top of said chamber, means for intermittently feeding a continuous layer of long filler tobacco to advance its leading end upon said charge supporting plate, a stationary ledger plate disposed adjacent said charge supporting plate, a vertically movable knife supported above said ledger plate and coacting therewith to sever a bunch length from the leading end of the layer of filler advanced upon said charge supporting plate, mechanism for moving said knife downwardly to coact with said ledger plate and sever bunch lengths from said tobacco layer, and withdraw said charge supporting plate to permit the severed bunch lengths to drop into the measuring chamber and thereby form a vertical column of superposed bunch lengths, a device supporting the lower end of the tobacco column formed in said chamber, a vertically movable member adapted to engage the top of said column after the charge supporting plate is withdrawn and compact the column against said device, and means yieldingly connected to said member for moving it against the top of the column, and mechanism controlled by the position of said member for interrupting the operation of the means for feeding the layer of filler tobacco in the event of an oversupply of tobacco in said column.

10. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of bunch lengths, a hollow charge transfer arranged to admit the lower end of said column therein, a vertically movable measuring platform normally occupying a position within said transfer to support the column, a vertically movable member adapted to engage the top of said column and compact it against said measuring platform, a horizontal knife, a device for moving said knife horizontally across the top of said transfer to separate the portion of the compacted column within said transfer from the remainder of the column and mechanism for lowering said platform after the separation by said knife of the portion of the column in said transfer to relieve the compression of said separated column portion.

11. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of bunch lengths, a hollow charge transfer arranged to admit the lower end of said column therein, a vertically movable measuring platform normally occupying a position within said transfer to support the column, a vertically movable member adapted to engage the top of said column and compact it against said measuring platform, a horizontal knife, a device for moving said knife horizontally across the top of said transfer to separate the portion of the compacted column within said transfer from the remainder of the column, means for lowering said platform with the separated charge to a position wherein the top of the platform is aligned with the bottom of the transfer, and mechanism for moving the transfer horizontally with the separated bunch charge to a predetermined position after the platform has been lowered.

12. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of bunch lengths, a hollow charge transfer arranged to admit the lower end of said column therein, a vertically movable measuring platform normally occupying a position within said transfer to support the column, a vertically movable member adapted to engage the top of said column and compact it against said measuring platform, a horizontal knife, a device for moving said knife horizontally across the top of said transfer to separate the portion of the compacted column within said transfer from the remainder of the column, mechanism for moving said platform upwardly prior to the operation of said knife by said device, to raise said column to a position wherein a bunch charge of predetermined thickness will be severed from the lower end of the column by said knife, and means for moving said member downwardly, while said platform is raised, to compact said column, said mechanism being adjustable to vary the upper position of said platform and thereby regulate the size of bunch charge separated from said column by said knife.

13. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of bunch lengths, a hollow charge transfer arranged to admit the lower end of said column therein, a vertically movable measuring platform normally occupying a position within said transfer to support the column, a vertically movable member adapted to engage the top of said column and compact it against said measuring platform, a horizontal knife, a device for moving said knife horizontally across the top of said transfer to separate the portion of the compacted column within said transfer from the remainder of the column, mechanism for moving said platform upwardly, means for moving said member downwardly, while said platform is raised, to compact said column, said mechanism being adjustable to vary the upper position of said platform and thereby regulate the size of bunch charge separated from said column by said knife, said mechanism including a shaft rigidly connected to said platform, a sleeve wherein said shaft is slidably mounted, means for raising and lowering said sleeve, and an abutment on said shaft adapted to be engaged by said sleeve during the upward movement of the latter to elevate the platform to a predetermined position within the transfer, said abutment being vertically adjustable on said shaft to vary the position to which the platform is elevated.

14. In a cigar machine, the combination with means for separating bunch lengths from a continuous layer of filler tobacco and superimposing them to form a vertical column of bunch lengths, of a hollow charge transfer having an open bottom and arranged to admit the lower end of said column, a device for separating the portion of said column within said charge transfer from the remainder of the column, a rolling apron having

a portion thereof arranged at a position laterally spaced from the bottom of said transfer, mechanism for moving the charge transfer with the separated charge therein to advance the charge upon said portion of said apron, and a member underlying said transfer to support the charge therein while it is being advanced toward said apron.

15. In a cigar machine, the combination with means for separating bunch lengths from a continuous layer of filler tobacco and superimposing them to form a vertical column of bunch lengths, of a hollow charge transfer having an open bottom and arranged to admit the lower end of said column, a device for separating the portion of said column within said charge transfer from the remainder of the column, a rolling apron having a portion thereof arranged at a position laterally spaced from the bottom of said transfer, mechanism for moving the charge transfer with the separated charge therein to advance the charge upon said portion of said apron, a support underlying said transfer to support the charge therein while it is being advanced toward said apron, a device for lowering the portion of said apron upon which the transfer has been advanced, a vertically movable member, an ejector supported on said vertically movable member in position to be moved downwardly through the transfer to press the charge against the apron while the latter is being lowered, and a plate supported on said member in position to engage and depress the apron at one side of said device and thereby form a loop in the apron.

16. In a cigar machine, the combination with means for forming a vertical column of tobacco, of a hollow charge transfer having an open top and bottom and arranged to admit the lower end of said tobacco column, a device for separating the portion of said column within said charge transfer from the remainder of the column, means for moving said transfer with the separated charge to a predetermined position, a bunch rolling apron having a portion arranged to engage the bottom of said transfer at said predetermined position and support the charge therein, means for lowering the portion of said apron engaging said transfer to permit the charge to descend through the transfer with said apron portion, and an ejector movable downwardly through said transfer to press the charge against the portion of the apron underlying said transfer while the same is lowered by said means.

17. In a cigar machine, the combination with a series of endless belts forming a filler feed channel wherein long filler tobacco may be placed to form a continuous layer, of a stationary ledger plate adjacent one end of said channel, the side of the ledger plate remote from said channel being provided with indentations corresponding to the desired shape of the ends of bunch lengths to be severed from said layer of filler tobacco, means for intermittently driving said belts to advance said layer over said ledger plate, a vertically movable corrugated cutter arranged to descend into engagement with the indented side of said ledger plate to sever a bunch length from the leading end of said filler tobacco layer, means for moving said cutter downwardly whereby a bunch length will be severed from the leading end of the filler tobacco layer advanced over the ledger plate, and a vertical measuring chamber adapted to admit the severed bunch lengths in superposed position and having an end wall underlying said ledger plate, said end wall having indentations fitting the indentations of the adjacent ends of the severed bunch lengths.

18. In a cigar machine, the combination with a series of endless belts forming a filler feed channel wherein long filler tobacco may be placed to form a continuous layer, of a stationary ledger plate adjacent one end of said channel, the side of the ledger plate remote from said channel being provided with indentations corresponding to the desired shape of the ends of bunch lengths to be severed from said layer of filler tobacco, means for intermittently driving said belts to advance said layer over said ledger plate, a vertically movable corrugated cutter arranged to descend into engagement with the indented side of said ledger plate to sever a bunch length from the leading end of said filler tobacco layer, means for moving said cutter downwardly whereby a bunch length will be severed from the leading end of the filler tobacco layer advanced over the ledger plate, a vertical measuring chamber adapted to admit the severed bunch lengths in superposed position and having an end wall underlying said ledger plate, and a vertically movable member adapted to enter the top of said chamber and compress the superposed bunch lengths therein, said member having indentations fitting the corrugations of said cutter.

19. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of filler tobacco and compacting said column, a hollow charge transfer arranged to admit the lower end of said column therein, said means including a member movable upwardly into said transfer to support the lower end of the column in said transfer, a knife, a device for moving said knife across the top of the transfer for separating the tobacco charge within said transfer from the remainder of the column while it is compacted by said means, mechanism for lowering said member while the portion of the column above said transfer is supported by said knife, to relieve the compression of the separated tobacco charge, and mechanism for subsequently moving the charge transfer with the separated charge therein to charge-ejecting position.

20. In a cigar machine, the combination with means for superimposing bunch lengths of filler tobacco to form a vertical column of filler tobacco and compacting said column, a charge transfer arranged to admit one end of said column therein, said means including a member movable into said transfer to engage the end of the column in the transfer, a knife, a device for moving said knife between said transfer and the remainder of said column, while the column is compacted by said means, to separate the portion of the column within the charge transfer, mechanism for withdrawing said member from said transfer, while the knife is located between the charge transfer and the remainder of the column, to relieve the compression of the separated tobacco charge in the transfer, and mechanism for subsequently moving the charge transfer with the separated tobacco charge therein to charge ejecting position.

21. In a cigar machine, the combination with a chamber adapted to receive superimposed lengths of filler tobacco forming a vertical column of filler tobacco, of a hollow charge transfer arranged under said chamber to admit the lower end of said column therein, a horizontal knife arranged to be advanced between the upper surface of said charge transfer and the lower end of

said chamber to separate the portion of said column within said charge transfer from the remainder of the column, means for advancing said knife through said column to separate the tobacco charge filling the transfer from the remainder of the column, and mechanism for advancing said charge transfer with the separated charge therein to a charge-ejecting position, said knife when advanced through said column projecting forwardly above the path of said transfer to rest on the top of said transfer at said charge-ejecting position whereby flexing of the knife is prevented.

22. In a cigar machine, the combination with a vertical measuring chamber adapted to confine a vertical column of superimposed bunch lengths, of a support movable to a position above the upper end of said chamber to support tobacco fed above the upper end of said chamber, means for withdrawing said support to permit the tobacco supported thereon to drop into said chamber, a compactor movable downwardly into the upper end of said chamber when said member is withdrawn and having a face adapted to engage the upper end of said column and thereby compact the same, said compactor being provided with vertical slots extending upwardly from said face, and members movable into said slots into positions above the upper end of said column while

said column is compacted by said compactor to maintain the upper end of said column below the level of said support while said compactor is moved upwardly away from the upper end of said column and said support is subsequently moved into position above the upper end of said chamber.

JEAN L. DURNING,
Executrix of Estate of James P. Durning, Deceased.

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