March 20, 1928. 1,663,174

J. L. FOLDY

CIGAR BUNCH MAKING MACHINE

Original Filed Sept. 18, 1920 4 Sheets-Sheet 1

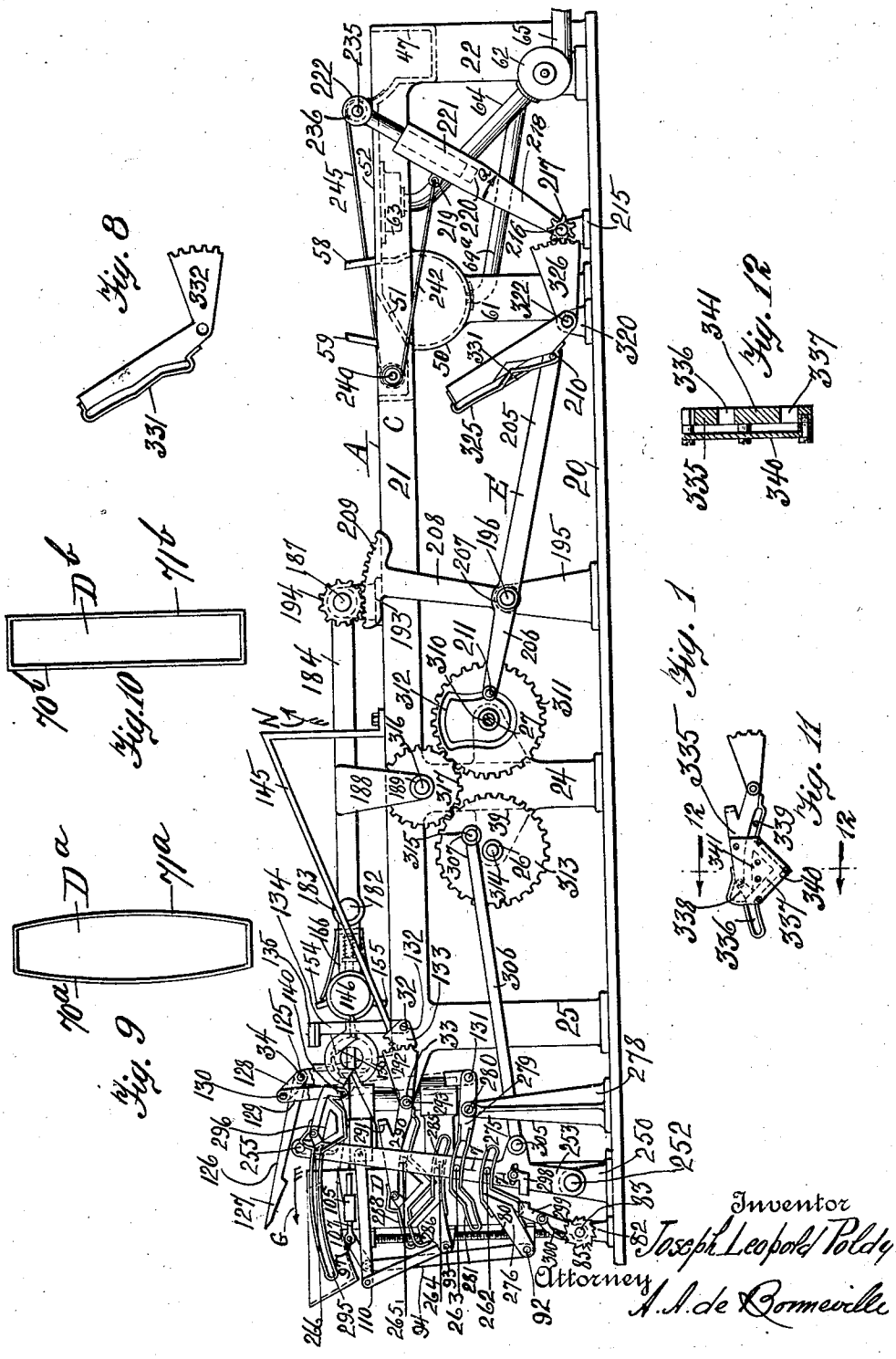

Fig. 8

Fig. 10

Fig. 9

Fig. 12

Fig. 1

Fig. 11

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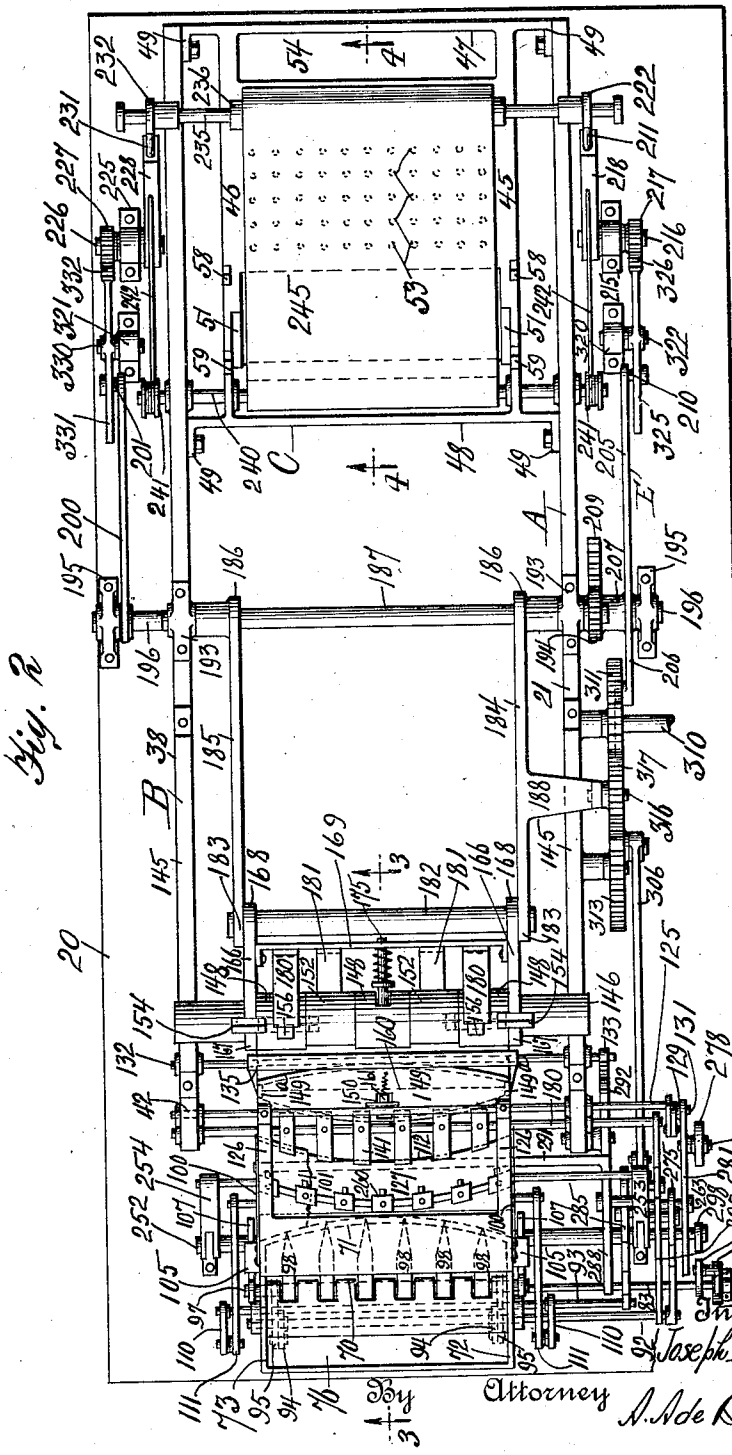
Fig. 2



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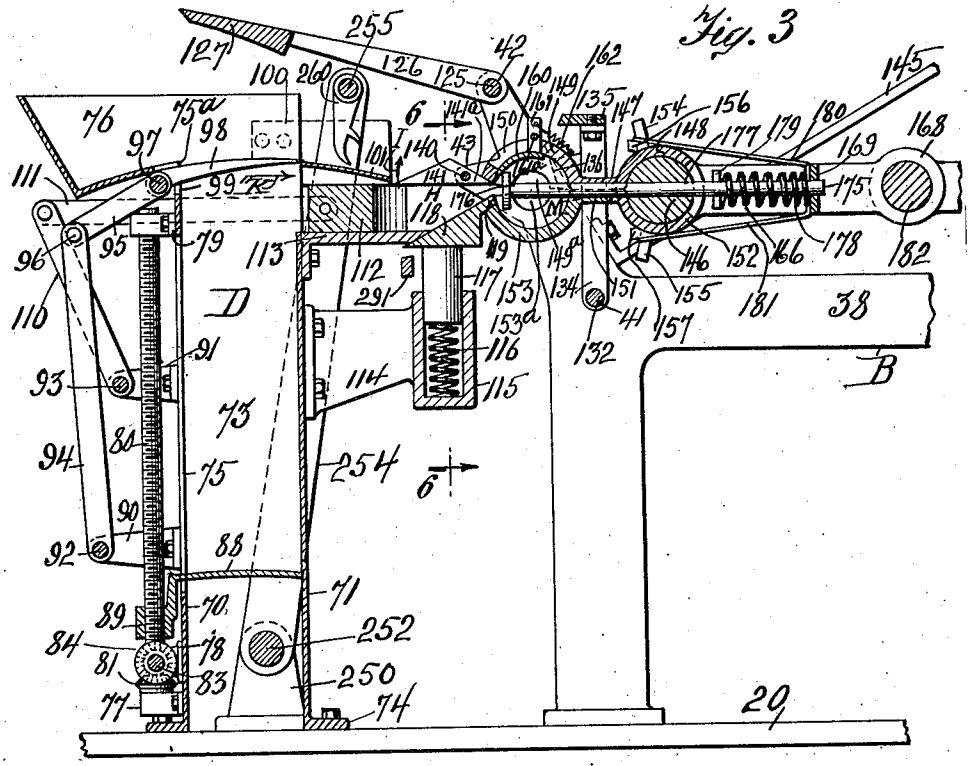
CIGAR BUNCH MAKING MACHINE

Original Filed Sept. 18, 1920 4 Sheets-Sheet 3

Fig. 3



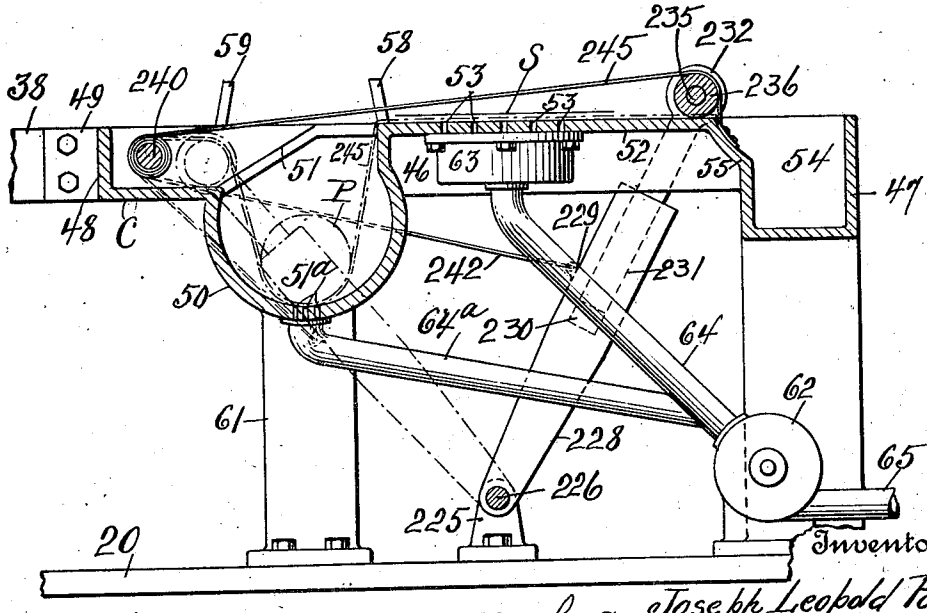


Fig. 4

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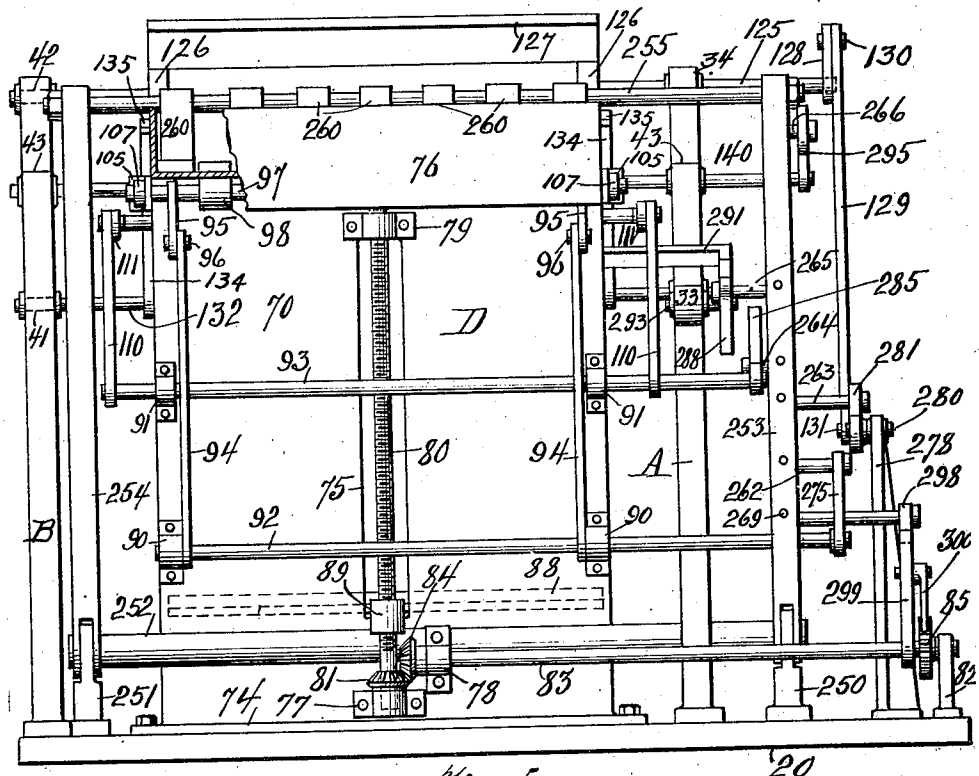

Fig. 5

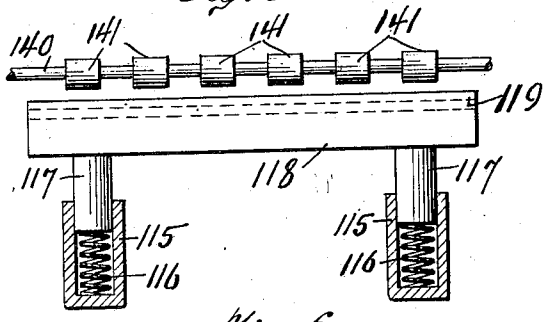

Fig. 6

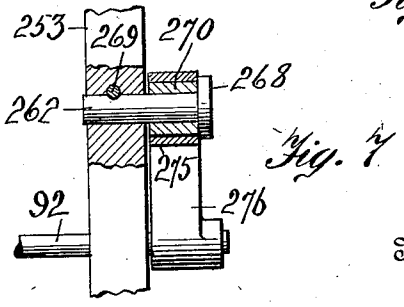

Fig. 7

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Patented Mar. 20, 1928. 1,663,174

UNITED STATES PATENT OFFICE.

JOSEPH LEOPOLD POLDY, OF NEW YORK, N. Y.

CIGAR-BUNCH-MAKING MACHINE.

Substitute for application Serial No. 411,175, filed September 18, 1920. This application filed May 17, 1926. Serial No. 109,804.

This invention relates to a cigar bunch making machine, and is a substitute for the application filed September 18th, 1920, Serial Number 411,175, abandoned March 28th, 1924.

The object of the invention is the production of a machine for forming the filler with its binder which constitutes the bunch for the cigar to be manufactured.

The operations of the machine automatically produce the bunch from a charge of loose tobacco that is charged into a collecting chamber of the machine. Means are provided for either forming the bunch of cylindrical shape, or with various contours which may be alike or different at its ends. The machine can be provided with various shaped collecting chambers which impart the initial shape to the filler, and rolling means which subsequently shape the filler, with its binder, to the shape required.

In the drawings Fig. 1 represents a side elevation of the cigar bunching machine; Fig. 2 is a top plan view of Fig. 1; Fig. 3 shows an enlarged section of Fig. 2 on the line 3, 3; Fig. 4 is an enlarged section of Fig. 2 on the line 4, 4; Fig. 5 represents an enlarged left hand side view of Fig. 1; Fig. 6 shows a section on the line 6, 6 of Fig. 3; Fig. 7 shows a section of Fig. 1 on the line 7, 7; Fig. 8 shows an elevation of one of the cams of the machine; Figs. 9 and 10 represent top plan views of collecting chambers of the machine; Fig. 11 shows a modified form of cam with its appurtenances and Fig. 12 shows a section on the line 12, 12 of Fig. 11.

The machine comprises the base plate 20 on which are mounted the parallel frames indicated in their entireties by the numerals A and B. The frame A comprises the upper horizontal member 21 which has formed therewith the legs 22, 24 and 25. The leg 24 has formed therewith the journal bearings 26 and 27. The leg 25 has formed therewith the journal bearings 32, 33 and 34. The frame B has an upper member 38 similar to 21 and legs similar to 22 and 25. A leg 39 is formed with the frame B which is devoid of journal bearings. In the frame B are formed the journal bearings 41 and 42. A pair of journal brackets 43 are formed with the frames A and B.

A receiving frame is indicated in its entirety by the letter C, and comprises the side walls 45 and 46, which are connected by the end walls 47 and 48. Lugs 49 are formed with the said end walls and are bolted to the frames A and B. A cylindrical shaped receiving pocket 50 extends between the frames 45 and 46. Guides 51 are formed with the side walls 45 and 46 on the opposite ends of the pocket 50. A suction table 52 with the openings 53 extends between the walls 45 and 46 with one end thereof connected to the receiving pocket 50. A delivery pocket 54 is formed between the walls 45 and 46 and is connected to the suction table by the inclined connecting wall 55. Opening lugs 58 and 59 extend up from the side walls 45 and 46. Supporting legs 61 extend from the pocket 50 and are connected to the base plate 20. A suction fan 62 is supported on the base plate 20. A suction chamber 63 is fastened to the lower face of the suction table 52 and is connected to the suction fan by the piping 64. A branch pipe 64ª connects the openings 51ª in the pocket 50 with the piping 64. Discharge piping 65 leads from the fan 60.

A collecting chamber is indicated in its entirety by the letter D and comprises the straight front wall 70, the curved rear wall 71, and the straight side walls 72, 73. A foot flange 74 at the bottom of the chamber is bolted to the base plate 20. A vertical slot 75 is formed in the front wall 70. A charging hopper 76 is formed with the top open end 75ª of the said chamber. Journal brackets 77, 78 and 79 are bolted to the front wall 70. A screw 80 is journaled at its top and bottom ends in the journal brackets 79 and 77, respectively. A bevel gear 81 is fastened to the lower end of the screw 80. A journal bracket 82 is bolted to the base plate 20. A shaft 83 is journaled in the journal brackets 78 and 82 and has fastened to one end thereof the bevel gear 84 which meshes with the bevel gear 81. A ratchet wheel 85 is fastened to the other end of the shaft 83. A movable curved bottom 88 is located in the chamber D and has connected thereto the threaded boss 89 which is in engagement with the screw 80.

Pairs of journal brackets 90 and 91 are bolted to the front wall 70 of the chamber D. A shaft 92 is supported in the brackets 90 and a shaft 93 is supported in the brackets 91. On the shaft 92 are fastened one end of each of the similar links 94. To the other

ends of said links 94 are pivoted the links 95 by means of the pivots 96. A shaft 97 is supported in the other ends of the links 95 and a plurality of knife blades 98 are carried on the shaft 97. The said knife blades in one of their positions extend through a plurality of openings 99 formed in the upper end of the front wall 70. A bracket with the similar side walls 100 and the curved bottom 101 is fastened to the upper end of the side walls 72 and 73 of the chamber D and said bottom extends across the width of said chamber. Guide sleeves 105 are fastened to the side walls 72 and 73 of the chamber D. Guide rods 107 at one are pivoted to the shaft 97 and are guided in the guide sleeves 105 to maintain the knife blades 98 in proper operative position.

A pair of links 110 have one end each fastened to the shaft 93 and to their other ends are pivoted one end each of the links 111. A pusher 112 is pivoted to the other ends of the links 111. A supporting bracket 113 is fastened to the wall 71 of the chamber D for the said pusher 112. A pair of brackets 114 are fastened to the wall 71 of the chamber D and have each formed therewith a buffer sleeve 115, in each of which is located a spring 116. A plunger 117 bears on each of the springs 116, and a triangular shaped supporting block 118 with the heel 119 connects the top ends of the said plungers 117. The said block 118 normally bears up against the end of the supporting bracket 113. In the journal bearings 34 and 42 is supported an oscillating shaft 125 to which latter are fastened the arms 126 of the presser cover 127 curved on its lower face with a curvature equal to the curvature of the bottom 88. A link 128 has one end fastened to the shaft 125 and to the other end thereof is pivoted one end of the link 129 by means of the pivot 130. The other end of the link 129 is pivoted to a cam to be described by means of the pivot 131.

An oscillating shaft 132 is supported in the bearings 32 and 41 and has fastened thereto at one end the gear segment 133 which meshes with a gear segment of a cam to be described. A pair of arms 134 have one end each fastened to the shaft 132 and are connected at their other ends by the push bar 135. Side knife blades 136 are fastened to the arms 134. An oscillating shaft 140 is supported in the journal brackets 43 and has fastened thereto the swinging pressers 141 having the heels 141a. The pressers 141 are in alignment with the knife blades 98. A pair of inclined supporting tracks 145 extend up and are fastened to the frames A and B. A hinge shaft 146 has its ends supported on the tracks 145. A jaw 147 with the rear cylindrical portions 148 and the front cylindrical portion 149 having the guide opening 150 has its portions 148 supported on the shaft 146. Side openings 149a are formed with the portion 149. A second jaw 151 with the rear cylindrical portions 152 and the front cylindrical portion 153 has its portions 152 in contact with the shaft 146. Side openings 153a are formed with the portion 153. The portions 149 and 153 constitute a cigar mould M.

Pairs of opening lugs 154 and 155 are respectively formed with the portions 148 and 152. Pairs of spring supporting lugs 156 and 157 are formed with the portions 148 and 152. A segmental cylindrical shaped knife blade 160 bears up against the inner surface of the cylindrical portion 149 and has extending therefrom the guide lug 161 which latter is guided in the guide opening 150. A cross pin 161a extends through the lug 161. A spring 162 has one end fastened to the guide lug 161 and its other end is fastened to the cylindrical portion 149. Links 166 have the eyelets 167 at one end which encircle the shaft 146, and at the other ends of the links are formed the eyelets 168.

A cross bracket 169 connects the links 166. A pusher rod 175 with the pusher disc 176 extends through openings in the jaws 147 and 151 and through an opening 177 in the shaft 146. The disc 176 extends the whole length of the mold. The rod 175 also extends through an opening in the cross bracket 169. A spring 178 encircles the rod 175 and bears between the cross bracket 169 and a pin 179 extending through the rod 175. Two pairs of leaf springs 180 and 181 extend from the cross bracket 169 and bear upon the supporting lugs 156 and 157 respectively. The springs 180 and 181 normally maintain the jaws 147 and 151 in their closed position. The eyelets 168 engage the shaft 182 and said shaft 182 also engages the eyelets 183 at one end of the links 184 and 185. The other ends 186 of the latter links are fastened to the shaft 187. The link 184 has formed therewith an extension leg 188 having a journal bearing 189. Journal brackets 193 are fastened to the frames A and B and support the shaft 187. A spur gear 194 is fastened to one end of the shaft 187. A pair of brackets 195 are fastened to the base plate 20 and have supported therein the shaft 196. A link 200 adjacent to the frame B has one end supported on the shaft 196 and to its other end is connected a roller 201.

A lever E with the arms 205 and 206 has formed therewith a hub 207 which is supported on the shaft 196. A third arm 208 extends from the hub 207 and has formed therewith a gear segment 209. The latter meshes with the spur gear 194. The arm 205 has connected to its end a roller 210 similar to the roller 201. At the outer end of the arm 206 is journaled a roller 211 similar to 210.

A bracket 215 is fastened to the base plate 20 adjacent to the frame A and supports the oscillating shaft 216, on one end of which latter is fastened the spur gear 217, and at the other end is fastened the oscillating arm 218 with the ear 219. The arm 218 has formed at its upper end a guide and supporting cavity 220 for the extension arm 221 having the eyelet end 222. Adjacent to the frame B there is fastened to the base plate 20, a bracket 225 similar to 215. An oscillating shaft 226 similar to 216 is supported in the bracket 225. A spur gear 227 similar to 217 is fastened to the shaft 226 at one end thereof. At the other end of the shaft 216 is fastened the oscillating arm 228 similar to 218 and which has formed therewith an ear 229. The arm 228 has formed at its upper end a guide and supporting cavity 230, for the extension arm 231 similar to the arm 221 and which has formed therewith an eyelet 232 similar to 222. A cross shaft 235 is slidably supported in the eyelets 222 and 232. A roller 236 is fastened to the shaft 235. A shaft 240 is journaled in the frames A and B as well as in the frames 45 and 46. At the ends of the shaft 240 are fastened the grooved pulleys 241. Rubber cords 242 have one end each connected to the ears 219 and 229 and are then wound around the pulleys 241 and connected thereto. A canvas apron 245 has one end fastened to the connecting wall 55, is guided over the roller 236 and its other end is wound around the shaft 240 and fastened thereto. The latter winding is opposite to the windings of the rubber cords 241, and by virtue thereof the rubber cords maintain the canvas apron 245 taut.

A pair of similar brackets 250 and 251 are fastened to the base plate 20. An oscillating shaft 252 is supported in the brackets 250 and 251. Arms 253 and 254 have their lower ends fastened to the shaft 252. A shaft 255 is fastened to and connects the upper ends of the arms 253 and 254. A plurality of scrapers 260 are fastened to the shaft 255 and are aligned in the clearance spaces between the knife blades 98 and the swinging pressers 141. On the arm 253 there are secured a plurality of similar pins 262, 263, 264, 265 and 266. Each of the latter pins has formed therewith a head 268 and is secured in place to the arm 253 by means of the locking pin 269. A roller 270 is journaled on each of the pins 262 to 266. A cam 275 rides on the roller 270 of the pin 262 and is fastened to an arm 276. The end of the arm 276 is fastened to the shaft 92. A bracket 278 extends up from the base plate 20 and has pivoted in its top end the arm 279 by means of the pivot 280. At one end of the arm 279 is fastened the cam 281 which engages the roller 270 of the pin 263. The other end of the arm 279 is pivoted to the link 129 by means of the pivot 131. A cam 285 rides on the roller 270 of the pin 264 and is fastened to an arm 286. The arm 286 is fastened to the shaft 93. A cam 288 rides on the roller 270 of the pin 265 and is fastened to one end of the arm 290. An arm 291 at the upper end of the arm 290 extends across the width of the chamber D. The arm 290 has also formed therewith the gear segment 292 which meshes with the gear segment 133. A shaft 293 is supported in the bearing 33 and in turn is fastened to the arm 290. A cam 295 rides on the roller 270 of the pin 266 and is fastened to an arm 296. The latter arm is fastened to the shaft 140. A kicker 298 is fastened to the arm 253. On the shaft 83 is fastened an arm 299 which has pivoted thereto a pawl 300. The latter coacts with the ratchet wheel 85. When the arms 253 and 254 oscillate the kicker 298 strikes the arm 299, by virtue of which the pawl 300 engages the ratchet wheel 85 and causes it to turn the bevel gear 81 and with it the screw 80, which latter raises or lowers the bottom 88 of the chamber D. The arm 253 has pivoted thereto by means of the pivot 305, the connecting rod 306. The other end of the connecting rod 306 has formed therewith an eyelet 307. In the bearing 27 of the frame A is journaled the driving shaft 310. A spur gear 311 with the grooved cam 312 is fastened to the driving shaft 310. The roller 211 of the arm 206 engages the groove of the cam 312. A spur gear 313 is fastened to a shaft 314 which latter is journaled in the bearing 26. A pin 315 extends from the spur gear 313 and supports the eyelet 307 of the connecting rod 306. A shaft 316 is supported in the bearing 189 of the extension 188 and has journaled thereon the idler spur gear 317. The latter meshes with the spur gears 311 and 313. Journal brackets 320 and 321 are fastened to the base plate 20. A shaft 322 is journaled in the bracket 320. A cam 325 having formed therewith the gear segment 326 is journaled on the shaft 322. A roller similar to 270 of the pin 210 rides on the cam 325. The gear segment 326 meshes with the gear 217. The coaction of the gear segment 326 and the gear 217 oscillates the arm 218. In the bracket 321 is fastened a shaft 330. A cam 331 having formed therewith a gear segment 332 is journaled on the shaft 330. The roller similar to 270 of the pin 201 rides in the cam 331. The gear segment 332 meshes with the spur gear 227. The coaction of the gear segment 332 and the gear 227 oscillates the arm 228.

To produce a cigar bunch thicker in the center than produced with the chamber D having the straight front wall 70, a chamber D^a with the curved front and rear walls 70^a and 71^a is used. To produce a cylindrical

cigar bunch a chamber D^b with the parallel front and rear walls 70^b and 71^b is used.

Figs. 11 and 12 show a modification of the cams. In this instance the cam movements are changed when moving in reverse directions. The cam comprises the body portion 335 in which is formed the main groove 336 that connects with the secondary groove 337. A pivoted stop 338 is normally located in the groove 336. A roller 339 rides in the groove 336 in one direction and on its return to its original position rides for a part of its travel in both of the grooves 336 and 337, as the stop 338 directs the pin into the latter groove.

A plate 340 is bolted to the portion 335 of the cam and carries the triangular block 341 which with the said portion 335 forms the grooves of the cam.

To make the cigar bunches, tobacco which is to constitute the fillers of the cigar bunches is charged into the collecting chamber D. The shaft 310 is rotated by means not shown, and through the intervention of the spur gear 311, idler gear 317, spur gear 313 and the connecting rod 306, the arms 253 and 254 are swung while the idler gear 317 is in mesh with the spur gears 311 and 313. When the arm 253 swings in the direction of the arrow G, the kicker 298 contacts with the arm 299 and thereby the pawl 300 coacts with the ratchet wheel 85 which turns the shaft 83. The rotations of the shaft 83 through the intervention of the bevel gears 84 and 81 turns the screw 80. With the rotations of the screw 80, the bottom 88 of the chamber D rises and carries up the requisite quantity of tobacco for one bunch at each cycle of the machine. The cam 281 by reason of its coaction with the roller 270 on the pin 263 lowers the presser cover 127 and presses the tobacco at the upper opening of the collecting chamber D, while the arms 253 and 254 swing in the direction of the arrow G (Fig. 1). The cam 275 during the same swing of the arms 253 and 254 by reason of the coaction of the roller 270 on the pin 262 and the intervention of the links 94 and 95 has moved the knife blade 98 to the left in the direction of the arrow G to clear the top opening of the collecting chamber D. The arms 253 and 254 now swing in a direction opposite to the arrow G and the knife blades 98 cut off a portion of tobacco through the top of the opening of the chamber D. Upon the further advance of the arms 253 and 254 in the direction opposite to the arrow G the scrapers 260 which are fastened to the shaft 255 push the severed portion of the tobacco over the curved bottom 101 into the cavity H. The swinging pressers 141 have been previously swung open in the direction of the arrow I during the swing of the arms 253 and 254 in a direction opposite the arrow G, by virtue of the coaction of the roller 270 of the pin 266 and the cam 295. The pressers 141 now swing down and bear upon the tobacco in the cavity H during the end of the swing of the arms 253 and 254 in the direction opposite to the arrow G. The arms 253 and 254 now swing in the direction of the arrow G and by the coaction of the roller 270 on the pin 264 and the cam 285, cause the pusher 112 to move to the right in the direction of the arrow K and force the bunch of tobacco into the cigar mold M. The triangular supporting block 118 is now forced down by the pressure of the tobacco in the cavity H and the heel 119 bearing against the adjacent outer edge of the cylindrical portion 153 swings open the same. When the bars 253 and 254 again swing in the direction opposite to the arrow G. the coaction of the roller 270 of the pin 265 with the cam 288 and the coaction of the gear segments 133 and 292 cause the pusher bar 135 to bear on the guide lug 161 of the knife blade 160. The blade 160 cuts off the tobacco in the mold M from the tobacco in the cavity H and the blades 136 cut off the ends of the tobacco that project through the ends of the mold M. While the mold M is being filled with tobacco the disc 176 is pushed back in the direction of the arrow K (Fig. 3) against the tension of the spring 178. The arm 291 maintains the supporting block 118 in proper position when the cavity H is being filled with tobacco and when it is forced out of the same. At the proper time the coaction of the roller 211 in the grooved cam 312 causes the gear segment 209 to actuate the spur gear 194, which swings the links 184 in the direction of the arrow N, the hinge shaft 146 riding on the tracks 145. After the shaft 146 is swung clear of the tracks 145 the links 166 will swing on the shaft 182 and hang in a vertical position. The idler gear 317 swings with the links 184 and disengages from the spur gears 311 and 313. The cylindrical portions 149 and 153 will now be swung over the receiving pocket 50 and the lugs 153, 155, will contact with the lugs 58 and 59 which will open the portions 149 and 153 and the tobacco bunch P will drop upon the apron 245, and the latter with the apron will be deposited in the pocket 50 as indicated in Fig. 4 in dotted lines. The disc 176 causes the tobacco bunch to be ejected from the mold M by virtue of the tension of the spring 178. Previously the arms 218 and 228 have been swung to the left as shown in dotted lines in Fig. 4 by the coaction of the gear segments 326 and 332 with the gears 216 and 227. Next a leaf S of tobacco which is to constitute the binder of the cigar bunch P is placed upon the apron 245 over the suction table 52, and which is held in place by the suction of the fan 62.

The said suction by means of the branch pipe 64ª clears the tobacco of any dust. Next by the coaction of rollers 210 and 201 with the cams 325 and 331, the arms 218 and 228 are swung to the right in the direction of the arrow Q, which lifts the cigar bunch P out of the pockets 50 and it rolls on the said leaf S which latter is wound around the bunch P of tobacco. The cams 325 and 331 may be of the same or of different curvature depending upon whether a cylindrical bunch or a bunch of different shaped ends is to be formed.

Upon the further rotation of the gear 311 the links 184 and their appurtenances swing to the left to cause the idler gear 317 to mesh with the gears 311 and 313 to start a second cycle of the machine.

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

Having described my invention what I desire to secure by Letters Patent and claim is:

1. In a cigar bunch making machine the combination of a collecting chamber for a charge of tobacco, means to simultaneously compress and discharge the tobacco from one end of the chamber, means to sever predetermined portions of the tobacco after being discharged from the chamber, means to convey the severed portions to a cavity, a mold with hinged portions in the machine, means to compress each severed portion in said cavity and force it into said mold to give it its proper shape, a table in the machine, a movable apron on the table, means to deposit each shaped severed portion on the apron and means to roll a binder placed on the apron around each shaped and severed portion to make bunches for cigars.

2. In a cigar bunch making machine the combination of a driving shaft, a collecting chamber open at one end in the machine, a movable bottom in the chamber, means between the driving shaft and said bottom to move the latter, a presser cover swinging over the open end of the collecting chamber, knife blades swinging over the open end of the chamber, scrapers moving over the open end of the chamber, the coaction of said elements forcing portions of tobacco out of said chamber, severing said portions and moving the severed portions from the open end of the chamber, means to shape said severed portions and means to roll a binder on each severed portion to form a bunch for a cigar.

3. In a cigar bunch making machine the combination of means to compress a charge of tobacco, means to sever portions from said charge, a spring actuated plunger in the machine, a movable pusher in the machine coacting with said plunger to compress the severed portions of tobacco, an adjustable spring actuated mold coacting with said plunger to open the latter, means to discharge the severed portions of tobacco from said mold and means to roll a binder on each severed portion of tobacco after it leaves the mold.

4. In a cigar bunch making machine the combination of a collecting chamber to compress a charge of tobacco, means to sever portions from said charge, means to compress said severed portions, a mold with spring actuated portions to shape the severed portions of tobacco, a receiving pocket in the machine for the severed portions, a flexible apron over said pocket, means to swing said mold to deposit the severed portions of tobacco upon the apron and force said apron with said severed portion of tobacco into said pocket, a suction table adjacent to the receiving pocket and covered by said apron, a pair of oscillating shafts under the suction table, an arm with one end fastened to each shaft and a roller journaled in the swinging ends of said arms, said roller contacting with the lower face of said apron and adapted to roll said severed portions of tobacco upon said apron over said suction table and roll a leaf of tobacco on each of said severed portions to make bunches for cigars.

5. In a cigar bunch making machine the combination of a collecting chamber open at one end to compress a charge of tobacco, means to force said charge through the open end of the chamber, means to sever portions of said charge as it is discharged from the open end of the collecting chamber, a receiving pocket in the machine for the said severed portions, suction means connected to the pocket, a suction table adjacent to said pocket, a flexible apron over said pocket and table, a mold with flexibly actuated portions adapted to receive the severed portions of tobacco and deposit them upon the apron into said pocket, a pair of shafts journaled under the suction table, a pair of arms with one end of each fastened to each shaft and a roller journaled in the swinging ends of said arms, said roller contacting with the lower face of said apron and adapted to roll said severed portions of tobacco upon said apron from said pocket over said suction table and roll a leaf of tobacco on each of said severed portions to make bunches for cigars.

6. In a cigar bunch making machine the combination of a collecting chamber open at one end, a knife blade over the said open end, an oscillating cam adjacent to the chamber and connecting means between the cam and the knife blade.

7. In a cigar bunch making machine the combination of a collecting chamber open at one end, an oscillating arm in the machine, a pin on the arm, a shaft journaled adjacent to the chamber, a pair of links with one end of each fastened to the shaft, a second link

pivoted to the other end of each of said pair of links, a second shaft connecting the other ends of the latter links, a plurality of knife blades fastened to the second shaft, a cam with one end thereof fastened to the first shaft and its cam surface coacting with the pin on the oscillating arm, the oscillations of the arm through the intervention of the cam and its coacting elements causing the knife blades to reciprocate at predetermined intervals over the open end of said chamber.

8. In a cigar bunch making machine the combination of a collecting chamber open at one end, a presser cover over said open end, an oscillating cam adjacent to said chamber and connecting means between said cam and the presser cover.

9. In a cigar-bunch making machine the combination of a collecting chamber open at one end, a presser cover over said open end, an oscillating arm adjacent to said chamber, a pin on the arm, a cam pivoted adjacent to the oscillating arm with its cam surface coacting with said pin and connecting means between the other end of the cam and said presser cover.

10. In a cigar bunch making machine the combination of a collecting chamber open at one end, an oscillating arm adjacent to said chamber, a pin on said arm, a cam pivoted adjacent to said chamber with its cam surface coacting with said pin, an oscillating shaft supported adjacent to the chamber, a link with one end fastened to the shaft, a second link connecting the first link and the said cam and a presser cover over the chamber with one end fastened to said shaft.

11. In a cigar bunch making machine the combination of a pusher slidably supported, a shaft journaled below the pusher, an oscillating arm in the machine, a pin extending from the arm, a cam with one end fastened to the shaft and its cam surface coacting with the pin and linked connections between the shaft and pusher to reciprocate the latter.

12. In a cigar bunch making machine the combination of a mold for a material, a knife blade for the mold to cut the material throughout the length thereof and a pair of knife blades to cut the material at the ends of the mold, an oscillating cam in the machine and connecting means between the cam and the knife blades.

13. In a cigar bunch making machine the combination of a mold for a material, an oscillating arm in the machine, a pin on the arm, a cam pivoted in the machine with its cam surface coacting with the pin, a gear segment formed with the cam, a shaft journaled in the machine, a gear segment fastened to the shaft meshing with the first gear segment, a pair of arms with one end of each fastened to the shaft, a knife blade fastened to each arm, a pusher bar connecting the arms, a knife blade in the mold and a guide lug extending from the latter knife blade in the path of the pusher bar, the coaction of the elements actuating the knife blade in the mold to cut the material throughout the length of the mold and the knife blades on the arms cutting the material at the ends of the mold.

14. In a cigar bunch making machine the combination of a shaft journaled therein, swinging pressers fastened to the shaft, an oscillating arm in the machine, a pin extending from the arm and a cam with one end fastened to the shaft and its cam surface coacting with said pin, the oscillations of the arm causing the swinging pressers to actuate through the intervention of the intervening elements.

In testimony whereof I affix my signature.

JOSEPH LEOPOLD POLDY.