May 9, 1939. H. H. WHEELER 2,157,537

CIGAR BUNCH SHAPING MACHINE

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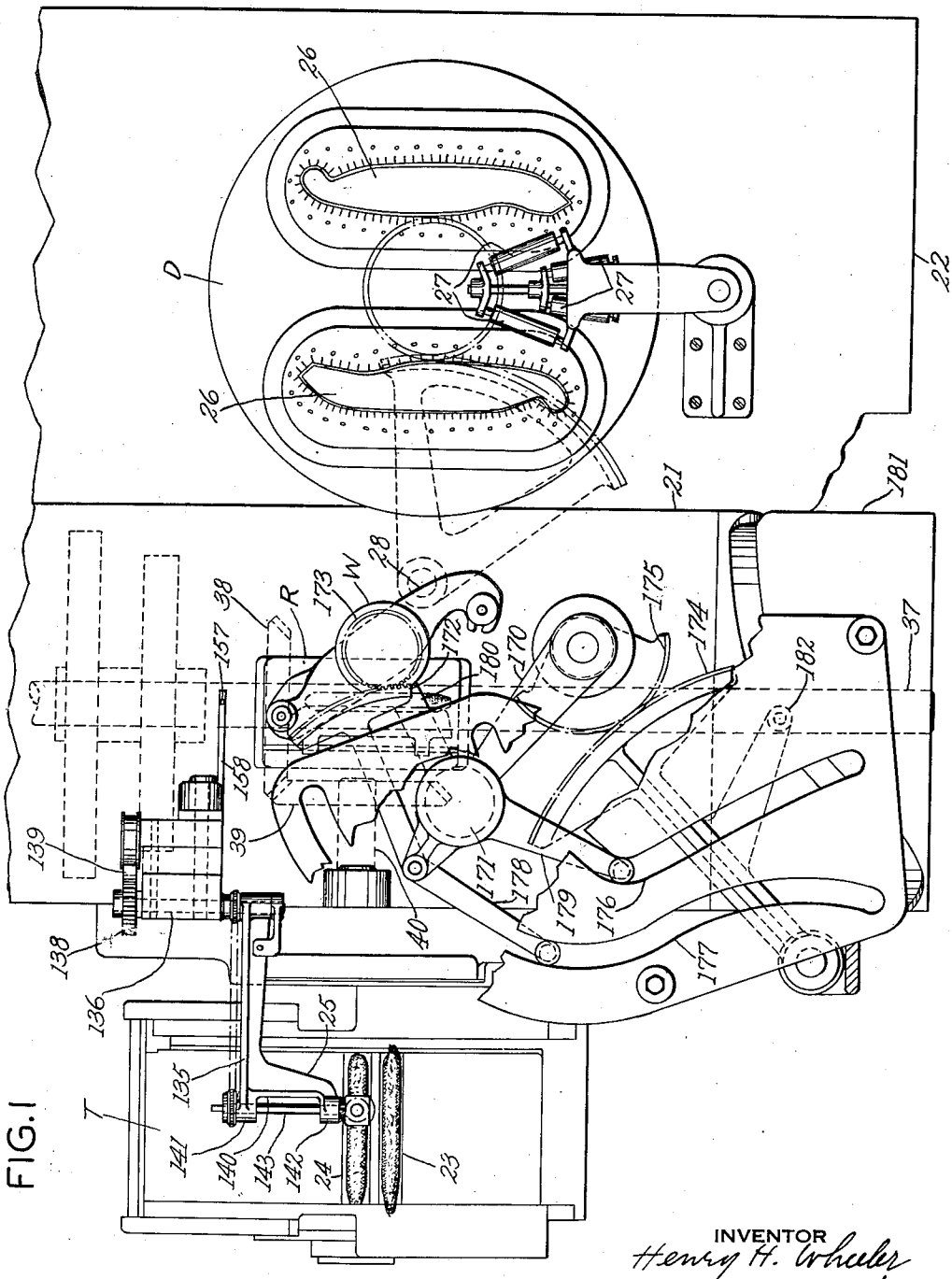


FIG. 1

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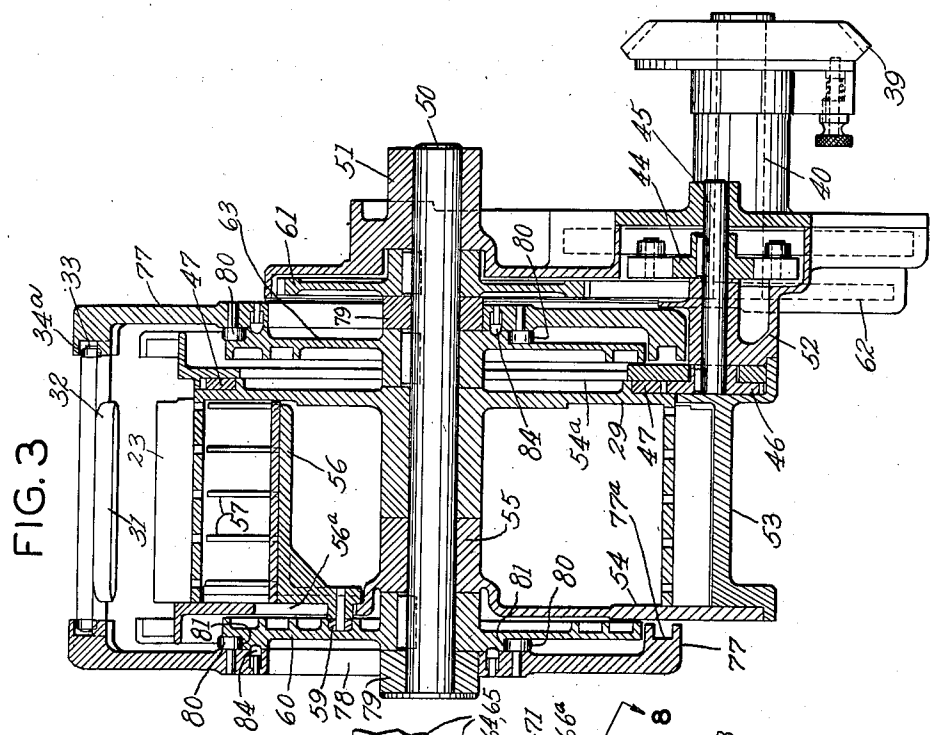


FIG. 3

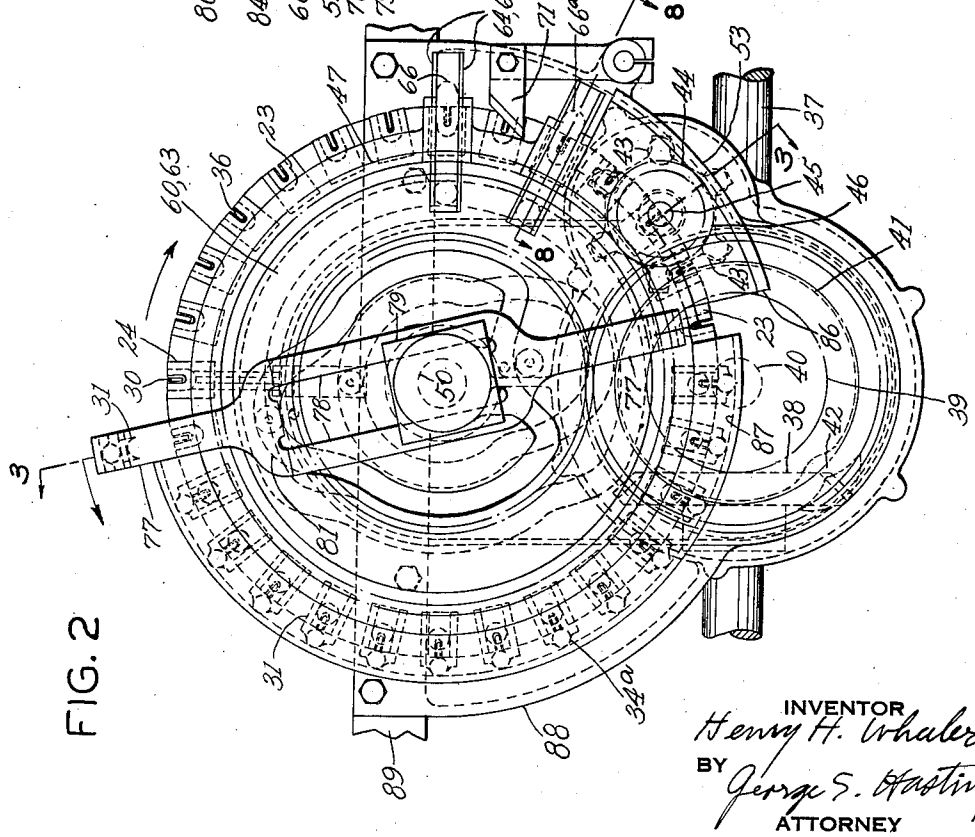


FIG. 2

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CIGAR BUNCH SHAPING MACHINE

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FIG. 4

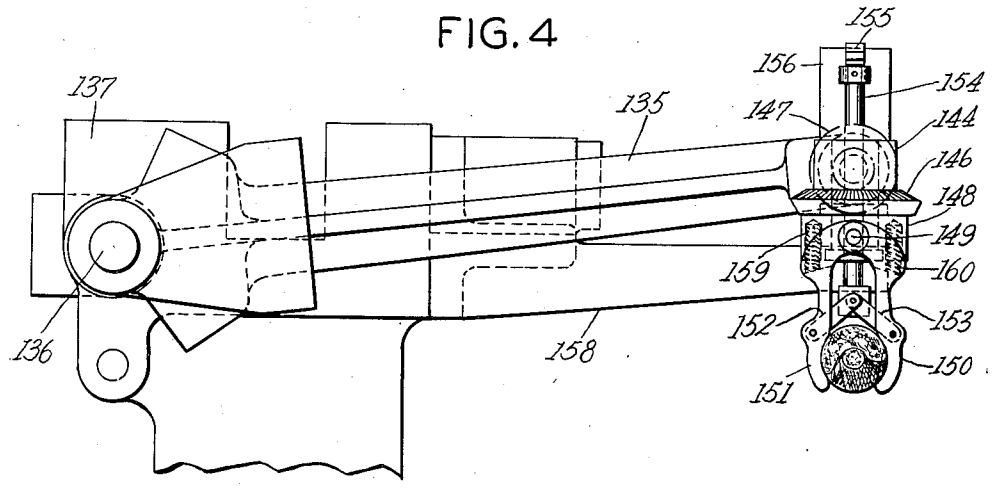


FIG. 5

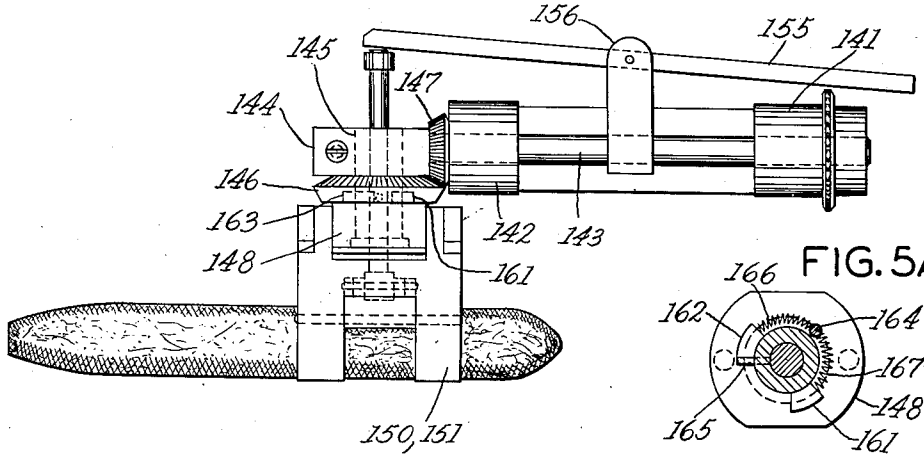


FIG. 5A

FIG. 6

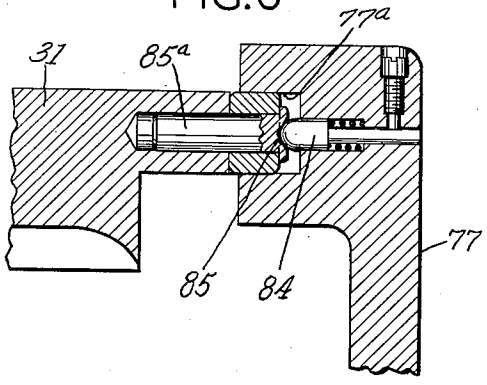
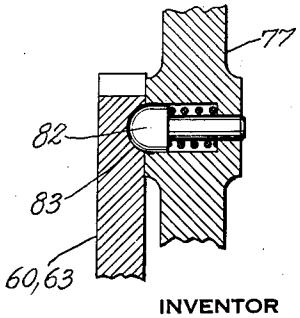


FIG. 7



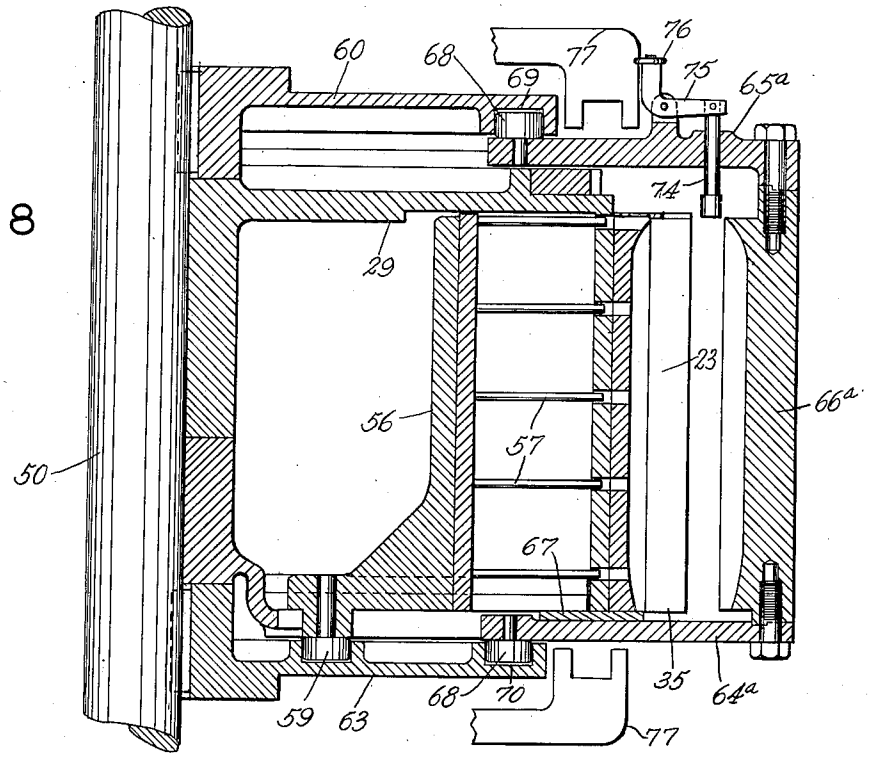
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CIGAR BUNCH SHAPING MACHINE

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FIG. 8



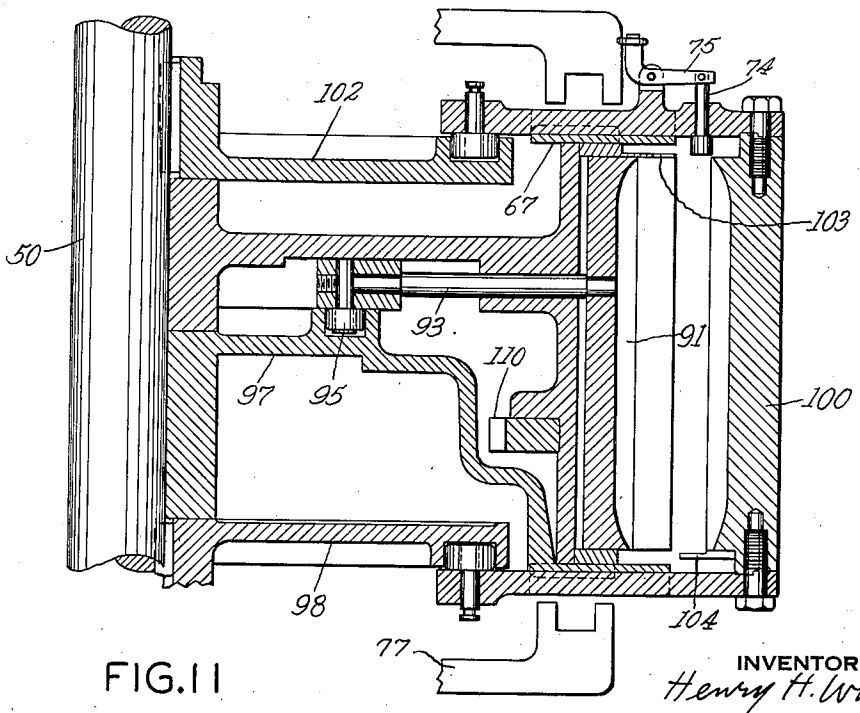


FIG. 11

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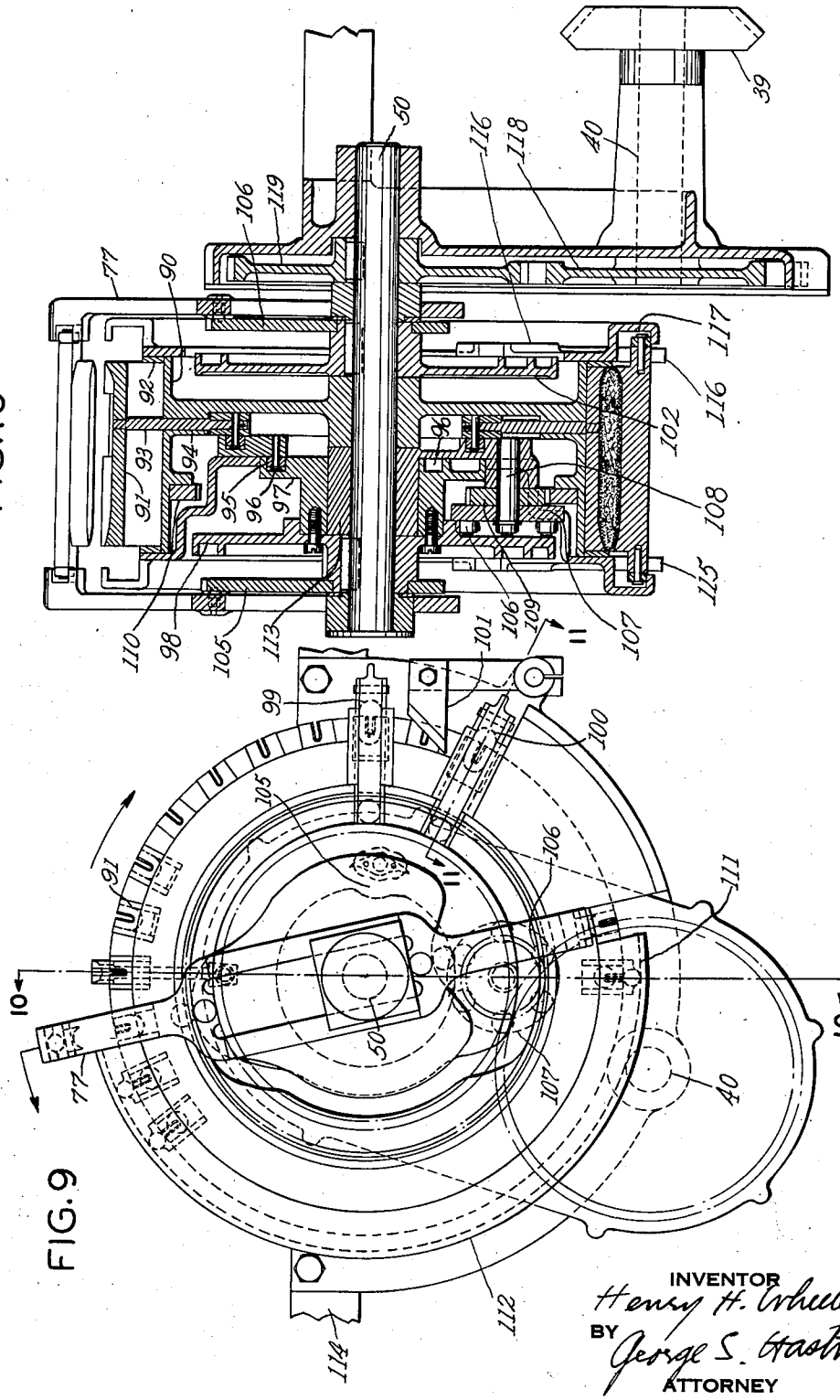


FIG. 10

FIG. 9

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FIG. 12

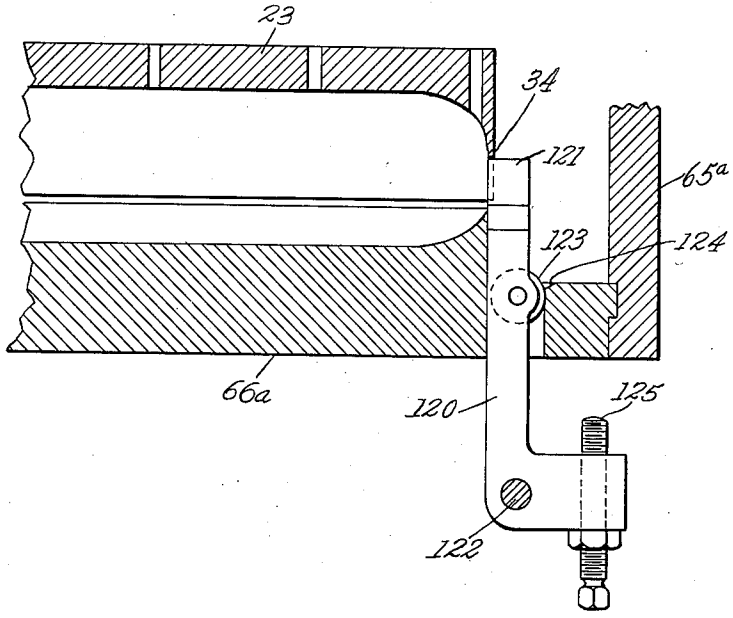


FIG. 13

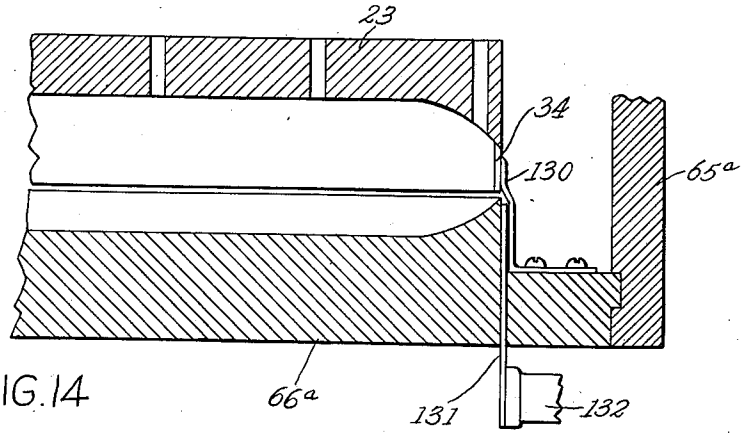
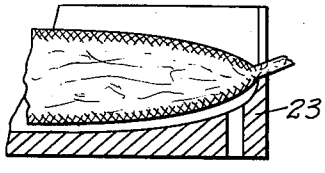


FIG. 14



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Patented May 9, 1939

2,157,537

UNITED STATES PATENT OFFICE

2,157,537

CIGAR BUNCH SHAPING MACHINE

Henry H. Wheeler, Brooklyn, N. Y., assignor to International Cigar Machinery Company, a corporation of New Jersey

Application May 16, 1935, Serial No. 21,723

44 Claims. (Cl. 131—9)

The invention relates to cigar bunch machines of the general type disclosed in the United States patent to Wheeler, No. 1,964,101, dated June 26, 1934, wherein cigar bunches are loaded into pockets of a rotating or traveling conveyor, and in which the cigars are compressed or shaped to final cigar form.

In the machine disclosed in the Wheeler patent, one conveyor having a series of pockets was provided for receiving the cigar bunches from the operator, from which conveyor the cigars went to a second pocketed conveyor in which the shaping of the bunches was completed. One of the principal objects of the present invention is to secure the same advantages and results, or better ones, as were secured in the plural conveyor arrangement of Wheeler, by means of a single pocketed conveyor or carrier. Thus, it is the purpose of applicant's invention to simplify the construction of this type of machine, to eliminate transfers between conveyors, to decrease the floor space, and to render the mechanism more reliable and less expensive while retaining at the same time the advantages of the plural arrangement above referred to.

Another important object of the invention is to secure with a single endless series of shaper or concentrator pockets the effect of an open end pocket for trimming and a closed end pocket for shaping completely one end of the bunch, and to do this with the same pockets.

It is also an object of the invention to provide a single rotary or traveling conveyor having an endless series of pockets with means for placing and removing covers on said pockets and circulating said covers so as to leave a plurality of pockets uncovered and exposed for a loading of the bunches by the operator, permitting the operator to catch up on easy bunches the time lost on difficult bunches. In this connection, it is one purpose of the invention to provide a simple and effective operating means for said covers, particularly one adapted to use with existing cigar machines. Thus, it is an object of the invention to secure the movement of the cover operating mechanism from the motion of the bearing shaft of the pocketed turret or rotary carrier about its axis, without the complication and possible wear and lost motion resulting from extensive operating linkage.

Still another object of the invention is to provide means for trimming the portions of the bunches projecting from open upper pocket portions and at the same time permit complete shaping of the bunch at one end in the closed lower pocket portions in order to secure fully shaped head ends. The invention also contemplates the relocating of the bunch subsequent to trimming and before shaping in order to compensate for the projecting or surplus material left after trimming in the slot or opening in the end of the open portion of the shaping pocket. Another object is to provide an alternative way of disposing of this surplus material by prodding the same inwardly at said slot, though it should be understood that the invention may be practiced without said relocating or prodding in of the surplus material.

The invention also contemplates a more efficient arrangement of the shaper turret and wrapper die turrets with respect to each other and the wrapping mechanism of the cigar machine than hitherto available, and improved transfer means for use therewith.

Another object of the invention is to provide an ejector arrangement, particularly one of the type having pins fitting the contour of the cigar, adapted to the single turret or conveyor construction and operated in a simple manner by the rotation of said turret.

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

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

Fig. 1 is a plan view, partly broken away, of the assembled machine;

Fig. 2 is an end elevation of the shaper turret;

Fig. 3 is a sectional view of a side elevation of the shaper turret and its operating mechanism on line 3—3 of Fig. 2;

Fig. 4 is a detail plan view of the transfer device shown in Fig. 1;

Fig. 5 is a detail side elevation of the transfer device of Fig. 4;

Fig. 5a is a sectional plan view of a detail in Fig. 4;

Fig. 6 is a detail side view of a part shown in Fig. 2;

Fig. 7 is a detail side view of a locking device shown in Fig. 2;

Fig. 8 is a sectional view on the line 8—8 of Fig. 2;

Fig. 9 is an end elevation of a modified shaper turret construction;

Fig. 10 is a sectional view on the line 10—10 of Fig. 9;

Fig. 11 is a sectional view on the line 11—11 of Fig. 9;

Fig. 12 is a detail view of a side elevation showing a piece for pushing material at an open end of the shaper turret;

Fig. 13 is a detail plan view of a modification of the invention; and

Fig. 14 is a detail showing the trimming slot.

Referring now to Fig. 1 of the drawings, the improved machine consists generally of a shaper turret T, a wrapper cutter die D, a wrapper transfer mechanism W, and wrapper rolling means R for rolling a wrapper onto a shaped bunch to produce the completed cigar. The units T, D, R, and W are mounted on the main frame 21 of the cigar machine, the wrapper die being mounted on a table 22 secured to said frame.

As shown in Fig. 1, cigar bunches to be shaped in the turret T are placed by an operator in one of the shaping pockets 23. The cigars are shaped during the intermittent rotation of the turret and after traveling nearly a complete revolution on the turret are ejected at the position 24 into the transfer 25 wherein the cigar bunch is conveyed, and at the same time turned 90 degrees and delivered into the rolling mechanism R. In the meantime a wrapper leaf has been applied by an operator to the die 26 on the die turret D. The turret D rotates 180 degrees carrying the wrapper leaf on the die 26 under cutter rollers 27 to form the wrapper. The cut wrapper is picked up by the suction head 28 of the wrapper delivering transfer W and is then delivered onto the rotating bunch in the wrapper rolling mechanism R to form the completely wrapped cigar in a manner well known in this art. The shaping turret T consists of a drum 29 having in its periphery a plurality of shaping pockets 23 arranged in an endless circular series on said drum. These pockets are of cigar shape to receiver a cigar bunch and surround the same on three sides with the upper side open, and each pocket has upstanding straight parallel walls designed to receive a closely fitting male cover 31. This cover is integral with a supporting bar 32 having end projections 33 which may be provided with suitable rollers 34a by which the covers are operated, as hereinafter described.

As shown in Figs. 8 and 11, the end walls of the pockets 23 are provided with openings through which the surplus material or tail portions of the bunch may project and into which said surplus is tucked down by the operator in placing the bunch in the pocket. The tuck end of the shaper pocket is open even when the cover 31 is in closed position, a slot 35 being provided therein for this purpose. The corresponding slot 36 at the head end of the pocket wall extends toward the bottom of the pocket to a point more than half the thickness of the cigar bunch from the bottom so that when the cover 31 is in closed position the head end of the shaping enclosure formed by the pocket and the cover is fully closed to form a completely shaped head end or tip to the cigar bunch, thus avoiding difficulties due to unshaped surplus material projecting through an opening. In this particular respect the pocket is similar to that disclosed in the application for United States Patent by John F. Halstead, Serial No. 1,380, filed January 11, 1935.

The drum 29 carrying the several shaping pockets is intermittently indexed by increments equal to the distance between pockets to bring the pockets to the operating stations, presently to be described, by means of a main drive shaft 37 having a beveled gear 38 engaging a beveled gear 39 secured to auxiliary drive shaft 40. This shaft 40 carries an index cam 41 having a cam groove 42 which engages successive rollers of the index rollers 43 mounted on an index plate 44 carried by an index shaft 45. A gear 46 secured to index shaft 45 engages ring gear 47 secured to the drum and thus communicates the index motion to said drum.

The drum is suitably supported for rotation on a shaft 50 carried in a bearing 51 supported by drum bracket 52 which is suitably supported from the main frame of the cigar machine. Also secured to the drum bracket 52 is a laterally extending bracket 53 at the outboard end of which is mounted a bearing and cover plate 54 supporting the outboard bearing 55 for the shaft 50. This plate is slotted at 56a to receive an ejector bracket 56 slidable therein, carrying ejector pins 57 which are arranged with ejecting surfaces of bunch shaped contour to lift a bunch from the pocket or transfer. A cam roller 59 on the bracket 56 engages the innermost cam track of a cam 60 which serves to control the ejecting movement. The cam 60 is secured to the shaft 50 which shaft is rotated independently of the turret or drum 29, by means of a gear 61 secured to the shaft and meshing with a gear 62 fastened to the shaft 40. A cam 63 is also secured to the shaft 50 for the purpose presently to be described.

The bunches loaded in the pockets 23 are accordingly indexed step by step to the first operating station shown at three o'clock position in Fig. 2. At this position a pair of slides 64 and 65 carrying a shaping and compressing closure member 66 are mounted in a slideway 67 for movement of the closure member into and out of bunch seating position. This closure member 66 may be given a movement sufficient to seat the punch to proper trimming depth about ⅛" above completely bottomed position. The drum 29, after withdrawal of the member 66, is indexed to the trimming station where a trimmer 71 trims surplus material projecting through the open pocket ends at the tuck and head ends of the bunch. In the form shown in Fig. 2, the member 66 does not completely close the head end of the bunch, there being a small opening to receive the projecting surplus or tail portion at the head end of the bunch. As will presently be described, it is practical and indeed in some instances preferable to combine the trimming and seating operations at the seating station at three o'clock position, as just mentioned.

At the next station shown in detail in Fig. 8, a seating and compressing closure plunger 66a mounted on slides 64a and 65a is given a movement into the pockets to compress and shape the trimmed bunch. This closure member 66a is operated by means of cam rollers 68 secured to the slides and engaging cam grooves 69 and 70 in the cams 60 and 63 respectively. Since the operating means of the closure 66 are identical with the operating means just described for the plunger 66a, the former means will not be separately described. The plunger 66a is, however, set ⅛" closer to the bottom of the pocket so that it serves to close the slot 36 by approaching the bottom of the pocket within less than half the thickness of the bunch, thereby completely shaping the head end of the bunch to produce a fully formed tip or head end.

This fully formed tip end is of considerable importance since it assures more perfect heads and it is one of the principal features of the

present invention to produce this head in the same pocket as that in which the bunches are originally loaded, in the manner above described, so that the complication of a plurality of pocketed drums and transfers therebetween, etc., is avoided.

While not necessary in most instances, a desirable additional feature of the present invention consists of a locator movable against one end of the bunch, preferably the head end. This locator consists of a locating pin 74 extending through an opening in the slide 65a and operated by means of a bell crank 75 having an operating roller 76 which is engaged by the cover carrying arm 77 to be presently described. The timing of this locator is such that the locating pin engages the bunch prior to the movement of the compressing plunger 66a so that the compressing plunger engages on a trimmed and located bunch. The locating is made desirable in order to compensate for the surplus material left in the slot and sometimes projecting a trifle from the slot at the head end of the bunch, after the trimming operation.

At the station prior to the six o'clock station in Fig. 2, the pockets have their covers 31 replaced by means of cover operating elements 77. These elements consist of bifurcated central portions or cross heads 78 supported on shaft 50 by blocks 79 rotatable on said shaft. Spaced rollers 80 projecting inwardly from said cover operating elements one to either side of the bifurcated portion thereof, engage cam surfaces 81 of the cams 60 and 63. The form of this cam surface shown in Fig. 2 is such that for the larger part of the operation of the machine the cover operating elements 77 remain with their recessed cover engaging portions 77a in alignment with the path of travel of the rollers 34a of said covers while in closed or seated position in the pockets. As shown in detail in Fig. 7, each of the elements 77 is provided with a spring pressed latch 82 positioned to engage in a depression 83 in the cams 60 and 63. The recesses 77a (Fig. 6) have seated therein spring pressed latches 84 which engage depressions 85 in the ends of the bearings 85a of the covers.

As a result of the continued motion of the cams 60 and 63 the high part of the cam surface 81 lifts the elements 77 to the position shown in Fig. 2 in which the element is latched to said cams by the latches 82. Since this operating element has received a cover during the aligned dwell of the recesses 77a in the path of the rollers 34a, the cover is carried outwardly by this operating element. Due to being latched to the cams 60 and 63 the elements 77 travel in unison with the cam 180 degrees until the outer end of the element strikes the abutment 86 on the bracket 53. Continued movement of the cam causes the rollers 80 to be moved radially, carrying the cover recesses on said element into alignment with the cover roller cam track 87 at which position the element dwells while the drum 29 is indexed forwardly. The cover which has just been moved into the pocket by said element is then displaced laterally from the recesses 77a and is thereafter controlled by said cam track 87. In the continued motion of the cams 60 and 63 a low portion of the cam is reached which carries the end of the element which has just discharged its cover to the position shown in Fig. 2, at the same time lifting a cover at the outer end of said element, as shown on the upper side of Fig. 3, ready to repeat the operation.

It is noted that the cover operating element or arm is given a movement opposite to the direction of rotation of the drums so that the raised end of the arm does not interfere with the loading of bunches by an operator in the series of exposed pockets between twelve o'clock and three o'clock position, as shown in Fig. 2. The speed of movement of arm 77 is greater than that of the individual pockets due to the fact that the arms travel 180° from cover removal position at the top of the drum to cover applying position at the bottom thereof every time the drum 53 is indexed to advance a pocket one stop in the intermittent movement of the drum. The cover roller cam tracks 87 are formed in flanged rings 8 integral respectively with the plates 54 and 54a made fast to bracket 53 of the machine.

As will be seen from the foregoing description of the operation of the cover carrying arms 77, one section or quadrant of the circular series of pockets 23 on the drum 29 is left exposed at all times for loading. This is important in order that an operator may build up a reserve of loaded bunches so that the machine will not be stopped when the operator misses a bunch or two, or otherwise fails to keep up for a moment with the pace of the cigar machine. By the present construction, applicant is able to both load bunches and completely shape them in the same drum and pockets thereof. This he does without interference from the pocket covers of which he circulates a number less than the total number of pockets in order to leave the pockets exposed, and at the same time he avoids interference with the exposed pockets by carrying them over the closed pockets of the series from one pocket at one end of the exposed section to another pocket at the other end of the exposed section, where the cover is replaced.

A modified form of the invention is rendered somewhat simpler by the use of a displaceable pocket bottom 91 which serves to eject the bunches. This pocket bottom is slidable in a recess 92, there being one recess and pocket bottom for each shaper position about the periphery of the drum. Each bottom element is provided with a stem 93 slidable in a slideway 94 and on the lower end of the stem is a cam follower roller 95 which engages in a cam groove 96 of the cam 97. This cam 97 is secured to the cam plate 98 which in turn is secured to the shaft 50 for rotation therewith.

This modified form of the invention is provided wih seating, trimming and compressing stations, including the seating element 99 and the compressing element 100 and the trimming knife 101. Since each of these operates in exactly the same manner, and is of the same construction as the same parts 66, 66a, and 71, respectively, of the preferred form no further description will be given of these parts except to note that the slides thereof are operated by cams 98 and 102 secured to the shaft 50.

In the operation of the shaping parts of the drum 90 when the seating plunger 99 is pushed in it seats the bunch on the displaceable pocket bottom but leaves said bottom in partially raised position, as shown in Fig. 11, so that the material projecting from the head end of the bunch may extend straight through a slotted end portion 103 similar to that already described at 36 in connection with the form shown in Figs. 1 and 2. The projecting material is then trimmed by the knife 101 and passes to the compressing and shaping plunger 100 which has sufficient

travel to fully seat said pocket section in its recess with the shaped plunger face fully closing the head end of the bunch to produce a fully shaped bunch. As shown in Fig. 11, a similar locating device to that shown in the preferred form illustrated in Fig. 8 is provided which is in all respects identical and is therefore not to be described further. A locating back stop 104 is provided at the tuck end of the shaper plunger.

Flanges 105 and 106 secured to the cams 98 and 102, respectively, are provided with depressions similar to the depressions 83 already referred to and external cam surfaces similar in shape to the cam surfaces 81, also referred to, and operate the cover carrying arms 77 in exactly the same manner. The drum 90 is driven from the shaft 50 by means of a cam surface 105 integral with the cam 98 which engages cam rollers 106 on index plate 107 rotating shaft 108 and driving a gear 109 thereon meshing with a ring gear 110 secured to the drum. Cam track 111 for controlling the pocket covers is secured in stationary position to a stationary flange 112 fast to the outboard bearing element 113. A bracket 116 supports the cam track 117 which is integral with the bracket, at the opposite face of drum 90. The shaft 50 is driven from the auxiliary shaft 40 through gears 118 and 119.

In Fig. 12, there is shown an alternative construction for taking care of the surplus material which lays in the slot 34 after trimming of the head end of the bunch. In this form a bell crank 120 having a narrow edge 121 adapted to enter and close the slot 34, is pivoted at 122 to the bracket 53 (Fig. 2) so that on upward movement of the slide 65*a* the roller 123 is struck by the portion 124 of said plunger and caused to push the material of the bunch inward through said slot as shown. On downward movement of the shaper plunger the plunger strikes set screw 125 and swings the bell crank away from the pocket end. Edge 120 therefore closes slot 34 during shaping.

Fig. 13 illustrates a modified trimming device adapted for use with the forms of the invention shown in Figs. 2, 3, 9, and 10, wherein the trimming knife is secured to the second shaper plunger as to the plunger 66*a*. This trimming knife 130 is arranged to lead the projecting edge of the shaper sufficiently so that the material projecting through the slot 34 of the pocket is trimmed and thereafter the trimmed end of the punch is shaped by the contoured face plunger 66*a*, so that a completely shaped bunch head is formed in the same pocket and at the same station as that at which the trimming occurs. Since gum is apt to accumulate on the face of the plate 130, a stationary scraper element 131 fixed by a suitable bracket 132 which is secured to the stationary bracket 52 of the machine, is provided which rubs the inner face of the knife as the knife moves down with the shaper plunger.

A suitable transfer is provided for taking the bunches ejected by the ejector pins 57, or their equivalent, at twelve o'clock station of the drum and delivering them to the rolling mechanism arm. This transfer may take a variety of forms but as shown it consists of a swinging arm 135 swingable from a shaft 136 in a bearing block 137, shaft 136 being oscillated through a gear 138 which is in turn actuated by a rack 139 given reciprocating movement from any suitable means such as a cam follower means driven from the main drive of the cigar machine in timed relation to the operation of the turret T and the rolling mechanism R. On the outer end of the arm 135 there is provided a bracket 140 having spaced board lugs 141 and 142 receiving a shaft 143. Extending from adjacent the lug 142 is a block 144 carrying a bushing 145 on which is rotatably mounted a bevel gear 146 meshing with a bevel gear 147 secured to the shaft 143. Also mounted for rotation on the bushing 145 is a block 148 on which are hinged by pins 149 a pair of opposed grippers 150 and 151. These grippers are interconnected by means of toggle links 152 and 153 (see Fig. 4) which serve to keep the grippers fully open when the gripper operating stem 154 is pushed down by the arm 155 pivoted on lug 156, when said arm 155 engages a stop screw 157 mounted on a bracket arm 158. The gripper fingers 150 and 151 are closed by the breaking of the toggle joint when the same engages a cigar, as shown in Fig. 4. The gripper fingers are normally urged towards closed position by springs 159 and 160 seated in the block 148 and engaging ledges on the gripper fingers. The block 148 receives motion from the rotation of gear 146 through lugs 161 and 162 which project into a recess 163 in the gear. A pin 164 in the gear projects into the recess. Springs engaging the bushing and lugs tend to urge said lugs away from the pin. A pin 165 secured to the bushing engages the lugs as the block is rotated on the bushing through movement of the gear thereon, the distance between the pin engaging surfaces of the lugs being such that the pin 165 can move only 90 degrees and thereafter further motion of the gear is taken by the springs 166 and 167. This has the desirable effect of completing the 90 degree rotation of the gripper fingers prior to the descending of the fingers to grip or release the cigar, the rotation of the gear being made somewhat greater than 90 degrees, say 110 degrees for this purpose,—thus the fingers are always squarely located in proper alignment with the cigar before engaging or releasing the cigar, which makes for reliability and accuracy in removing bunches from the drum pockets and placing them in the rolling mechanism.

Referring to Fig. 1, the delivery transfer for transferring wrappers from the cutter dies 26 is of the same type and operated by the same means as disclosed in the United States patent to Halstead, No. 1,824,400, dated September 22, 1931, in which the wrapper suction plate 28 is swung on an arm 170 articulated at 171, the plate being rotatable about its own axis on the end of the arm through engagement of a rack 172, with a gear 173 secured to said plate. The arm 170 is swung by a rack 174 which engages a gear sector 175 secured to said arm. Trailer cams 176 and 177 engage arms 178 and 179 controlling the swinging of the floating arm 180 on arm 170 and the operation of the rack 172, respectively. Rack 174 is operated from drum cam 181 engaging a cam follower 182.

In the foregoing specification, I have described an apparatus and method illustrative of certain ways in which the invention may be carried into effect. This apparatus and method may be varied widely in construction within the scope of the claims, for the specific construction and method selected to illustrate the invention are but certain of many possible embodiments of the same. The invention, therefore, is not to be restricted to the details illustrated and described, nor to the particular embodiments chosen as illustrative of the invention. For example, as already mentioned,

the trimming knife may be carried by the same element which seats and compresses the bunch without any additional seating element or separate trimming station. Also it is clear that the operation of the mold covers, such that a plurality of adjacent pockets are left open for loading, may be used in an arrangement which does not fully close the head end of the bunch for complete shaping of the tip thereof, and the latter feature is not to be limited to an arrangement having the loading feature in the absence of specific language in the claims.

The operation of the approved shaping machine has been described in detail in connection with the description of the several parts thereof. No detailed description of the operation of the wrapper die turret D which rotates on a horizontal central axis under the cutter rollers 27 has been included because this mechanism has been fully disclosed in the United States patent to Clausen, No. 1,888,788, for a Cigar wrapper cutting mechanism and because the details thereof form no part of the present invention. Likewise, the wrapper applying mechanism R is shown merely in outline. This consists of the customary nest of rollers for rotating a cigar bunch as the wrapper is applied, and is similar to that disclosed in detail in the United States patent to Halstead, No. 1,915,277, for a Cigar wrapping mechanism, to which reference is made for further details.

In connection with the locating of the bunches in the pockets of the carrier drum illustrated in Figs. 8 and 11, it should be noted that the contour of the cam grooves 69 and 70 which control the position of the plunger 66*a* is such that the ejectors 57 at this station are pushed outwardly to lift the binder of the bunch away from the pocket bottom before the locating element 74 acts on the bunch. This is desirable to prevent sticking of the binder to the bunch bottom, rendering difficult the endwise locating movement of the bunch. The ejectors are then returned to retracted position prior to the compressing action of the shaper 66*a*. It should be understood that the ejector at the station shown in Fig. 8 is identical with that shown in the upper portion of Fig. 3, and accordingly is not separately described.

What is claimed is:

1. A cigar bunch shaping machine comprising in combination. an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, a lesser number of unconnected shaping covers adapted to close the pockets, and means acting to separately remove said covers from said pockets at one portion of said conveyor and replace them at a different portion of the latter to close a plurality of pockets of said series for shaping bunches therein and to leave exposed a plurality of open pockets of the same series for loading.

2. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to keep closed a plurality of the pockets of said series for shaping bunches therein and while exposing a plurality of open pockets of the same series for loading, said pockets being closed at the head end of the bunch to a height above the bottom of the pocket at least equal to half the thickness of the bunch, a trimmer for trimming surplus material projecting from the head end of said pocket, said coacting means operating to fully close the cover on said bunch subsequent to trimming to fully shape in the same pocket the trimmed end of said bunch.

3. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, independent separately movable shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to maintain closed a plurality of the pockets of said series for shaping bunches therein and to simultaneously expose a plurality of open pockets of the same series for loading, said means including a cover transfer, and mechanism operating said transfer to carry covers from one end to the other of a selected portion of the path of said pockets on said conveyor, to leave the pockets open for loading along the remaining portion of said path.

4. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, separate shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said means including a cover transfer, and mechanism operating said transfer to carry covers one at a time from one end to the other of a selected portion of the path of said pockets on said conveyor, to leave the pockets open for loading along said portion, said mechanism including means giving said transfer movement over the closed pockets in a direction opposite to the movement of the pockets of the conveyor to avoid interference with loading.

5. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endles path, separate shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said means including a cover transfer member and devices imparting movement to said transfer member transverse to the path of said pockets to move the covers two at a time, one into and the other out of pocket closing position prior to the movement of another cover by said transfer member, and along the path of movement of the pockets on the conveyor to transfer the cover from one part of said path to another.

6. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers one at a time for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said conveyor comprising a rotatable turret having said pockets arranged about its periphery, and said means acting to move the covers radially of said turret into position to close the pockets.

7. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers one at a time for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said covers being less in number by a plurality of covers than the number of said pockets.

8. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, unconnected shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said means including a cover transfer and operating mechanism therefor to successively remove a cover from one pocket of said series and replace said cover on a different pocket of said series.

9. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close the pockets, and means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, said means including a cover operating element having movement transverse to said path at two points thereof simultaneously to place a cover on one pocket at one of said points and to remove a cover at the other of said points.

10. A cigar bunch shaping machine comprising in combination, an endless travelling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close the pockets, means coacting with said covers and said conveyor to close a plurality of the pockets of said series with covers for shaping bunches therein and leave exposed a plurality of open pockets of the same series for loading, and a trimmer for trimming surplus bunch material projecting at one end of said pockets, said pockets and covers having coacting shaping surfaces for fuly closing said end of the pockets to completely shape said bunch end in the same pocket as that in which it was trimed.

11. In a cigar bunch shaping machine, the combination with a series of bunch shaping pockets, of mechanism moving said pockets in a circular path and presenting a plurality of said pockets open for loading, bunch shaping covers for said pockets, and means for removing a cover radially of said path from a pocket at one part of the path and replacing said cover on a pocket at another part of said path.

12. In a cigar bunch shaping machine, the combination with a carrier having a series of bunch shaping pockets, of mechanism moving said pockets in a circular path and presenting a plurality of pockets open for loading, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path in a direction radial of said path and replacing said cover on a pocket at another part of said path, said means including an element having cover retaining parts movable about the path of said carrier.

13. In a cigar bunch shaping machine, the combination with a carrier having a series of bunch shaping pockets, of mechanism moving said pockets in a circular path and presenting a plurality of said pockets open for loading, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path and replacing said cover on a pocket at another part of said path, said means including an element having cover retaining parts movable about the axis of said carrier, and devices for giving said element radial movement to remove and replace the covers.

14. In a cigar bunch shaping machine, the combination with a series of bunch shaping pockets, of mechanism moving said pockets in a circular path, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path and replacing said cover on a pocket at another part of said path, said means including an arm extending from one position along said path to a diametrically opposite one, said arm having cover retaining parts at each end thereof, and operating means for giving said arm movement transverse to said path to remove said covers and swinging movement to transport said covers along said path.

15. In a cigar bunch shaping machine, the combination with a series of bunch shaping pockets, of mechanism moving said pockets in a circular path, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path and replacing said cover on a pocket at another part of said path, said means including an arm extending from one position along said path to a diametrically opposite one, said arm having cover retaining parts at each end thereof, and operating means for giving said arm movement transverse to said path to remove said covers and swinging movement to transport said covers along said path, said operating means including a continuously rotating member adjacent to said arm, and mechanism cooperating with said member and said arm to successively give said arm radial and swinging motion in response to the rotation of said member.

16. In a cigar bunch shaping machine, the combination with a series of bunch shaping pockets, of mechanism moving said pockets in a circular path, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path and replacing said cover on a pocket at another part of said path, said means including an arm extending from one position along said path to a diametrically opposite one, said arm having cover retaining parts at each end thereof, and operating means for giving said arm movement transverse to said path to remove said covers and swinging movement to transport said covers along said path, said operating means including a continuously rotating member adjacent to said arm, and mechanism cooperating with said member and said arm to successively give said arm radial and swinging motion in response to the rotation of said member, said mechanism including a cam on said rotating member engaging a follower element on said arm.

17. In a cigar bunch shaping machine, the

combination with a series of bunch shaping pockets, of mechanism moving said pockets in a circular path, bunch shaping covers for said pockets, and means for removing a cover from a pocket at one part of the path and replacing said cover on a pocket at another part of said path, said means including an arm extending from one position along said path to a diametrically opposite one, said arm having cover retaining parts at each end thereof, and operating means for giving said arm movement transverse to said path to remove said covers and swinging movement to transport said covers along said path, said operating means including a continuously rotating member adjacent to said arm, and mechanism cooperating with said member and said arm to successively give said arm radial and swinging motion in response to the rotation of said member, said mechanism including a latch for connecting said arm to said rotating member for movement therewith.

18. In a cigar shaping machine, the combination with a travelling series of bunch shaping pockets, of a number of covers traveling with said pockets, a trimmer for trimming surplus bunch material projecting at one end of said pockets, said pockets and covers having coacting shaping surfaces relatively movable into position to fully close said end of the pocket to completely shape the end of the bunch in the same pocket as that in which it was trimmed, and means for moving said covers in and out of said position.

19. A cigar bunch shaping machine comprising in combination, an endless series of travelling bunch shaping pockets adapted to receive untrimmed bunches with surplus material projecting from one end of the pocket, said pocket being closed at said end to a height above the bottom of the pocket at least equal to half the thickness of the bunch, a seating element having a bunch shaped operating face movable into position to fully seat the head end of said bunch in the pocket, and a trimmer mounted on said seating element and leading the operating face thereof to trim the bunch prior to completion of the seating thereof.

20. The method of shaping cigar bunches which consists in locating the bunches in a cigar shaped pocket without fully seating the same so that surplus material at the head end of the bunch may project over one end of the pocket, trimming said projecting surplus material, and then moving a complementary shaping element into cooperating relationship to said pocket to fully enclose said bunch in a cigar shaped space fully closed at said end to form a fully shaped head in the same pocket as that in which the bunch is trimmed.

21. A cigar bunch shaper comprising in combination, a traveling carrier having an endless series of bunch shaped mold pockets having upstanding walls, a series of mold covers adapted to closely fit within the said pocket walls and complementary to the pockets to shape a bunch within, mold opening and closing members adjacent said mold covers, said members having cover engaging parts interengageable as a result of relative movement parallel to the direction of movement of the pockets on said carrier, and mechanism giving said members straight rectilinear motion parallel to said walls to move said covers into and out of pocket fitting position.

22. A cigar bunch shaper comprising in combination an endless traveling series of bunch shaped pockets having slotted end walls completely closed to a height greater than the radius of the bunch, a series of shaper members having operating faces complementary to the shape of the pockets, means for moving said members into and out of bunch shaping coaction with one of said pockets to enclose a cigar shaped space completely closed at said end to shape a bunch therein with the one tip of the bunch completely shaped, said moving means being so constructed as to permit travel of said members with said pockets.

23. A cigar bunch shaper comprising in combination an endless series of bunch shaped pockets having end walls completely closed to a height greater than the radius of the bunch, a shaper member having an operating face complementary to the shape of the pockets, means for moving said member into and out of bunch shaping coaction with one of said pockets to enclose a cigar shaped space completely closed at said end to shape a bunch therein with the one tip of the bunch completely shaped, said pockets having a slot in said end above the closed portion thereof, and means coacting with said slot to trim surplus bunch material projecting through the slot prior to shaping.

24. A cigar bunch shaper comprising in combination, a series of bunch shaped pockets having openings in their end walls, means coacting with said opening to trim surplus bunch material projecting therethrough, a prodding element and devices moving said element into said opening after the trimming operation to push the trimmed portion of the bunch within the pocket.

25. A cigar bunch shaper comprising in combination, a series of bunch shaped pockets having openings in their end walls, means coacting with said opening to trim surplus bunch material projecting therethrough, a prodding element and devices moving said element into said opening after the trimming operation to push the trimmed portion of the bunch within the pocket, a shaper member having an operating face complementary to the shape of the pockets, mechanism for moving said member into and out of bunch shaping coaction with said pockets to shape a bunch in said pocket, said devices including connections operating said prodding element in response to the movement of said member toward cigar shaping position.

26. In a cigar bunch machine, the combination with an endless carrier having an endless series of bunch shaped pockets, said pockets being closed at one end to a height above the bottom of the pocket greater than a radius of a cigar, said pocket wall having an opening above the closed portion at said end, means for trimming the end portion projecting above the closed end wall of a bunch in the pocket, and a shaping element complementary to said pocket for shaping the bunch therein, and means moving said element into position to completely close said end of the pocket to fully shape the trimmed end of the bunch.

27. In a cigar bunch machine, the combination with an endless carrier having an endless series of bunch shaped pockets, said pockets being closed at one end to a height above the bottom of the pocket greater than a radius of a cigar, said pocket wall having an opening above the closed portion at said end, means for trimming the end portion projecting above the closed end wall of a bunch in the pocket, and a shaping element complementary to said pocket for shaping the bunch therein, and means moving said ele-

ment into position to completely close said end of the pocket to fully shape the trimmed end of the bunch, and means coacting with said pockets to locate the trimmed bunch endwise therein prior to shaping.

28. In a cigar bunch machine, the combination with a traveling series of bunch shaping pockets having openings at one end to receive surplus material at the end of the bunch, means for trimming the projecting surplus material from the bunch, and means coacting with said pocket to locate the trimmed bunch endwise therein, said means including devices for supporting the bunch above the bottom of the pocket during locating.

29. In a cigar bunch machine, the combination with a traveling series of bunch shaping pockets having openings at one end to receive surplus material at the end of the bunch, means for trimming the projecting surplus material from the bunch, and means coacting with said pocket to locate the trimmed bunch endwise therein, said means including devices for supporting the bunch above the bottom of the pocket during locating, and a shaping element coacting with said pocket to shape a bunch therein, mechanism for moving said element into an outer bunch shaping relation to the pocket, said locating means having connections operable by said mechanism as the shaping element moves toward shaping position.

30. In a cigar machine, the combination with a plurality of elongated wrapper cutting dies, of means for intermittently rotating said dies from a wrapper leaf receiving position to a wrapper delivering position, mechanism for applying a wrapper to a cigar bunch positioned with its axis parallel to the length of the die in wrapper delivering position, a traveling carrier rotating about a horizontal axis and traveling in a plane substantially parallel to the axis of said mechanism and having a series of bunch shaping pockets of which a plurality are open at all times for manual loading, means for transferring bunches from said carrier pockets to said mechanism, and a wrapper delivery transfer for transferring wrappers from the dies at said delivery position and delivering the wrappers to a bunch in the mechanism.

31. In a cigar machine, the combination with a plurality of wrapper cutting dies, of means for intermittently rotating said dies from a wrapper leaf receiving position to a wrapper delivery position, mechanism for applying a wrapper to a cigar bunch, a traveling carrier having a series of bunch shaping pockets of which a plurality are open at all times for manual loading, means for transferring bunches from said carrier pockets to said mechanism, a wrapper delivery transfer for transferring wrappers from the dies at said delivery position and delivering the wrappers to a bunch in the mechanism, said carrier comprising a drum rotating about a horizontal axis approximately at right angles to the axis of a bunch in said mechanism, and a bunch transfer for receiving a bunch from one of said shaping pockets swinging about an axis transverse to the length of the cigar bunch and delivering the bunch to said mechanism.

32. In a cigar bunch machine, the combination with means for trimming cigar bunches, of a traveling series of bunch shaping pockets at least one of which holds one of the trimmed bunches, a movable locator for locating the trimmed bunch endwise in one of said pockets, a coacting shaping element and mechanism moving said element toward said pocket to shape the trimmed and located bunch.

33. In a cigar bunch shaping machine, the combination with means providing an endless series of cigar shaped pockets having straight parallel wall portions above the shaping portion of the pocket adapted to enclose a cigar bunch on three sides, while leaving the fourth side open, a series of male shaped covers for said pockets adapted to fit within said parallel wall portions to compress the bunch, and devices giving said covers rectilinear movement parallel to said straight wall portions into said pockets, and means for trimming said cigar bunch in said pocket prior to the operation of the pocket and cover thereon to shape the same.

34. A cigar bunch shaper, comprising in combination, a series of bunch shaped pockets having openings in their end walls, means coacting with said openings to trim surplus material of a bunch projecting therethrough, a closure element for said opening and devices moving said element into said opening to push the trimmed portion of the bunch within the pocket and close said opening to form a closed end pocket.

35. A cigar bunch shaper, comprising in combination, a series of bunch shaped pockets having openings in their end walls, means coacting with said openings to trim surplus material of a bunch projecting therethrough, a closure element for said opening and devices moving said element into said opening to push the trimmed portion of the bunch within the pocket and close said opening to form a closed end pocket, and a shaper member having an operating face complementary to the shape of the pocket movable into the pocket to close the same, and shape the bunch therein.

36. A cigar bunch shaping machine comprising in combination, an endless traveling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to close said pockets, and means acting to remove covers from said pockets and transport them at a speed of travel greater in linear movement per unit of time than that of the conveyor to a different portion of the latter and then replace the covers on the pockets.

37. A cigar bunch shaping machine comprising in combination, an endless traveling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, a number of unconnected shaping covers less in number than the number of said pockets adapted to close said pockets, and means acting to separately remove said covers from said pockets and then replace them thereon while leaving a plurality of said pockets exposed for loading with bunches.

38. A cigar bunch shaping machine comprising a continuously revolving shaft, a turret loosely mounted on said shaft, a series of bunch shaping pockets on said turret, means for intermittently turning said turret on said shaft, a number of covers adapted to close said pockets, blocks fastened on said shaft, members slidably mounted on said blocks for movement outwardly and inwardly relative to said turret to remove and replace covers on said pockets, and a cam for moving said members outwardly and inwardly relative to said turret.

39. A cigar bunch shaping machine comprising in combination, an endless series of travelling bunch shaping pockets adapted to receive bunches, said pockets being closed at one end

except for a slot at said end extending downwardly from the upper edge of the pocket and to a position more than half the diameter of the bunch above the bottom of the pocket, and a seating element having a bunch shaped operating face movable into position to fully seat the head end of said bunch below the lower end of said slot to fully shape the tip of the head end of the bunch in said pocket, and means for moving said element into and out of said position.

40. A cigar bunch shaping machine comprising in combination a rotary drum, a series of pockets having openings in the bottom thereof mounted about the periphery of said drum for movement in a circular path, bunch ejector means movable through the openings in said pockets, covers for said pockets, cover operating means movable in a circular path concentric to the drum and adjacent to one end of said drum in a position interfering with communication in an axial direction between the exterior and interior of said drum as a result of said movement, a cam located between said cover operating means and the opposite end of said drum, and mechanism including a cam follower engaging said cam for giving said ejector means movement into and out of ejector position.

41. A cigar bunch shaping machine comprising in combination a rotary drum, a series of bunch shaping pockets mounted about the periphery of said drum for movement in a circular path, covers for said pockets, cover operating means movable adjacent both ends of said drum always in a direction opposite to the movement of said drum and in a position interfering with communication in an axial direction between the exterior and interior of said drum, means for intermittently rotating said drum including a drive shaft external to said drum and the path of said cover operating means, and mechanism driven by said shaft extending into the space between one of said cover operating means and the end of said drum, said mechanism coacting with said drum to rotate the same.

42. A cigar bunch shaping machine comprising in combination a rotary drum, a series of cigar shaped pockets having curved bunch supporting bottoms and openings in the bottom thereof mounted about the periphery of said drum for movement in a circular path, bunch ejector elements movable relative to the bottom and through the openings in said pockets to remove shaped bunches therefrom, covers for said pockets, cover operating means movable adjacent both ends of said drum in a position interfering with communication in an axial direction between the exterior and interior of said drum, a cam located between said cover operating means and the opposite end of said drum, mechanism including a cam follower engaging said cam for giving said ejector element movement into and out of ejector position, and means for intermittently rotating said drum including a drive shaft external to said drum and the path of said cover operating means, and gearing driven from said shaft and extending into the space between one of said cover operating means and the end of said drum, said means coacting with said drum to rotate the same.

43. A cigar bunch shaping machine, comprising in combination, an endless traveling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close said pockets, and means coacting with said covers and said conveyor to close a plurality of pockets of said series with covers, for shaping bunches therein and to leave exposed a plurality of open pockets of the same series for loading, said conveyor comprising a rotatable turret on which said pockets arranged about its periphery, and means traveling in a diretcion opposite to that of said turret to convey said covers peripherally and radially of said turret for closing and opening said pockets.

44. A cigar bunch shaping machine, comprising in combination, an endless traveling conveyor, a series of shaping pockets mounted on said conveyor for movement in an endless path, shaping covers adapted to cooperate with said pockets to close said pockets, and means coacting with said covers and said conveyor to close a plurality of said series with covers for shaping bunches therein and to leave exposed a plurality of open pockets of the same series for loading, said covers being less in number by a plurality of covers than the number of said pockets and being arranged to travel with said pockets during the travel of bunches being shaped therein.

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