

March 31, 1953

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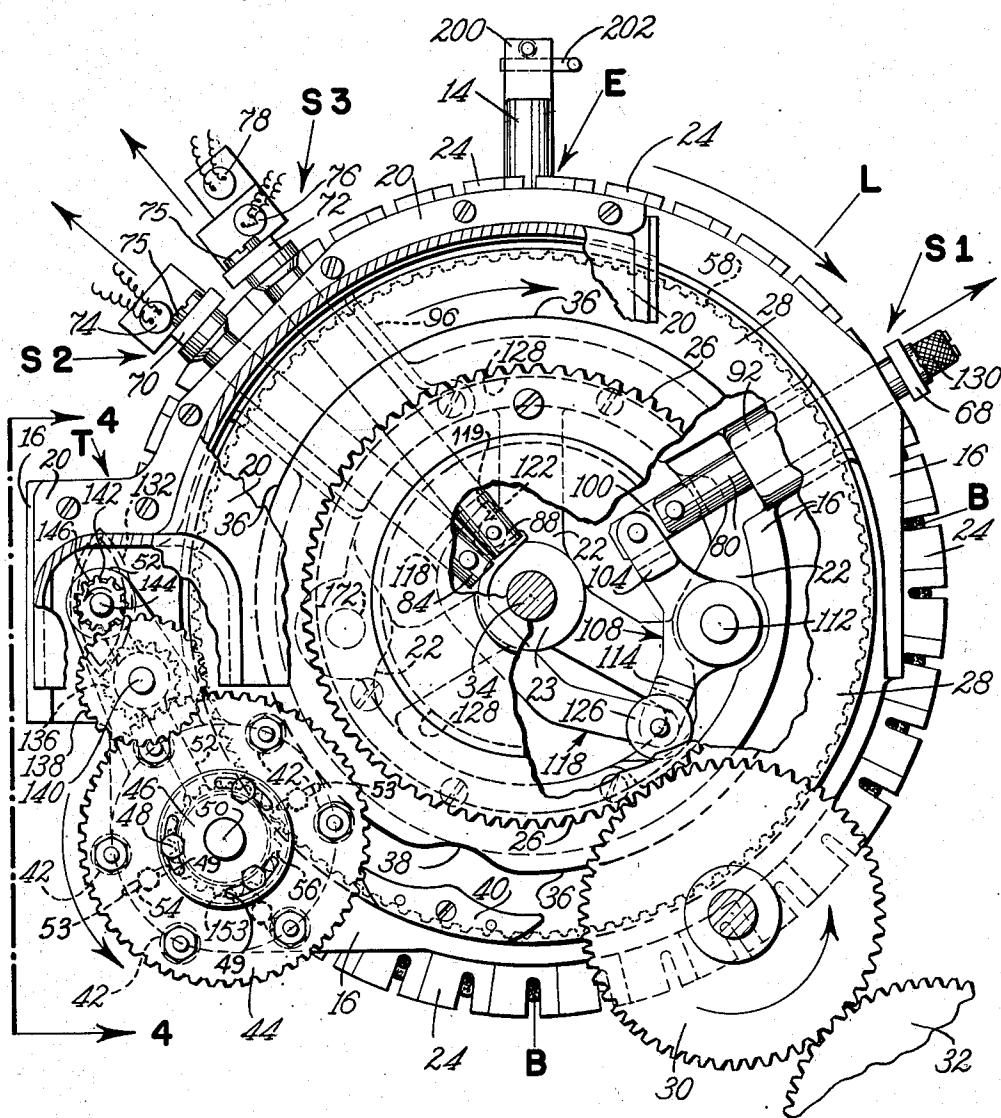
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MOLD TURRET FOR CIGAR MACHINES

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4 Sheets-Sheet 1

FIG. 1



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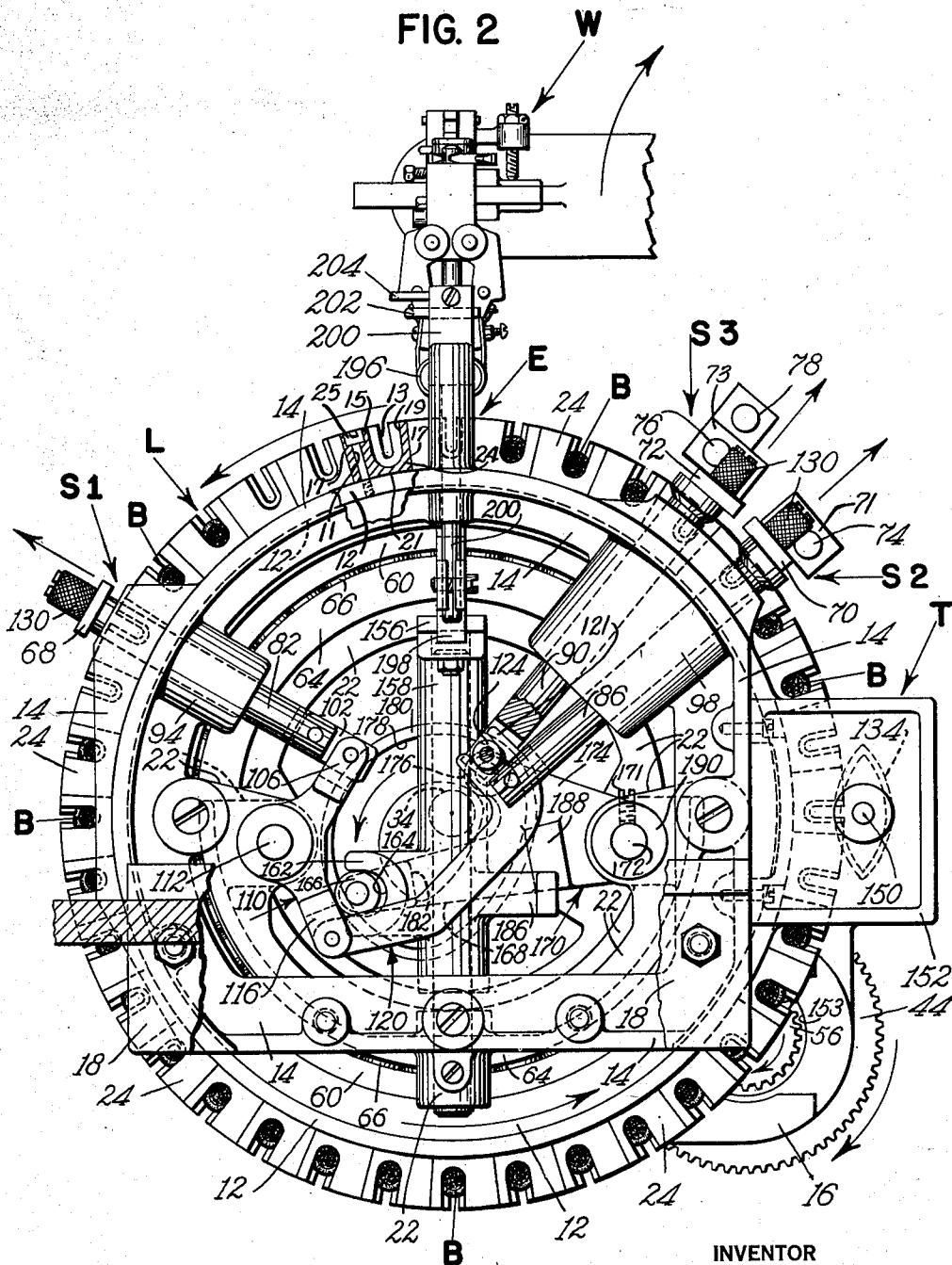
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4 Sheets-Sheet 2



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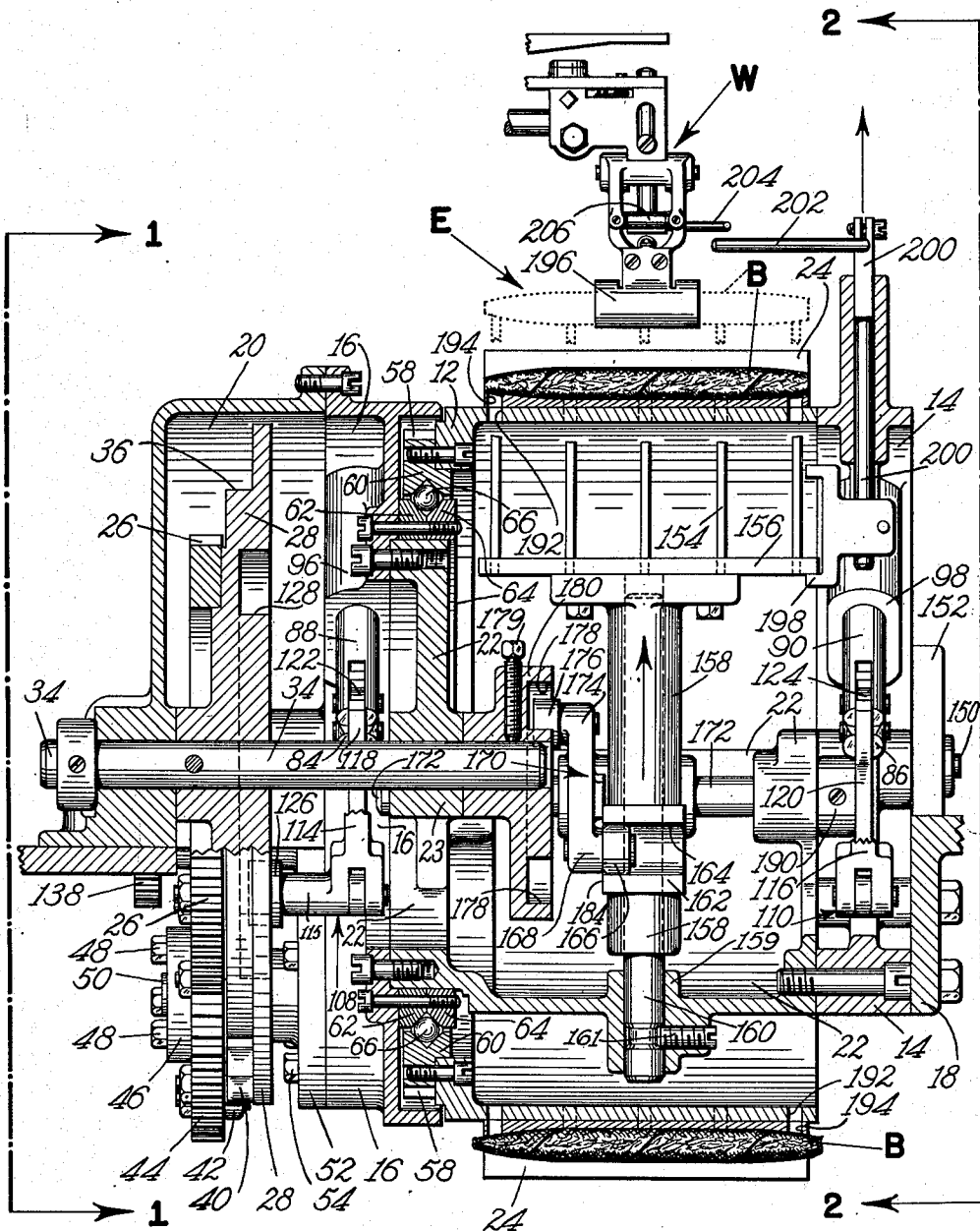
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MOLD TURRET FOR CIGAR MACHINES

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FIG. 3



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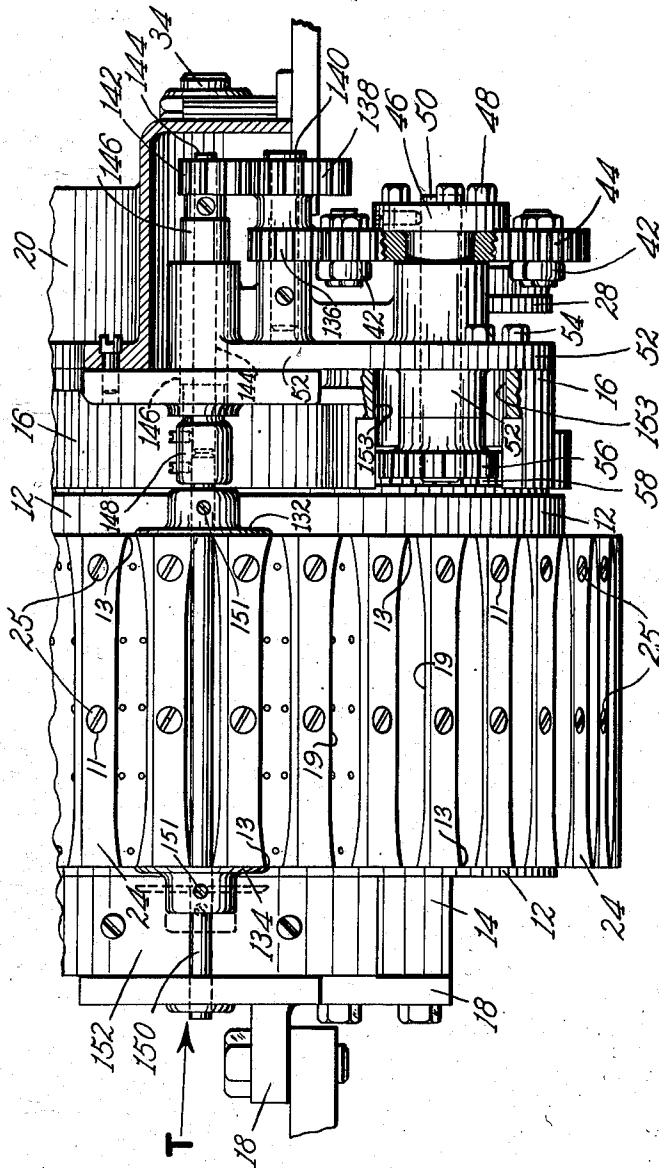
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MOLD TURRET FOR CIGAR MACHINES

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4 Sheets-Sheet 4

FIG. 4



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2,633,135

MOLD TURRET FOR CIGAR MACHINES

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Application June 3, 1947, Serial No. 752,042

17 Claims. (Cl. 131—80)

1

This invention relates to cigar machines, more particularly to improvements in the mold turrets of short filler cigar machines.

One of the main objects of this invention is to provide a mold turret construction wherein there is greater accessibility to the various mechanisms located within the mold turret. Heretofore the shapers or mold covers which coast with the molds on the periphery of the turret to shape cigar bunches inserted in the pockets of the molds were operated by mechanism including a pair of cams arranged at either end of the mold turret. Therefore the mechanisms inside these cams were inaccessible unless one of the cams was removed. In my construction the mechanism for operating the mold covers includes only one cam located adjacent one end of the turret wherefore access may be had through the other end of the turret to various mechanisms inside the turret.

A further object of the invention is to provide improved mechanism for operating the mold covers. In prior constructions wherein a pair of cams were provided it was difficult to exactly align these cams with each other. Therefore binding would result if these cams were not exactly aligned with each other when the operating rods connected to the mold covers were operated by the cams to move the same into or out of the pockets in the molds. Moreover my improved linkage for operating the shapers from one cam assures simultaneous operation thereof.

Another object of the invention is to provide an improved support on which one end of the turret is mounted. My improved support consists of a ball bearing to the outer race of which the turret is secured. This ball bearing has the advantage of reducing the width of the bearing needed to support the turret and provides access to the interior of the turret from the end thereof on which it is supported.

A further object is to provide a mechanism for indexing the turret which may be more conveniently assembled. In my indexing mechanism there is provided an indexing gear carrying rollers which engage the track on a rotating indexing disk and thereby intermittently revolve the indexing gear. The indexing gear is mounted on a pivoted bracket which may be swung about its pivot to position the rollers on the indexing gear in the proper operative relationship to the indexing disk. The bracket also carries a gear train driven from the indexing gear and driving a cutter shaft carrying cutters which trim the ends of the cigar bunch protruding from the

2

pocket in the mold at the trimming station. Thus the bracket may be readily installed and adjusted to position the indexing rollers in the proper operative relationship to the indexing disk, whereby the turret will be intermittently revolved to advance the molds to the various loading, shaping, trimming, and ejecting stations.

Still another object of the invention is to provide a mechanism, which may be readily removed from within the turret, for operating the ejector which delivers the shaped cigar bunch from the mold at the ejecting station to the bunch transfer.

Still another object is to provide improved mechanism for tripping the bunch transfer to cause the same to grip the cigar bunch after it has been ejected from the mold at the ejecting station. This mechanism is arranged adjacent the open end of the turret and is readily detachable from its operating mechanism. Therefore it may be installed and removed without difficulty.

Other objects of this invention are to simplify the construction by which the molds on the mold turret, which are provided with pockets into which the cigar bunches are inserted to be shaped, are retained on the periphery of the mold turret. In this connection a further object of the invention is to provide a construction which will permit the use of different lengths of molds, as required for various lengths of cigar bunches, on the periphery of the same mold turret. Heretofore the molds were inserted in slots formed in the periphery of the mold turret and therefore different mold turrets having slots of various lengths were required for different lengths of molds.

Still another object of the invention is to provide a construction of the molds which will permit them to be assembled on the periphery of the mold turret without any machining of the mold faces and with simple cylindrical machining of the turret. For this purpose the molds may be provided with lateral faces which are formed on a radius of the mold turret and their inner faces are of cylindrical curvature and concentric with the periphery of the mold turret. Therefore the molds may be assembled side by side on the periphery of the mold turret and suitably secured thereon. Preferably the molds may be formed by die-casting them to the exact dimensions required, so that they may be installed on the periphery of the mold turret without machining them. As the length of the molds will conform to the required dimensions thereof, their ends will be located in the proper relationship to the cut-

3

ters which trim the ends of the bunch protruding from slots in the ends of the pocket formed therein if the molds are accurately located on the periphery of the turret. Accordingly the ends of the molds will not need to be machined.

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

In the accompanying drawings which form a part of this specification:

Fig. 1 is an end elevation of my improved cigar bunch molding mechanism, as seen from line 1—1 of Fig. 3, portions of the same being broken away to expose the turret indexing means and the operating means for the associated mechanisms;

Fig. 2 is also an end elevation of my improved mechanism, taken on the line 2—2 of Fig. 3 and showing the operating mechanisms for the shapers and the bunch ejector;

Fig. 3 is a sectional side elevation of the improved cigar bunch molding turret; and

Fig. 4 is a partial side elevation of the turret taken on line 4—4 of Fig. 1.

In the accompanying drawings, the invention is exemplified in a cigar bunch mold turret mechanism adapted to mold or shape cigar bunches for cigarillos or cheroots, but it will be understood that if molds of the proper shape and size are used cigar bunches suitable for other types of short filler cigars may be formed. My mold turret mechanism may be provided with a mold turret 12 rotatably mounted between two main stationary housings 14 and 16 (Figs. 3 and 4). Housing 14 is securely bolted to a bracket 18, and housing 16 is bolted to a stationary housing 20. Bracket 18 and housing 20 are in turn secured to suitable supports forming a part of a short filler cigar machine which is equipped with my improved mold turret mechanism. Referring to Fig. 3, it will be seen that housing 14 is secured to the outer end of a semi-cylindrical stationary supporting member 22 whose inner end is secured to housing 16. The inner end of member 22 has an annular portion, which is connected by spokes to a central hub 23, the annular portion being secured to housing 16. On the periphery of turret 12 are secured a number of cigar bunch molds 24 which are provided with radial lateral faces 17 abutting adjoining molds, and inner or bottom faces 21 concentric with and secured on the periphery of turret 12. The molds 24 may be formed in any suitable manner as by die-casting, and are secured to the periphery of turret 12. Screws 25 pass through holes 11 formed in molds 24 and are threaded into the mold turret 12 to retain the molds thereon. These holes 11 extend radially of the periphery of turret 12 and are countersunk to admit the heads of screws 25.

Each of the molds 24 has a top face 15 provided with a pocket 19 adapted to receive a cigar bunch and advance it successively to shaping station S1, trimming station T, shaping stations S2 and S3, and ejecting station E. These pockets 19 have a configuration conforming to the desired shape of the cigar bunches inserted therein. Slots 13 are provided at each end of these pockets through which the ends of the inserted cigar bunches protrude to be trimmed off at the trimming station T. After a cigar bunch B has been inserted, either manually, or mechanically, by mechanism such as shown in the patent to J. F. Halstead No. 2,443,453 dated June 15, 1948, into

4

a mold at the loading station L (Figs. 1 and 2) the turret 12 is advanced intermittently towards the shaping station S1 by an indexing mechanism which will now be described.

These molds 24 may be of varying lengths ranging from the width of the turret down to its width between the screws 25 (see Fig. 4). Heretofore, molds were inserted between peripheral supports or retainers on the surface of the mold. These peripheral supports or retainers corresponded in length to the mold and would therefore prevent cutting off the protruding ends of the tobacco if a smaller mold were inserted. The use of a smaller mold pocket in the present invention requires only relatively simple adjusting of the cutting elements 132 and 134. Hence a given turret is adaptable to molds of various lengths.

As shown in Figs. 1 and 3 of the drawings, a ring gear 26 secured to an indexing disk 28 is driven continuously by a gear 30 meshing with a gear 32 which is part of a gear train, not shown, that is driven from the main drive of the cigar machine. Indexing disk 28 is secured to a shaft 34, Fig. 3, revolvably supported in bearings in housing 20 and the hub 23 of member 22. The disk 28 has a circular track 36 formed on its periphery with a low section 38, Fig. 1. A cam lug 40 is secured to disk 28 in a position opposite the track section 38 to admit therebetween one of the index rollers 42 pivotally mounted on a gear 44. Gear 44 is mounted on the hub of and secured to the flange of sleeve 46 by screws 48 (Fig. 4). Sleeve 46 is fastened to a shaft 50 mounted in a support bracket 52 adjustably fastened to housing 16 by screws 54. Secured to the other end of shaft 50 is a gear 56, Fig. 4, meshing with a gear 58 which is formed on the periphery of the outer race 60, Fig. 3, of a large ball bearing support for the turret 12. The inner end of turret 12 is fastened to race 60. Thus it will be seen that the turret 12 rotates intermittently between housings 14 and 16 and around member 22. The inner race of the ball bearing support for turret 12 is split to facilitate assembly and consists of two sections 62 and 64 which are mounted on the periphery of the inner end of member 22 and are also fastened to housing 16. Between these two races are a plurality of ball bearings 66, Fig. 3. Thus during each revolution of disk 28 the turret 12 will be turned sufficiently to advance each mold 24 to the next station. This indexing of the turret will advance each mold successively to the respective mechanisms at the loading, shaping, trimming and ejecting stations.

The holes 53 in bracket 52 through which screws 54 are inserted are enlarged to permit said bracket to be adjusted. In case there is any play between the index rollers 42 and the track 36 of disk 28, the bracket 52 may be adjusted to eliminate the same, thereby insuring more accurate indexing and smoother operation at all times. Since the screws 48 pass through enlarged holes 49 in the flange of sleeve 46, when screws 48 are loosened, the sleeve 46 may be turned relative to gear 44. Since sleeve 46 is secured to one end of the shaft 50 on whose other end is secured the gear 56 meshing with the gear 58 connected to turret 12, the turret is thereby adjusted circumferentially to secure alignment between each mold and the respective mechanisms at the loading, shaping, trimming and ejecting stations. It may be noted that both of these adjusting devices are simple in construction and

5

are readily accessible. Moreover the adjustment of sleeve 46 may be performed without dismantling the mold turret which was not possible heretofore.

When a cigar bunch is advanced by a mold to the shaping station S1, there are two other cigar bunches in the respective molds at the shaping stations S2 and S3. All three bunches are therefore pressed into their molds simultaneously by their respective shapers or mold covers, not shown. These shapers are similar to those described in the above-mentioned patent to J. F. Halstead, Patent No. 2,443,453. As the shapers enter their respective mold pockets 19, they impart to the cigar bunches in these pockets the desired shape. For this purpose the pockets in molds 24 and the operating faces of the shapers have a predetermined configuration corresponding to the desired shape of the cigar bunch to be shaped in the mold pockets. These shapers are mounted on cover plates 68, 70 and 72 at their respective stations S1, S2, S3. Plates 70 and 72 carry electric heating elements 74 and 76, respectively. Each heating element imparts heat to its respective shaper to dry the cigar bunch during the shaping thereof. A thermostatic control 78 mounted on heating element 76 is connected to each heating element 74 and 76 by means not shown for temperature regulation thereof. This thermostat 78 is activated only by heating element 76. This amount of control has been found sufficient in practice although, of course, a similar thermostat could also be mounted on heating element 74.

Each cover plate 68, 70, 72 is detachably mounted on pairs of parallel operating rods 80, 82 and 84, 86 and 88, 90, respectively. These operating rods are slidably supported in suitable integral bosses of housing 16 and 14 and are arranged radially of turret 12. Rods 80 and 82 are supported in bosses 92 and 94 of housings 16 and 14 respectively. Rods 84 and 88 are slidably supported in boss 96 of housing 16, and rods 86 and 90 are slidably supported in boss 98 of housing 14. The inner ends of rods 80 and 82 are slotted and pivotally connected to one end of the links 100 and 102, respectively. The other ends of links 100 and 102 are pivotally connected to the slotted arms 104 and 106 of the bell crank levers 108 and 110, respectively, which are fastened to the opposite ends of a shaft 112 loosely mounted in suitable bearings that are an integral part of supporting member 22. The relative position of levers 108 and 110 is as shown in Fig. 3, namely, inside housings 16 and 14 respectively. Levers 108 and 110 are also provided with integral slotted arms 114 and 116 which are pivotally connected to one end of rods 118 and 120. The other ends of rods 118 and 120 are bifurcated and are pivotally connected adjacent the bifurcations to the inner ends of rods 84 and 86 respectively. The bifurcated portions 119 and 121 of connecting rods 118, and 120, respectively, are located in the slotted inner ends of rods 88 and 90 and engage rollers 122 and 124 respectively, mounted on cross-pins passing through the slotted inner ends of rods 88 and 90. Lever 108 is provided on its arm 114 with an integral boss 115 on which is pivotally mounted a cam roller 126 engaging with a cam track 128 cut in the inner face of index 28, Fig. 3. The cam track 128 has a predetermined shape to operate the shapers at shaping station S1, S2, and S3 simultaneously in properly timed relationship with the rest of the machine.

6

It might be pointed out here that in earlier machines of this type that each shaper which was mounted on a pair of operating rods were actuated from a pair of identical cams. Therefore, when the machine was assembled, the operating rods were entirely enclosed and hence were inaccessible. In case said pair of cams were not exactly aligned, binding would result when the operating rods were lifted. A torque was also created in the old type rods due to the type of assembly which created further binding. Moreover the construction for raising all the shapers had a certain amount of lost motion. However in this present type of construction, there is only one operating cam instead of two which precludes the possibility of binding by unequal camming action, and the type of linkage employed in this machine insures simultaneous action of all three shapers.

For easy detachment or exchange of these shapers the cover plates 68, 70 and 72 are provided with a slot (not shown) at one end engaging with a stud 75 held by its respective operating rod. The opposite end of each cover plate also has a slot and a circular conical indentation (not shown) engaging with the lower conical portion of a spring mounted locking member 130 supported and guided by a suitable stud held in the other operating rod. For a more detailed description of this construction reference may be made to the above-mentioned patent of J. F. Halstead. It might also be pointed out that heating elements 74 and 76 can be removed from their housings 71 and 73 on covers 70 and 72, respectively, so that the cigar bunches can be shaped with or without the aid of heat, as desired.

Heating elements 74 and 76 are of a kind commonly known as a "cartridge" type. They are cylindrical in form and are slidably inserted in housings 71 and 73. The housings 71 and 73 are functionally integral with their respective covers 70 and 72. In practice, these housings are generally of a different type of metal and are secured by screws to their respective covers.

After the bunch B has passed shaping station S1 it is advanced intermittently as previously described until it reaches trimming station T. The ends of the cigar bunches protrude from the slots in the ends of the pockets formed in molds 24, as shown in the case of the lowermost bunch B in Fig. 3, until they reach the trimming station T. At this station they are cut off while passing a pair of rotary trimming knives 132 and 134, Fig. 4. The construction and operation of knives 132 and 134 is similar to the knives shown in the above-mentioned Halstead patent. These knives are of a somewhat oval shape and rotate intermittently in the direction of the arrow indicated in Fig. 1 when a mold pocket passes the trimming station. The intermittent motion of knives 132 and 134 is controlled by the gear 44, Fig. 4, which meshes with a gear 136 which may be formed integrally with or secured to a gear 138 loosely mounted on a stud 140 held in bracket 52. Gear 138 meshes with a gear 142 secured to shaft 144 supported in bushing 146 held in bracket 52, the bushing 146 being inserted into a suitable opening in housing 16 through which shaft 144 projects. A coupling 148 connects the projecting end of shaft 144 to the knife shaft 150 on which the trimming knives 132 and 134 are secured at either end of the turret molds, as shown in Fig. 4. The other end of shaft 150 is supported in a suitable bearing bracket 152 (Fig. 2) secured to housing 14. The above mentioned bushing 146 is

tight in bracket 52 while the portion thereof in housing 16 acts as a pivot point about which the bracket 52 pivots when screws 54 are loosened in holes 53 for the adjustment of said bracket to remove any excess play between index rollers 42 and their track 36. The coupling 148 has a shoulder on one end which fits freely into the hole in housing 16 for bushing 146 and abuts against the end face of the same.

A feature of this invention is that the bracket 52 with all its component gears and shafts may be removed as follows. The set screw in coupling 148 bearing against shaft 144 is loosened and the three screws 54 are removed and the entire unit including gear 56 may be removed in case of necessity. A hole 153 is provided in housing 16 to allow gear 56 to pass through. This removable feature is also a convenience permitting sub-assembly on the bench of the entire unit.

After the bunch B has passed the trimming station T, it is advanced intermittently by the turret towards shaping stations S2 and S3 where it is successively shaped by the shapers at these two stations, as heretofore mentioned. The cigar bunch, now properly formed, trimmed and shaped, continues advancing to ejecting station E. At this station, the cigar is ejected from the mold by a set of suitable ejecting rods 154, Fig. 3, mounted on a cross bar 156 detachably secured to the top of a sleeve 158 slidably mounted on a post 160 removably secured in a suitable boss 159 of member 22 by a set screw 161 as seen in Fig. 3. Sleeve 158 is provided with an integral arm 162 projecting at right angles to the same in which there is formed a U-shaped slot 164 which is engaged by a roller 166 mounted on an arm 168 of a cam lever 170 secured to a shaft 172 loosely mounted in suitable bearings of member 22, Fig. 3. Cam lever 170 is also provided with another integral arm 174 on which is mounted a cam roller 176 engaging a cam track 178 in a lifted cam 180 suitably secured as by a set screw 179 to the end of shaft 34, Fig. 3. This cam acts in properly timed relationship with the rest of the machine to eject the finished bunch at the correct moment.

In order to prevent sleeve 158 from turning and causing misalignment of the ejecting rods 154 with aligned holes 192, 194 in the turret and mold at the ejecting station E, which will be herein-after described, the arm 168 of lever 170 is provided with an enlarged boss 182 (Fig. 2) having a flat face against which roller 166 is mounted. The flat face of said boss is in contact with a flat side face 184 (Fig. 3) of arm 162 of sleeve 158. Said sleeve is also provided with another integral arm 186 extending from said sleeve and diametrically opposed to arm 162, Fig. 2. This arm 186 is also provided with a finished boss having a flat face which engages with the flat face of another finished boss 188 on lever 170 (Fig. 2). In order to maintain contact between these two pairs of flat faces on arms 162, 186 and lever 170, a collar 190 is secured to one end of shaft 172 on which lever 170 is secured (Fig. 3).

The ejecting rods 154 are operated by the mechanism just described to lift the finished bunch out of the mold at the ejecting station E. The rods 154 pass through suitable holes 192 in the turret 12 which are aligned with holes 194 in the molds. The finished bunch is lifted into a position between the open jaws 196 of a bunch transfer device W similar to one described in Patent No. 2,334,174, as shown in dotted lines in Fig. 3. As the cross bar 156 in which the ejecting

pins 154 are mounted is raised, one of its ends comes in contact with the upper end of a C-shaped member 198 secured to the lower end of a plunger 200 slidably mounted in a suitable boss integral with the top of housing 14, Fig. 3. The plunger is thus carried upwards. When the finished cigar bunch being ejected from the mold approaches its uppermost position a protruding pin 202 secured in the upper portion of said plunger contacts an L-shaped pin 204 protruding from the toggle joint of a toggle 206 to which the jaws 196 of the transfer device W are secured, and pushes said pin upwards to close said jaws. Pin 208 of said Patent 2,443,453 corresponds functionally to L-shaped pin 204 herein. Therefore, when the finished cigar bunch has arrived at its highest position between the open jaws 196, the closing of these jaws is effected and the finished cigar bunch is firmly held in the transfer device W while it is transferred to a device of conventional construction for applying a wrapper to the cigar bunch.

In order to guide and prevent the turning of plunger 200 and stop same on its return, the upper portion of the plunger is rectangular in shape and slides in a slot in the upper portion of its supporting boss. Plunger 200 is lowered by its own weight, or by the engagement of cross bar 156 during its downward movement with the lower end of C-shaped member 198. Thus the plunger 200 will be returned to its lowermost position illustrated in Fig. 3.

The open end construction of this machine as shown in Fig. 2 provides easy access to parts and allows same to be checked and tested for tightness or looseness of cams, cam rollers, levers, gears and linkages. It also allows certain parts to be inserted and easily replaced as can be shown by the following illustration.

A broken ejecting pin (previously necessitating disassembly of the entire unit) may be replaced by detaching cross bar 156 from sleeve 158. The transfer tripping plunger 200 may be removed by loosening C-shaped member 198 and then removing the plunger. The set screw 161 holding post 160 in member 22 may be removed and the post slid up into sleeve 158, and both post and sleeve may then be taken out. Lever 170 may be removed from shaft 172 when the set screw 171 holding it on said shaft is loosened. The set screw 179 holding cam 180 to shaft 34 may be loosened and the cam taken out. This accessibility is due to the unique ball bearing type of support of turret 12 which allows the inside of the turret to be free of any incumbrance. The ball bearing support also facilitates smoother operation of the machine. Moreover the construction of this machine allows the entire unit to be bench assembled and tested before assembly with the main cigar machine.

What is claimed is:

1. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to one end only of said turret, whereby access may be had to the interior of the turret through the end of said turret which is remote from said revoluble support, a series of molds on said turret, each of said molds having a pocket adapted to receive a cigar bunch, means for intermittently rotating said turret to advance each of said molds successively to a shaping station, a shaper adapted to enter the pocket in the mold at the shaping station and coact therewith to shape a cigar bunch located therein, members connected to said shaper for operating it, said op-

9

erating members extending radially of said turret, a stationary support within said turret, a single constantly rotating cam adjacent said revoluble support, a pair of levers fulcrumed on said stationary support and connected to a pair of said operating members, and a cam follower on one of said levers engaging said cam whereby said operating members will be operated to move the shaper into the pocket at the shaping station.

2. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to said turret, a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, means for intermittently rotating said turret to advance each of said molds successively to a plurality of shaping stations, a plurality of shapers adapted to enter the pockets in the molds at the shaping stations and coact therewith to shape cigar bunches located therein, and mechanism connected to said shapers for moving the latter into the mold pockets at the shaping stations, said mechanism including a single rotating cam only and single cam roller only operated by said cam and linked to said shapers to simultaneously move said shapers into the pockets at the shaping stations.

3. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to one end only of said turret comprising an inner stationary ball bearing race and an outer revoluble race having a diameter substantially equal to the close diameter of the hollow turret, means securing said outer race to the periphery of the hollow turret, a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, and rotary means for intermittently rotating said turret to advance each of said molds successively to a predetermined position.

4. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to one end only of said turret, a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, and means for intermittently rotating said turret to advance each of said molds successively to a predetermined position, mechanisms to coact with said molds at a predetermined position, said revoluble support including an inner stationary race, an outer revoluble race and ball bearings supporting said outer revoluble race and said inner stationary race, said revoluble support having a diameter substantially equal to the diameter of the hollow turret to admit said mechanisms into the hollow turret through the end at which said turret is mounted.

5. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to one end only of said turret, a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, and means for intermittently rotating said turret to advance each of said molds successively to a predetermined position, said turret rotating means including a gear secured to said turret, a pivoted bracket, a pinion mounted on said bracket and meshing with said gear, a constantly rotating indexing disk having a track, an indexing gear mounted on said bracket and connected to and driving said pinion, and equally spaced rollers on said indexing gear engaging said track to cause said indexing gear to be intermittently turned as each of said rollers successively engages said track to advance each

10

mold successively to a predetermined position, whereby said rollers may be located in proper operating position relative to said indexing disk by turning said bracket about its pivot.

6. In a cigar machine, the combination with a revoluble turret, of a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch and said pockets having slots at their ends through which the ends of the cigar bunch protrude, means for intermittently rotating said turret to advance each of said molds successively to a station at which the ends of the cigar bunch protruding through said slots are trimmed, mechanism for trimming the protruding ends of the cigar bunches including a pair of rotary knives arranged to trim the protruding ends of the cigar bunch at the trimming station, a shaft on which said knives are mounted, said turret rotating means including a constantly rotating indexing disk coaxial with said turret and having a track formed thereon, a primary gear connected to said turret and coaxial therewith, a secondary gear meshing with and driving said primary gear, an indexing member connected to and driving said secondary gear, rollers mounted on said indexing member, each of said rollers being adapted to engage the track on said indexing disk successively whereby said indexing member will be turned and said turret will be intermittently rotated, a bracket pivotally connected to said cutter shaft, said indexing member and secondary gear being mounted on said bracket whereby said bracket may be turned about said cutter shaft to adjust said rollers relatively to the track on said indexing disk.

7. In a cigar machine, the combination with a hollow intermittently rotating turret; of a series of molds on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, said molds and said turret being provided with aligned perforations and the perforations in the molds communicating with said pockets; and means for ejecting the cigar bunch from the mold at the ejecting station of said turret including a stationary support arranged within said turret, a shaft secured to said support and extending radially of said turret, a carrier having a hollow shaft slidably mounted on said first-mentioned shaft, said hollow shaft having a flat lateral projection, a series of pins secured to said carrier and arranged to pass through the perforations in said turret and the aligned perforations of the mold located at the ejecting station to eject the cigar bunch from said mold, and a device for moving said carrier outwardly on said first-mentioned shaft to eject the cigar bunch from the mold pocket at the ejecting station including a member on said device to engage said lateral projection to prevent rotation of said carrier.

8. In a cigar machine, the combination with a hollow intermittently rotating turret; of a series of molds on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, said molds and said turret being provided with aligned perforations and the perforations in the molds communicating with said pockets; and means for ejecting the cigar bunch from the mold at the ejecting station of said turret including a stationary support arranged within said turret, a stationary member secured to said support and extending radially of said turret, a carrier slidably mounted on said member, a series of pins secured to said carrier and

11

arranged to pass through the perforations in said turret and the aligned perforations of the mold located at the ejecting station to eject the cigar bunch from said mold, a device for moving said carrier outwardly on said member to eject the cigar bunch from the mold pocket at the ejecting station, said carrier having a pair of lateral projections, and said device including a shaft extending into the interior of said turret, a cam lever fulcrumed on said shaft, a roller on said cam lever engaging one of said projections, a cam roller on said lever, and a rotating cam engaging said cam roller whereby said carrier is operated to cause ejection of the cigar bunch in the mold at the ejecting station.

9. In a cigar machine, the combination with a hollow intermittently rotating turret; of a series of molds on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, said molds and said turret being provided with aligned perforations and the perforations in the molds communicating with said pockets; and means for ejecting the cigar bunch from the mold at the ejecting station of said turret including a stationary support arranged within said turret, a stationary member secured to said support and extending radially of said turret, a carrier slidably mounted on said member, a series of pins secured to said carrier and arranged to pass through the perforations in said turret and the aligned perforations of the mold located at the ejecting station to eject the cigar bunch from said mold, a device for moving said carrier outwardly on said member to eject the cigar bunch from the mold pocket at the ejecting station, said carrier having a pair of lateral projections, and said device including a shaft extending into the interior of said turret, a cam lever fulcrumed on said shaft, a roller on said cam lever engaging one of said projections, a cam roller on said lever, and a rotating cam engaging said cam roller whereby said carrier is operated to cause ejection of the cigar bunch in the mold at the ejecting station, said lateral projections on said carrier and said cam lever having vertical flat surfaces engaging each other to prevent turning of said carrier on said member.

10. In a cigar machine, the combination with a revoluble turret, of a series of molds on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, a pair of shapers adapted to coact simultaneously with a pair of non-adjoining substantially oppositely disposed pockets in said molds to shape cigar bunches therein, two pairs of operating members extending radially of said turret, each pair of operating members being connected to the ends of one of said shapers, a pair of stationary supports in which said members are slidably mounted, and mechanism for operating said operating members, including a bell crank having one arm pivotally connected to one pair of operating members, and the other arm pivotally connected to the other pair of operating members, and a device for rotating said bell crank whereby said operating members will be simultaneously operated to move said shapers into and out of said non-adjoining pockets.

11. In a cigar machine, the combination with a revoluble turret, of a series of molds on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, a plurality of shapers adapted to coact with a plurality of the pockets in said molds to shape cigar bunches therein, pairs of operating mem-

12

bers extending radially of said turret, each pair of operating members being connected to the ends of one of said shapers, stationary supports in which said operating members are slidably mounted, a shaft within said turret, a pair of levers secured on said shaft and pivotally connected to the inner ends of one pair of said operating members, links connecting said levers to the other operating members, a constantly rotating cam, and a cam roller on one of said levers engaging said cam whereby said operating members will be simultaneously operated to move said shapers into and out of said pockets.

12. In a cigar machine, the combination with a hollow turret, of a revoluble support connected to one end only of said turret, said revoluble support including a revoluble annular member secured to said turret and a stationary annular member on which said revoluble annular member is mounted, a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, means for intermittently rotating said turret to advance each of said molds successively to a predetermined position, mechanism within the turret including a stationary support projecting into said turret through said revoluble turret support, an ejector slidably mounted on the stationary support and a rotating cam operative to move said ejector to eject cigar bunches from each of said mold pockets successively at a predetermined station of said turret, a cigar bunch transfer adapted to grip a cigar bunch ejected from said turret, a stationary support adjacent the end of the turret which is remote from said revoluble support, and a device slidably mounted in said stationary support and adapted to engage said cigar bunch transfer to cause the same to grip a cigar bunch ejected from one of said mold pockets by said mechanism.

13. In a cigar machine, the combination with a revoluble turret, of a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, and means for intermittently rotating said turret to advance each of said molds successively to a plurality of stations, said turret rotating means including a constantly rotating indexing disk coaxial with said turret and having a track formed thereon, a primary gear connected to said turret and coaxial therewith, a secondary gear meshing with and driving said primary gear, a rotary indexing member connected to and driving said secondary gear, rollers mounted on said indexing member, each of said rollers being adapted to engage the track on said indexing disk successively whereby said indexing member will be turned and said turret will be intermittently rotated, and a pivoted bracket, said indexing member and secondary gear being mounted on said bracket whereby the latter may be turned about its pivot to adjust said rollers relatively to the track on said indexing disk.

14. In a cigar machine, the combination with a hollow turret open at both ends, of a bearing comprising an inner stationary race and an outer revoluble race, said stationary race having a diameter substantially equal to the diameter of said turret on which one end only of said turret is supported whereby access may be had to the interior of the turret through either end thereof, and a series of molds on said turret, each of said molds having a pocket adapted to receive a cigar bunch.

15. In a cigar machine, the combination with

a hollow turret, of a stationary member having a circular periphery coaxial with said turret and of substantially equal diameter, one end only of said turret being revolubly mounted on the periphery of said member whereby access may be had to the interior of the turret through the end thereof which is remote from said member, a series of molds on said turret, each of said molds having a pocket adapted to receive a cigar bunch, shapers adapted to enter the pockets in the molds to coact therewith to shape cigar bunches located therein, ejecting means to eject cigar bunches from the pockets subsequent to said shaping, and constantly rotating drive means mounted co-axially to said turret and adjacent said stationary member and simultaneously operating said shapers and said ejecting device in properly timed relation.

16. In a cigar machine, the combination with a revoluble turret, of a series of molds secured on the periphery of said turret, each of said molds having a pocket adapted to receive a cigar bunch, and means for intermittently rotating said turret to advance each of said molds successively to a plurality of stations, said means including a constantly rotating indexing disk coaxial with said turret and having a track formed thereon, a primary gear connected to said turret and co-axial therewith, a pivoted bracket, a shaft in said bracket, a rotary indexing member adjustably mounted on said shaft to permit circumferential adjustment of said member relative to said shaft, rollers on said indexing member adapted to engage the track of said indexing disk successively whereby said indexing member and said shaft will be intermittently rotated, and a pinion secured to said shaft and engaging said primary gear to transmit the intermittent rotation of said indexing member to said turret and whereby said turret rotating means may be adjusted in their operative positions by pivoting said bracket and circumferentially adjusting said indexing member.

17. In a cigar machine, the combination with a hollow cylindrical turret, of means for detachably supporting an interchangeable series of

molds of variable sizes, the molds of each series being of uniform size, each mold formed of a unitary piece of material and provided with a pocket in its upper face extending from one end to the other end of the mold, said pocket being adapted to admit a cigar bunch and having slots formed in the ends of the pocket through which the ends of an inserted cigar bunch will protrude to permit the same to be trimmed, the bottom face of the mold having a curvature concentric with the periphery of the turret to which the mold will be secured, the lateral faces of said mold extending along radii of the turret to which the mold will be secured whereby said molds of each series may be assembled side by side on the periphery of the turret and adjustable cutting means for trimming the protruding ends of the cigar bunches, including a shaft and cutting element slidably mounted on said shaft, and means to secure said cutting means in adjusted position in relation to a series of molds of a given size so that molds of varying length may be adapted for use on said turret of said cigar machine.

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