May 23, 1944. H. H. WHEELER 2,349,320

TURRET SHAPING MACHINE FOR CIGARS

Filed July 16, 1938 3 Sheets-Sheet 1

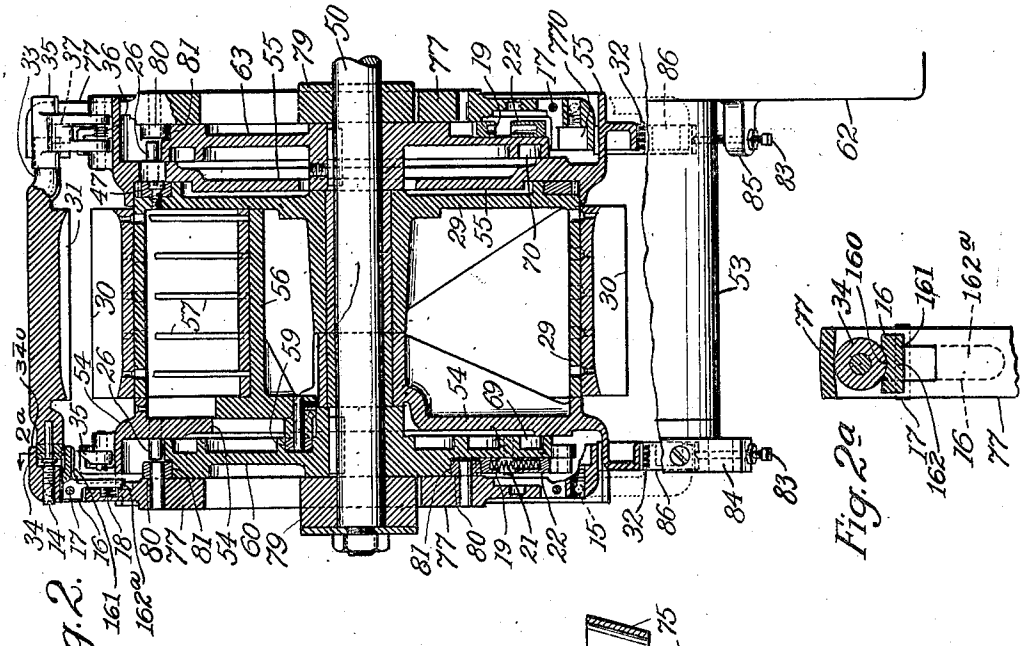


Fig. 2.

Fig. 2a

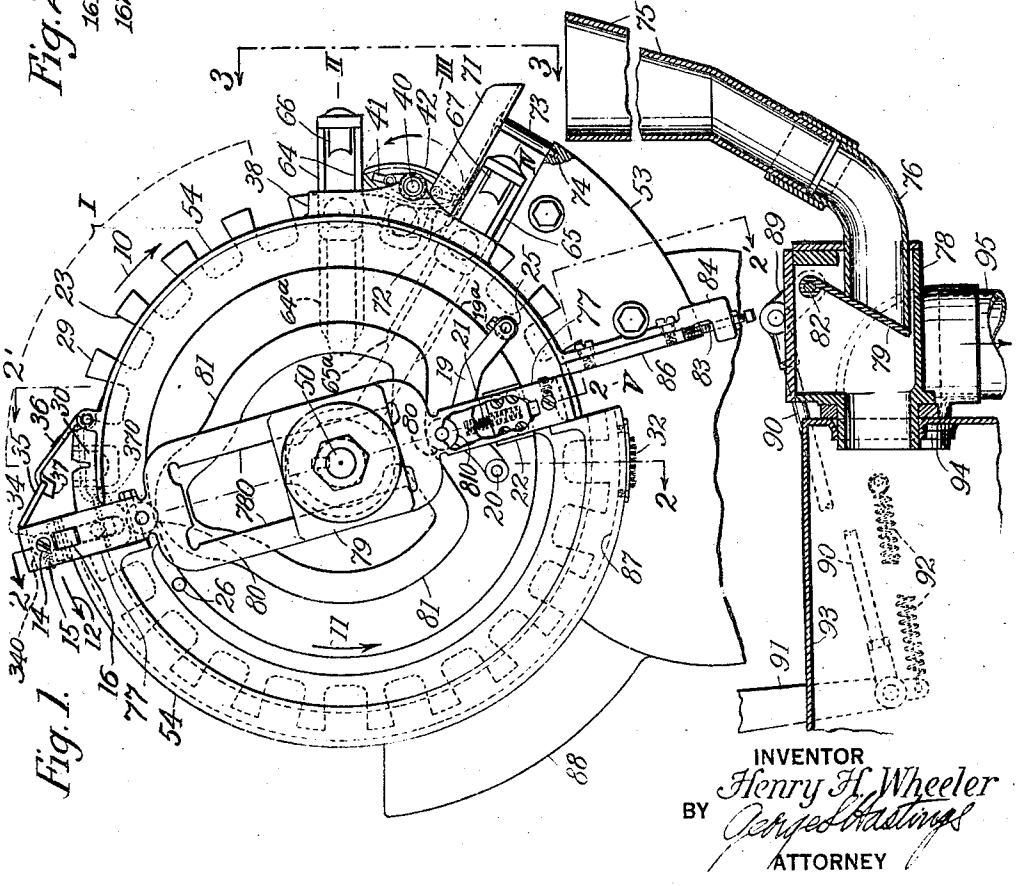


Fig. 1.

INVENTOR
Henry H. Wheeler
BY George Hastings
ATTORNEY

May 23, 1944. H. H. WHEELER 2,349,320

TURRET SHAPING MACHINE FOR CIGARS

Filed July 16, 1938 3 Sheets-Sheet 2

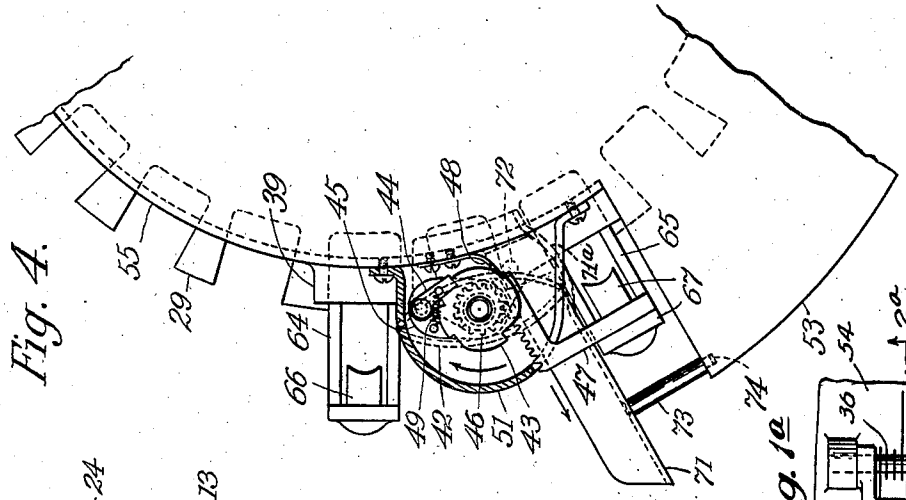


Fig. 4.

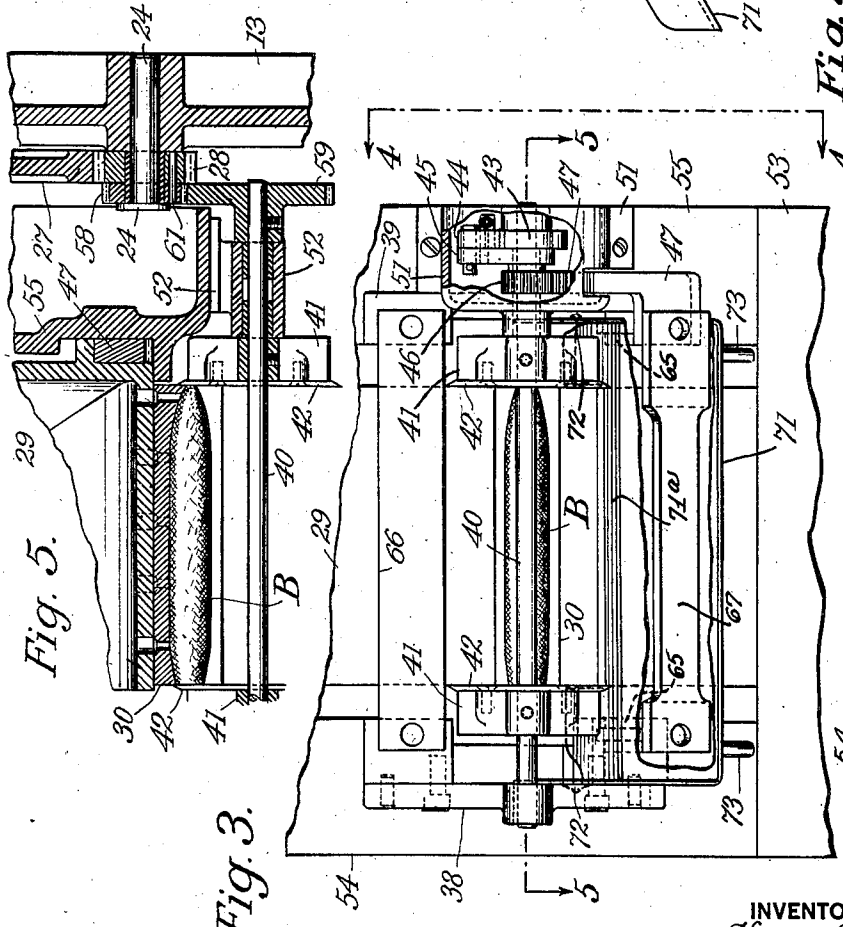


Fig. 5.

Fig. 3.

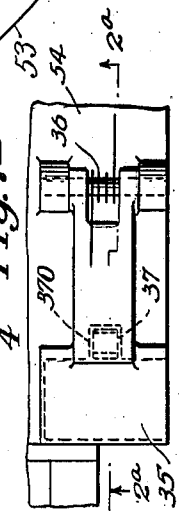


Fig. 1a

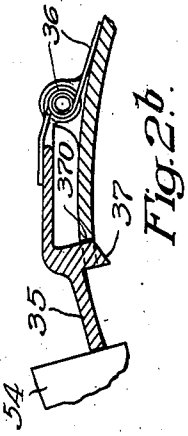


Fig. 2b

INVENTOR
Henry H. Wheeler
BY George Stallings
ATTORNEY

May 23, 1944. H. H. WHEELER 2,349,320

TURRET SHAPING MACHINE FOR CIGARS

Filed July 16, 1938 3 Sheets-Sheet 3

Fig. 2.

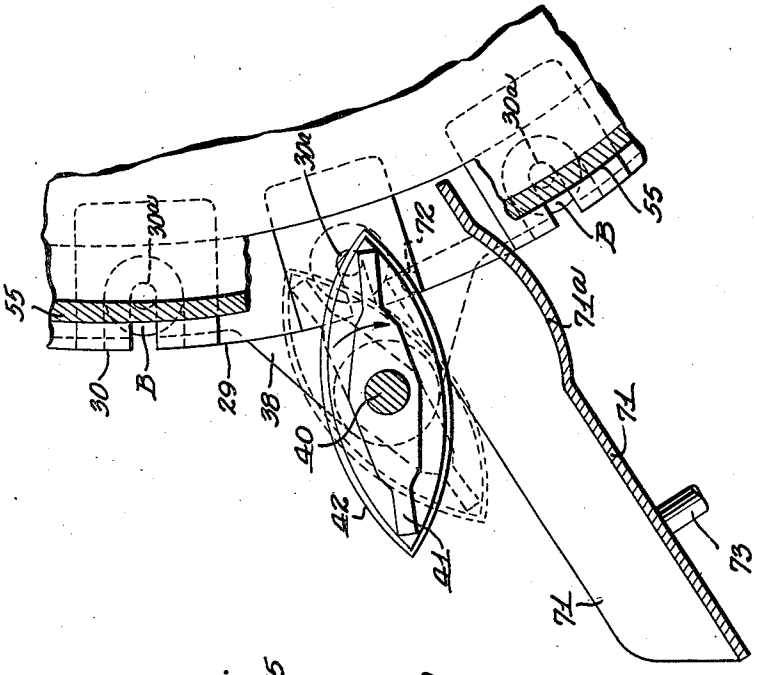
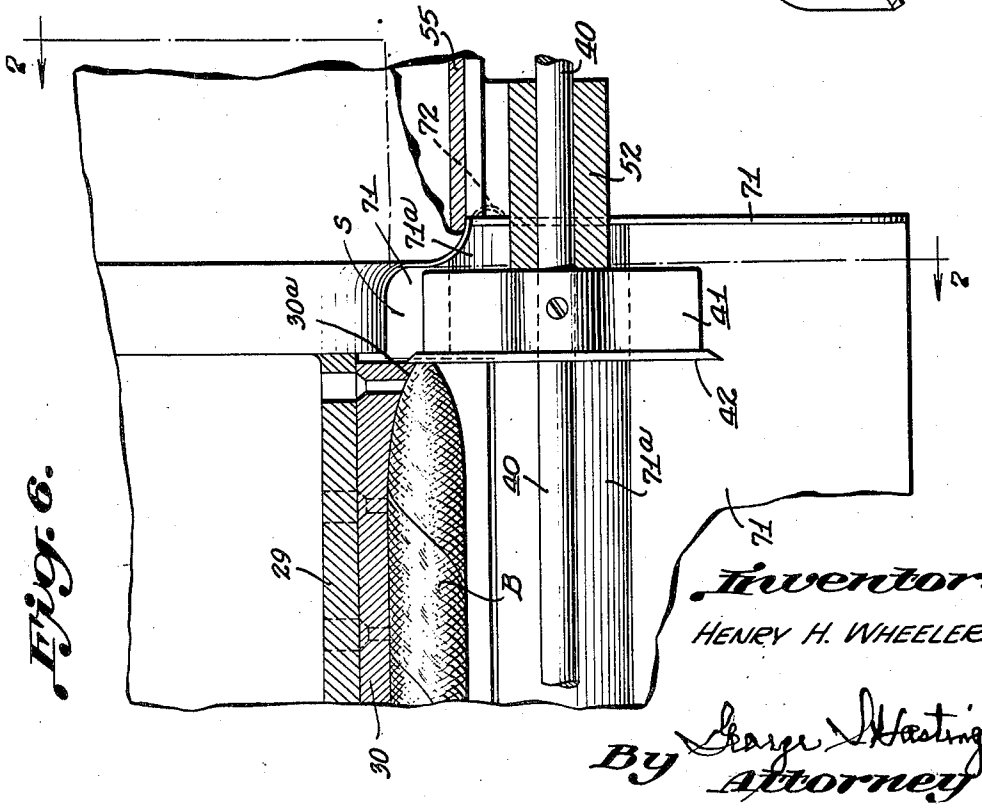


Fig. 6.



Inventor:
HENRY H. WHEELER

By George Hastings
Attorney

Patented May 23, 1944

2,349,320

UNITED STATES PATENT OFFICE

2,349,320

TURRET SHAPING MACHINE FOR CIGARS

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

Application July 16, 1938, Serial No. 219,509

16 Claims. (Cl. 131—83)

This invention relates to cigar machines and more particularly to machines for forming cigars of the short filler type wherein there is provided a series of traveling pockets or molds in which bunches are shaped prior to being rolled and formed into complete cigars.

The chief object of the invention is to improve the operation of the machine described in my co-pending application, Serial No. 21,723, filed May 16, 1935, now Patent No. 2,157,537. In the machine of the application above referred to, raw cigar bunches are transferred manually from a bunch rolling apron by an operator at the loading station into open molds formed in the pockets of the intermittently revolving drum or turret provided for this purpose and shaping members or covers are then fitted into these molds and remain therein during at least one-half revolution of the turret. In one position along the path of travel of the turret, transfer arms lift a shaping cover from one of the closed molds containing a fully shaped cigar and transfer it to a diametrically opposite mold wherein is located an unshaped cigar.

It is a further object of the invention to provide improved mechanism for trimming the surplus material extending from bunches in the molds located therein and to furnish means for moving said trimmers to effect the trimming operation.

It is an added object of the invention to provide an improved device for trimming surplus material extending from bunches located in the molds and to provide mechanism for seating bunches in the molds, which mechanism may be arranged to effect the rotation of the trimming device.

It is a further object to provide pneumatic waste tobacco removing mechanism associated with the trimmers and means for intermittently directing fluid into the mechanism for conducting from the machine waste tobacco trimmed from bunches by the trimmers.

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

In the accompanying drawings which form a part of this specification, and in which like characters of reference indicate the same or like parts:

Fig. 1 is an end elevation partly in section, of the improved shaper turret and the scrap disposal means associated therewith;

Fig. 1*a* is a partial plan view showing a detail of my invention;

Fig. 2 is a sectional side elevation of the shaper turret, on line 2—2 of Fig. 1, including views from lines 2' of Fig. 1;

Fig. 2*a* is a cross-sectional view taken on line 2*a* of Fig. 2 showing a detail in the construction of the cover gripping mechanism;

Fig. 2*b* is a partial side sectional elevation of a turret arm cover.

Fig. 3 is an enlarged side elevation of the improved rotary trimmer, parts broken away, seen from line 3—3 of Fig. 1;

Fig. 4 is an end elevation, partly in section, of the same, from line 4—4 of Fig. 3;

Fig. 5 is a horizontal cross-section, as on line 5—5 in Fig. 3, showing a modified drive for the rotary trimmer; and

Fig. 6 is a partial plan view, partly in section illustrating the cutting mechanism and its relation to the mold pockets and turret supporting casing; and

Fig. 7 is a partial sectional end elevation taken on line 7—7 of Figure 6.

The drum 29, which carries the bunch shaping molds 30 in pockets 23 (Figs. 1 and 2) is intermittently rotated by mechanism, similar to that shown in my co-pending application above referred to, in the direction of arrow 10 in steps equal to the angular distance between each pocket. The bunches formed on the bunch rolling machine are inserted by an operator into any one of the molds which are open at position I, which corresponds generally to the 12:30 to the 2:30 o'clock position of the turret drum. By providing a plurality of open pockets at the loading position, it is possible to more easily fill the molds, and sufficient time can be allowed so that danger of injury to the operator is reduced to a minimum. The turret is next indexed to position II, which approximates the 3 o'clock position, where a closing member 66 actuated through slide 64 by rollers running in tracks 69 and 70 formed on the interior face of the cams 60 and 63 fixed on drum shaft 50, is moved partly into the mold to seat the bunch located therein and is immediately withdrawn. Slide 64 is actuated in a manner similar to that shown in my patent, No. 2,157,537 issued May 9, 1939, for Cigar bunch shaping machine. At station IV, or the 4 o'clock position of the turret, which is the next point in the indexing thereof, another closing member 67, similar in construction and operation to member 66, is moved completely into the mold on slides 65 to fully shape a bunch therein, and

then withdrawn before the turret is indexed to move the next mold into position for cooperation with the closing member 67. Slides 64 and 65 travel in slots (see Figure 1) formed in plates 54 and 54a.

Station V, in the preferred embodiment, is located prior to the 6 o'clock position, where the mold covers 31 are put into place by means of transfer arms 77. The transfer arms 77, which consist of bifurcated central portions or cross heads 780 supported on shaft 50 by blocks 79 rotatable on shaft 50, are actuated by rollers 80 which engage and run in tracks 81 on cams 60 and 63. After covers 31 have been applied to their respective mold pockets, they remain thereon during the travel of the turret through approximately 180°, or one-half revolution, as shown in Fig. 1. The upper ends of arms 77 lift a cover 31 from one mold 30 while at the same time the lower ends are inserting the previously lifted cover into the diametrically opposite mold. The arms 77 are latched to cams 60, 63 by means described more fully hereinafter, while the latter make one-half a revolution in a counterclockwise direction, indicated by arrow 11 in Fig. 1, and at the same time because the arms 77 are latched thereto, they necessarily must travel through 180° in the same direction as indicated by arrow 12. Shaft 50 and cams 60 and 63 mounted thereon are rotated continuously in a counterclockwise direction. At the conclusion of each 180° movement, the arms are again moved radially upward in order to operate successive covers of the molds in a similar manner.

As shown in Fig. 2, an ejector plate 56 is slidable within the drum 29, and carries ejector pins 57 which are arranged with ejecting surfaces of bunch shaped contour to lift bunches shaped in pockets 23 of the drum. A cam roller 59 on the plate 56 engages the innermost tracks of cam 60 which serve to control the ejecting movement of the pins 57. All of this structure is similar to that shown and described in my co-pending application.

To align the covers 31 properly while they are carried by the arms 77, the latter are equipped with gauging devices to hold all covers in the same axial position with respect to the mold pockets 23, and with centering devices to keep them axially parallel in that position. The gauging device consists of adjusting screws 14 inserted horizontally into the ends of arms 77 and coaxial with the centers of rollers 34 on the end projections 33 of the covers. These screws, after adjustment to the exact overall length of the covers, are held firmly in position by set screws 15. The centering device consists of bell crank levers 16 pivoted on horizontal pins 17 in the ends of arms 77 and held in tension by springs 18 inserted into axial cavities in arms 77, these springs pressing against the radial arms 162a of levers 16. The axial arms 162 of the levers 16 are made with axially extending depressions 160 into which the rollers 34 snap when they have entered the mold cover roller supporting pockets formed by the ends 340 of the arms 77 and the arms 162 of levers 16 with depressions 160, thereby holding covers 31 secured in exact angular position in the arms 77 and relative to the mold pockets while being transferred.

Improved mechanism has been provided for more securely latching the transfer arms 77 to the cams 60 and 63 while being rotated by them. This structure consists of lock levers 19 pivotally mounted on pins 20 fixed to the outer surface of the cams, which levers are formed with depressions 810 for locking the rollers 80 when the latter are in their dwell position on the low points of the cam tracks 81 as shown in Fig. 1. It will be observed that a substantial toggle action is set up by the depressions 810 of the locking levers 19 and cam tracks 81 as shown at Fig. 1 so that during the counterclockwise movement of the arms 77 while latched to lever 19 there can be no possible interruption of the locking operation until roller 25 engages pin 26 and lifts lever 19 out of engagement with rollers 80. The counterclockwise movement from position V through 180 degrees of travel, therefore, causes roller 80 to be forced along a line through the center of depression 810 and pivot 20 so that in effect roller 80 is wedged in depression 810 until released as above stated. As in my copending application above referred to, as a result of the continued motion of cams 60 and 63, the high part of the cam surface 81 lifts the transfer arms 77 to the position shown in Fig. 1, in which the arms become latched to the cams by the lock levers 19 described above. Since the transfer arms 77 during the indexing of the turret have been positioned with their cover transferring ends in the path of cam rollers 34, at the conclusion of each turret movement the rollers 34 on a cover to be removed have been located in the grippers on the upper ends of the arms so that the cover is moved outwardly and away from its mold pocket with the outward movement of the transfer arms (see Figures 1 and 2). Due to the fact that the transfer arms are firmly latched to the cams 60 and 63, during the continued rotation of the cams, the transfer arms 77 will travel in unison therewith through 180°, or until the outer ends of the transfer arms strike against the abutments 86 mounted on the brackets 53 and rollers 25 engage pins 26 to unlatch rollers 80 from engagement with levers 19. Continued movement of the cams 60 and 63 causes the rollers 80 to be moved radially, thereby causing the cover pockets of the transfer arms to move into alignment with the cover roller cam tracks 87 at which position the transfer arms dwell while the drum 29 is indexed forwardly. The cover 31 which has just been moved into a mold by the transfer arms, is then moved circumferentially from the pockets in the ends of the arms by the movement of the turret and is thereafter controlled by the cam tracks 87. In the continued motion of the cams 60 and 63 the high part of the cam surface 81 lifts the arms 77, thereby carrying the end of the transfer arms which have just discharged a mold cover to the position shown in Fig. 1, at which time the pockets at the upper end of the transfer arms lift a cover, as shown at the top portion of Fig. 1, ready to repeat the cover transfer operation. When the transfer arms are positioned as shown in Fig. 1, the lock levers 19 engage with the rollers 80, then at the lower dwell points of track 81, and latch the transfer arms to their cams so that on further movement of the cam, the transfer arms will be again moved 180° from cover receiving to cover applying position. When the cams have completed their next half turn and when the ends of arms 77, which are shown in their up position in Figs. 1 and 2, have come into engagement with abutments 86, the rollers 25 of lock levers 19 engage pins 26 inserted into the stationary frames 54 and 55, thereby releasing the transfer arm rollers 80 and allowing the cams

60, 63 to turn through the next 180° without the transfer arms. During this free movement of the cams, the rollers 25 of the lock levers 19 may rest on or adjacent the rims 19a of the cams, leaving an adequate space between the lock levers 19 and and the tracks 81 for the entrance of the rollers 80 at the end of the free half-turn of the cams. The lever 19 is not solely dependent on spring 21 for its locking action. Pin 20 is so positioned that a toggle action is obtained between lever 19 and roller 80 which is locked in depression 810 of lever 19, the roller 80 being forced more firmly against cam track 81, in direct proportion to the increase in resistance of arm 77. Pin 26 is therefore, provided to furnish positive means for lifting lever 19 out of engagement.

In order to secure perfect alignment of the two transfer arms while carrying the mold covers 31 from the top to the bottom of drum 29, the abutments 86 at each side of the drum are made in the form of separate plates, radially adjustable by means of set screws 83 carried by a projection 84 of bracket 53 and by a lug 85 on gear housing 62, respectively. In setting up the machine, these plates are so adjusted that neither arm 77 is free to turn before the other has cleared its plate, hence both arms commence their movement from identical angular positions at exactly the same instant.

To prevent dust or tobacco fragments from entering into the working parts of the turret at the runways of arms 77, covers 35 tensioned by springs 36 are hinged to the tops of frames 54 and 55, these covers being opened by the arms 77 when the latter are raised in their dwell position, and automatically closed as the arms move away therefrom to transport a cover for application to a mold. In their closed position, as shown in dotted lines in Fig. 1, projections 37 of the covers 35 fit into cut-outs 370 in frames 54 and 55, and serve as stops for the arms 77 against any possible angular retrograde movement when arriving in their dwell position prior to their radial outward motion. It will be seen, therefore, that arms 77 in moving counterclockwise, cam covers 35 having projections 37 upwardly to enable the arms to reach the angular position of Figure 1, after which covers 35 and projections 37 move down again to prevent backward movement of arms 77. A further precaution against the entrance of foreign matter is provided by a set of brushes 32 attached to the lower surfaces of the frames 54 and 55, these brushes being in the paths of the inner surfaces 161 of the pocket portions of arms 77 (see Figures 2 and 2a) and thus prevent accumulation of tobacco fragments on these surfaces.

For cutting the overhanging ends of the bunches B extending through openings in the end walls of molds 30 and resting against the bottom edge portion of the openings 30a, an improved rotary trimmer mechanism, shown in Figs. 3 and 4, is placed at the trimming station III. In brackets 38 and 39 on frames or casings 54 and 55 is supported a shaft 40 on which are fast, at the proper distance adjustable to the length of the bunches operated upon, blocks 41 carrying oval-shaped knife blades 42. It will be noted that blocks 41, upon which knives 42 are mounted, are shaped more or less like paddles, and due to their proximity to the chute 71 function after the severing of an end from a bunch of the pocket to eject or flip the cut off portions of tobacco down the chute and in that way constitute an efficient means for positively disposing of the cut off bunch ends. At one end, the shaft 40 has affixed a ratchet 43 with which engages a pawl 44 carried by an arm 45 loosely mounted on shaft 40 and having on its hub a pinion 46. This pinion meshes with a rack 47 attached to the slides 65 of the closing member 67 and is so dimensioned that the outward motion of the latter causes the pinion 46 to rotate through 180° in the clockwise direction when viewed from the end shown in Fig. 4. This half-turn is transmitted through pawl 44 to ratchet 43, producing a corresponding half-turn of shaft 40 and knives 42. On the inward motion of the slides 65 and rack 47, the counterclockwise motion of the pinion 46 produces a rearward half-turn of pawl arm 45 which does not affect the ratchet which is kept from rearward turning by a stationary spring pawl 48 bearing against its surface and engaging with shallow slots therein at the end of each forward motion. The pawl 44 is held in contact with ratchet 43 by a spring 49 anchored to arm 45, and engages with the ratchet in deep slots at such an angle as to readily pass over the aforementioned shallow slots in its return motion. The pinion, ratchet, and their associated parts are protected by a cover 51 attached to frame 55.

In Fig. 5, a modification of the drive for the rotary trimmer is shown. In this case, the trimming knives 42 are the same as in Figs. 3 and 4, but are continuously instead of intermittently driven, a spur gear 27 on the drum shaft 50 being used for this purpose. The latter gear meshes with a pinion 28 loose on a stud 24 in the stationary frame 13 of the cigar machine. A pinion 58 is concentrically attached by a pin 61 to the pinion 28 on stud 24 and a gear 59 meshing with pinion 58 is mounted on the knife shaft 40 which is supported in bearings 52 attached to turret frames or casings 54 and 55. Thus, the knives 42 are continuously driven at the proper speed while the turret is in operation.

In each of the modifications illustrated in Figures 3 and 4, and Figure 5, it will be observed that knives 42 move inwardly and downwardly with a positive shearing action relative to the bottom edge portion 30a of the openings in the end walls of mold pockets 30 and trim the surplus material from the bunches in the pockets. As shown, the movement of the knives is timed so that the cutting edge thereof moves between two spaced bunches and downwardly against the particular bunch to be trimmed.

When an operator inserts raw bunches into pockets moved in succession to loading position I, the bunch ends are pressed against edge portions 30a in the end walls of the molds into space S bounded by the ends of the mold turret 29 and the channels 54, 55. Knives 42 which trim the projecting bunch ends rotate downwardly relative to the end walls of the molds against the projecting bunch ends. If no paddles 41 were provided the bunch ends which are moved in the space S between the ends of the mold pockets and the channels 54, 55 might tend to remain clinging to the channel 54, 55 or to chute 71 so that as the mold turret continued its travel, these portions would lodge in space S on channels 54, 55 and clog against the chute 71. Because of the presence of paddles 41 any building-up of trimmed-off ends, either in space S or on chute 71 is completely eliminated, because due to the downward rotation of the knives 42 towards the projecting portions of bunch ends, as shown in Figures 4 and 7, each individual bunch end as soon as it is trimmed

from a bunch is moved positively away from the space between the ends of the turret and the channels and flipped onto chute 71 for delivery into the suction chute 75.

The scrap from the trimmed bunches falls into a chute 71 provided with bowed portion 71a for accommodating the knife ends (Figures 1 and 7), removably supported between the brackets 38 and 39 (Figs. 1, 3 and 4). To hold this chute in position, it is provided near the inner end of each of its side walls with a small ball shaped outward projection 72, which projections snap into corresponding depressions in the brackets 38 and 39 when pushed into place, and near its outer end carries posts 73 which fit into holes 74 drilled for this purpose into the radial top surface of bracket 53. The movable cutters 42 are so located with respect to the waste discharge chute 71 that as the knives rotate any tobacco trimmings, not removed from the knives by the cutting action, which tend to cling to the knives are thrown by centrifugal force onto chute 71 and discharged into chute 75. In this manner the knives are kept substantially clean at all times.

From chute 71, the scrap is delivered into a chute 75 (Fig. 1), supported in the base frame of the cigar machine and terminated in an elbow 76. This elbow enters into a box 78 and therein is closed by a valve 79 hinged on a pin 82 turnable by a crank arm 89 actuated through a connecting rod 90 from a crank lever 91 held in engagement with its cam by a spring 92. A tubular extension of the stationary box 78 enters into a closed drawer 93 slidable in the base of the machine and also having entering into it an elbow 94 at the end of a pipe 95 connected with the suction system of the machine. At regular cyclic intervals, when the valve 79 is opened by the action of lever 91, the scrap accumulated in elbow 76 is drawn by the suction into drawer 93 which is emptied from time to time.

The invention above described may be varied in construction within the scope of the claims, for the particular device, selected to illustrate the invention, is but one of many possible concrete embodiments of the same. The invention is not, therefore, to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. A cigar bunch shaping machine, comprising in combination, an endless traveling conveyor provided with a series of bunch shaping molds, of a plurality of covers traveling with said molds, a mold loading station, a seating member adjacent said station and operative to seat bunches in said molds, a trimmer arranged to cut surplus material projecting from bunches in said molds, a bunch shaping member, and means mounted on said shaping member for rotating said trimmer to cut the surplus tobacco from a bunch located in one mold while said shaper is operating upon a bunch in another mold.

2. In a cigar bunch forming machine, the combination with an intermittently rotating turret provided with a series of bunch shaping pockets, of a plurality of covers traveling with said pockets, trimmer mechanism for trimming surplus bunch material projecting from said pockets, a device positioned adjacent said trimmer for shaping bunches in said pockets, and means cooperating with said device during its shaping operation for rotating said knife to cut said surplus from bunches. said means comprising a rack carried by said device, a shaft supporting said knife, a ratchet fixed to said shaft, a pawl lever and pinion loosely mounted on said shaft, said pinion engaging said rack, and a pawl carried on said arm for engagement with said ratchet to rotate said knife during each reciprocation of said rack.

3. A cigar bunch shaping machine comprising in combination a casing, an endless traveling conveyor provided with a plurality of bunch shaping molds from which project surplus bunch ends, said conveyor extending outwardly from said casing and constructed and arranged to provide a space accommodating said bunch ends, a plurality of mold covers coacting with said molds, a rotary trimmer adjacent said molds, means mounting said trimmer for rotation in said space between said casing and said conveyor, means for rotating said trimmer for trimming off said ends of bunches projecting from said molds into said space, and paddle members carried by said trimmer for positively ejecting cut off bunch ends from said space between said casing and conveyor.

4. A cigar bunch shaping machine comprising in combination a casing, an endless traveling conveyor, said conveyor extending outwardly from said casing and spaced therefrom, a plurality of bunch shaping molds carried by said conveyor and provided with end openings through which surplus bunch material projects into the space between said casing and conveyor, a plurality of mold covers coacting with said molds, a rotary trimmer adjacent said molds, means mounting said trimmer for rotation in the space between said casing and said conveyor, means for rotating said trimmer for trimming off the ends of bunches projecting from said molds, said trimmer comprising a cutter having eccentric cutting edges, and paddle members mounted closely adjacent one side of said cutter and extending along the major axis thereof propelling cut pieces of tobacco from the zone of trimming.

5. In a cigar machine, the combination with an intermittently movable endless conveyor provided with a plurality of spaced bunch shaping pockets having end walls with openings through which surplus tobacco forming an end of a bunch projects, a conveyor support casing, means mounting said conveyor on said casing constructed and arranged to provide a space adjacent said end walls to accommodate said projecting bunch ends during the travel of said bunches from said loading to said trimming station, a plurality of cooperating pocket covers, a loading station, and a bunch trimming station, and a conveyor support casing, means mounting said conveyor on said casing constructed and arranged to provide a space adjacent said end walls to accommodate said projecting bunch ends during the travel of said bunches from said loading to said trimming station, of rotatable bunch end trimming means mounted in said space and located adjacent the ends of said pockets at said trimming station, and mechanism for continuously rotating said trimming means in said space for trimming the ends of bunches projecting from said pockets, said mechanism being constructed and arranged to rotate said trimming means into trimming engagement with a bunch end between spaced projecting ends of bunches and with a positive shearing action relative to the end wall of the mold enclosing the bunch being trimmed after

each stepwise movement of said conveyor has advanced a bunch to said trimming station.

6. In a cigar machine, the combination with an intermittently movable endless conveyor provided with a plurality of spaced bunch shaping pockets having end walls with openings through which surplus tobacco forming an end of a bunch projects, a conveyor support casing, means mounting said conveyor on said casing constructed and arranged to provide a space adjacent said end walls to accommodate said projecting bunch ends during the travel of said bunches from said loading to said trimming station, a plurality of cooperating pocket covers, a loading station and a trimming station, and a conveyor support casing, means mounting said conveyor on said casing constructed and arranged to provide a space adjacent said end walls to accommodate said projecting bunch ends during the travel of said bunches from said loading to said trimming station, of a rotatable bunch end trimmer having outwardly curved eccentric cutting edges located adjacent the ends of said pockets at said trimming station, and mechanism for continuously rotating said trimmer in said space for trimming in succession the ends of bunches projecting from said pockets, said mechanism being constructed and arranged to rotate said trimmer into trimming engagement with a bunch end between spaced projecting ends of bunches and with a positive shearing action relative to the end wall of the mold enclosing the bunch being trimmed only after each stepwise movement of said conveyor has advanced a bunch to said trimming station.

7. In a cigar machine, the combination with an intermittently movable endless conveyor provided with a plurality of spaced bunch shaping pockets having side walls and end walls with openings through which surplus bunch material may project, said end walls being constructed and arranged to act as a ledger plate, a plurality of cooperating pocket covers, a loading station and a trimming station, of a rotatable oval bunch end trimmer having outwardly curved eccentric cutting edges located adjacent the end walls of said pockets at said trimming station, mechanism for continuously rotating said trimmer downwardly with a positive shearing action relative to said end walls of said pockets for trimming in succession the ends of bunches projecting from said pockets, said mechanism being constructed and arranged to rotate said trimmer into trimming engagement between spaced projecting ends of bunches only after each stepwise movement of said conveyor has advanced a bunch to said trimming station, and paddle members mounted on said trimmer and extending along the major axis thereof for rotation therewith to remove trimmed off bunch ends from said station.

8. A cigar bunch forming machine comprising in combination, an endless traveling conveyor provided with a series of bunch shaping molds having openings through which surplus tobacco forming an end of a bunch can project, a plurality of covers traveling with said molds, a support for said conveyor, means mounting said conveyor in said support, said means providing a space between said conveyor and support accommodating said surplus tobacco projecting from said molds, a mold loading station, a seating member adjacent said station and operative to seat bunches in said molds with an end thereof projecting into said space, a rotatable trimmer extending into said space between said conveyor and support and constructed and arranged to cut surplus material projecting from the ends of bunches in said molds, and means on said trimmer constructed and arranged to operate in said space for positively removing trimmed surplus bunch ends from said space.

9. A cigar bunch forming machine, comprising in combination, an endless traveling conveyor provided with a series of side by side bunch shaping molds, a plurality of covers traveling with said molds, a mold loading station, an end trimming station, a rotating trimmer including eccentric cutting edges relative to the center of rotation of said trimmer, means mounting said trimmer at said station adjacent said molds for cutting surplus material projecting from bunches positioned therein, and means carried by said trimmer and rotating therewith for positively ejecting said cut surplus materials from said station.

10. A cigar bunch forming machine having an endless traveling conveyor provided with a series of bunch shaping molds with bunch end supports formed in the end walls thereof, a plurality of covers traveling with said molds, a mold loading station, a movable trimmer arranged adjacent said molds, means for moving said trimmer downwardly with a positive shearing action relative to said bunch end supports of said end walls to shear surplus material projecting from bunches positioned therein, and means mounted on said trimmer for removing waste tobacco bunch ends cut by said trimmer from the zone of cutting adjacent said mold end walls.

11. In a cigar machine provided with a rotatable turret having a series of bunch shaping pockets moving in a circular path, said pockets having openings through which an end of a bunch may project, a plurality of covers adapted to be placed in said pockets for shaping bunches located therein, mechanism traveling relative to said turret for moving said covers from one pocket at one position along said path and applying it to an open pocket at another position on said path, a loading station, a bunch seating device located adjacent said loading station, a bunch end trimming station, means for moving said turret to position bunches at said station for trimming, a rotary trimmer having an eccentric shearing edge, mechanism for imparting a plurality of rotations to said trimmer while a bunch is located at said station with a downward movement relative to said bunch to be trimmed, and a paddle member mounted on one face of said trimmer for positively removing cut portions of bunches from said trimming station after each operation of said trimmer.

12. A cigar bunch forming machine comprising in combination, an endless traveling conveyor provided with a plurality of side by side bunch shaping molds extending therealong, each of said molds having an end wall with an opening therein through which projects surplus bunch material, a plurality of bunch shaping covers traveling with said molds and normally closing said molds completely except for a portion of said opening through which said surplus material projects, a bunch loading station, a bunch end trimming station, a rotary trimmer, means for mounting said trimmer at said trimming station adjacent said end walls of said molds, means for intermittently moving said conveyor to advance filled molds seriatim to said trimming station, and means operating in timed relation to

the movement of said conveyor for imparting downward and inward rotary movement to said trimmer between spaced bunches in said molds, and towards one of said bunches in one of said molds with a positive shearing action relative to the end wall of said last-named mold to cut surplus material from the bunch therein.

13. A cigar bunch forming machine comprising in combination, an endless traveling conveyor provided with a plurality of side by side bunch shaping molds extending therealong, each of said molds having an end wall with an opening therein through which projects surplus bunch material, a plurality of bunch shaping covers traveling with said molds and normally closing said molds completely except for a portion of said opening through which said surplus material projects, a bunch loading station, a bunch end trimming station, a rotary trimmer, means for mounting said trimmer at said trimming station adjacent said end walls of said molds, means for intermittently moving said conveyor to advance filled molds seriatim to said trimming station, means operating in timed relation to the movement of said conveyor for imparting downward and inward rotary movement to said trimmer between spaced bunches in said molds and towards one of said bunches in one of said molds with a positive shearing action relative to the end wall of said last-named mold to cut surplus material from the bunch therein, and means cooperating with said trimmer at said trimming station for positively ejecting said cut surplus from said station.

14. In a cigar bunch forming machine having an endless intermittently moving conveyor, provided with a series of bunch shaping molds from which project the ends of shaped bunches, a plurality of covers traveling with said molds, a mold loading station, and a trimming station, means for moving said conveyor to present filled molds successively to said trimming station, rotatable trimmers arranged adjacent said molds, means for rotating said trimmers downwardly with a shearing action against said projecting bunch ends after each movement of said conveyor for cutting surplus material projecting from bunches positioned therein, and plate members secured to said trimmers and rotating therewith to eject tobacco as it is cut by said trimmers from bunches in said conveyor.

15. In a cigar machine having an endless conveyor, a plurality of bunch shaping pockets mounted on said conveyor, said pockets having openings through which surplus bunch material may project and a bunch end supporting shoulder, a bunch loading station, a trimming station, a rotating trimmer, means for imparting a plurality of revolutions to said trimmer downwardly relative to said shoulder for trimming said surplus material from said bunches projecting through said openings from said pockets, and paddles mounted on said trimmer and rotating therewith for forcibly expelling the cut off surplus material tending to lodge in said machine at said trimming station.

16. A cigar bunch shaping machine comprising in combination a casing, an endless traveling conveyor provided with a plurality of bunch shaping molds having end walls from which project bunch ends to be trimmed, said conveyor extending outwardly from said casing and forming therewith a space accommodating the ends of bunches projecting outwardly from said end walls of said molds, a plurality of separate independently movable mold covers coacting with said molds, a rotary trimmer, means mounting said trimmer for rotation in said space and shearing coaction with said end walls of molds moved seriatim into trimming relation with said trimmer as the result of the travel of said conveyor, and means for rotating said trimmer and imparting positive shearing action thereto relative to said end walls for trimming off the ends of bunches projecting from said molds into said space.

HENRY H. WHEELER.

CERTIFICATE OF CORRECTION.

Patent No. 2,349,320. May 23, 1944.

HENRY H. WHEELER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, second column, lines 50 to 55 inclusive, and page 5, first column, lines 8 to 14 inclusive, claims 5 and 6, strike out the words and comma "a conveyor support casing, means mounting said conveyor on said casing constructed and arranged to provide a space adjacent said end walls to accommodate said projecting bunch ends during the travel of said bunches from said loading to said trimming station,"; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of August, A. D. 1944.

Leslie Frazer

Acting Commissioner of Patents.

(Seal)