Dec. 14, 1937. H. H. WHEELER 2,102,298

CIGAR BUNCH SHAPER MECHANISM

Filed March 14, 1936

FIG. 1

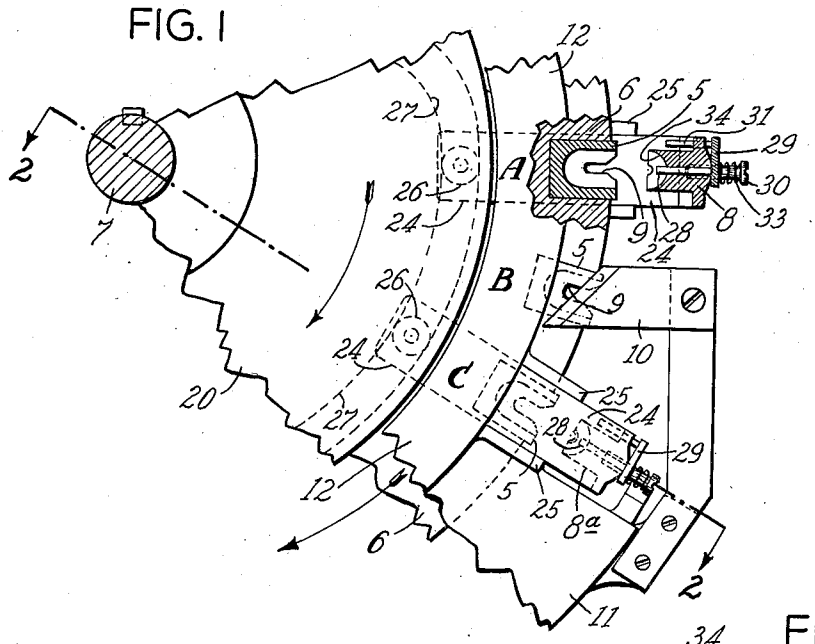


FIG. 3

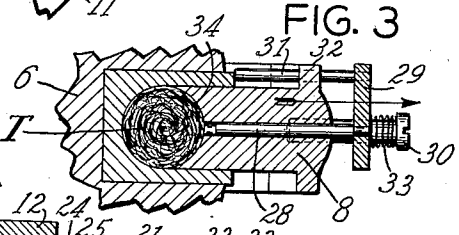
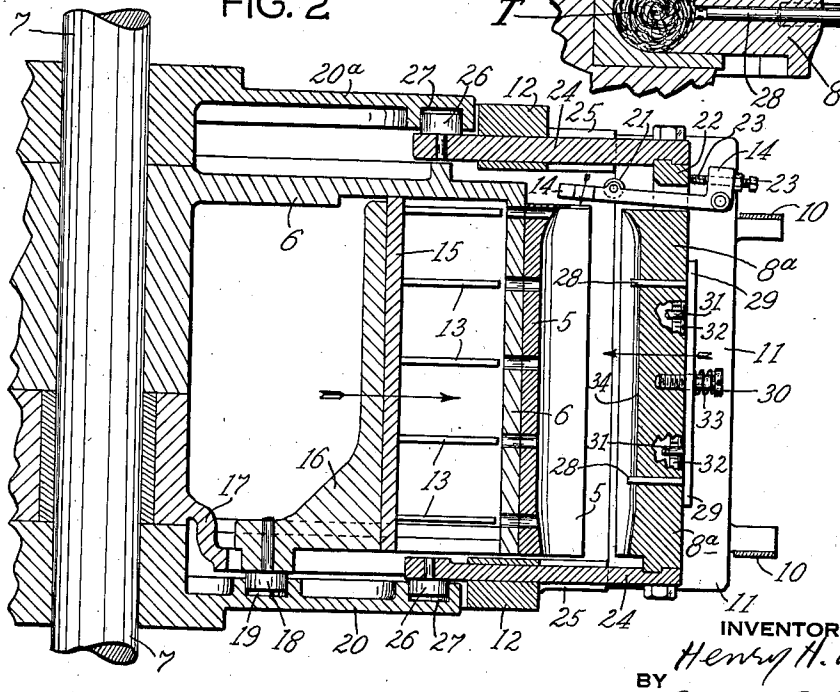


FIG. 2



INVENTOR
Henry H. Wheeler
BY
George S. Hastings
ATTORNEY

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CIGAR BUNCH SHAPER MECHANISM

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

Application March 14, 1936, Serial No. 68,800

16 Claims. (Cl. 131—9)

This invention relates to cigar bunch machines of the type disclosed in my copending United States patent application, Serial Number 21,723 for Cigar bunch shaping machine, filed May 16, 1935, wherein cigar bunches are loaded into pockets in a traveling conveyor and compressed to final form.

The machine disclosed in the above mentioned application shows means provided for seating cigar bunches in the respective pockets prior to trimming their ends, and bunch end trimming means. After trimming, the conveyor is advanced to a different station where the trimmed cigar is unseated or lifted in its pocket, relocated longitudinally while so raised and then reseated. Thereafter, the conveyor is again advanced to bring loaded pockets to shaping mechanism.

In the operation of the machine above referred to it has been found that under certain conditions, cigar bunches may be gummy and stick or adhere to the members which seat them in the conveyor pockets. Therefore, upon withdrawal of these members from the bunches in the pockets, unless means are provided for preventing such adherence, these bunches will be drawn out of their pockets, and if not replaced prior to forward movement of the conveyor, may be damaged. While ejector devices for ejecting shaped or molded cigar bunches from their molds or pockets are known, applicant is unaware of any bunch shaping mechanism in which bunches to be shaped are placed in molds, seated and then stripped from their seating or shaping members while remaining stationary in the mold, by stripping elements carried by said members. It is therefore, an object of the invention to provide an improved cigar bunch shaping machine wherein means are provided for preventing adherence of partially formed bunches to the members which press them into the convevor pockets or molds.

It is also an object of this invention to provide seating members for a cigar bunch shaping machine with stripping devices for separating partially shaped bunches from the stripper elements as the latter are being withdrawn from operative position.

It is a further object of this invention to provide cigar bunch seating and shaping members with stripping elements for preventing adherence of bunches seated in molds in a cigar bunch shaping machine wherein, means are included for moving the stripping elements to inoperative position during the seating and shaping operations. It is also a further object to provide the plungers which seat cigar bunches in their respective molds or pockets with faces complementary to the shape of the molds so that they have a shaping action upon the bunches as they are located in the molds.

It is also an object of this invention to provide a plurality of seating members, each having associated therewith bunch stripping mechanism, in combination with trimming devices for trimming the ends of bunches and mechanism for lifting and relocating trimmed bunches in their respective pockets prior to the operation of the last seating member.

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

In the accompanying drawing in which like characters of reference indicate the same or like parts:

Fig. 1 is a partial, sectional end elevation of a turret of a cigar bunch machine showing the seating plungers for the molds at seating and relocating stations in combination with stripping means;

Fig. 2 is a sectional plan view of the same, taken on line 2—2 of Fig. 1; and

Fig. 3 is a sectional end elevation of a bunch carrying turret pocket in engagement with a seating plunger equipped with a stripping device.

In carrying this invention into effect there is provided a traveling carrier provided with a plurality of cigar bunch receiving and carrying pockets or molds adapted to be filled manually with cigar bunches; the ends of the pockets are provided with openings through which may project any uneven ends of the bunches, means for seating and shaping each bunch in its respective pocket, trimming means for removing projecting end portions of each bunch, a device for lifting each trimmed bunch from its pocket, a member operating to move said lifted bunch longitudinally to relocate it in said pocket, a second member for reseating and shaping said relocated cigar bunch in its pocket and elements carried upon the seating members for stripping the bunch from a seating member if a bunch should happen to stick to the face of said member. In the best constructions, means are also provided for moving the stripping means into the seating plunger when the latter is in operative position, so that when the plunger is removed from seating position a spring bearing against the stripper

means holding device forces said means into stripping position.

The above mentioned means and parts may be widely varied within the scope of the claims for the particular device selected is but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the specific details of the structure shown and described.

In a bunch making machine of the type shown in the above referred to application, the cigar bunches T are placed by an operator in the molds or pockets 5 which are carried by a turret 6 intermittently rotating about a shaft 7. As each individual pocket 5 with an inserted cigar bunch T arrives at station A (Fig. 1), a plunger 8 enters said pocket for the purpose of seating said cigar bunch properly within said pocket, after which operation plunger 8 retreats again. Said pocket carrying the seated cigar bunch, due to the step-by-step movement of the turret 6, then is moved to a trimming station B where the ends of the bunch T, protruding from slots 9 of pocket 5, are trimmed by means of a pair of knife blades 10 (Fig. 1) mounted on a stationary guard flange 11 of a guard ring 12. The trimmed cigar bunch in said pocket is then advanced to a re-locating station C where the bunch, by means of a row of reciprocating lifter pins 13 (Fig. 2) is lifted partly out of the pocket 5 and a locating finger 14 contacts the head end of said bunch and presses any particle of tobacco extending from said head end on to the same and at the same time locates said bunch as to the proper position within the pocket 5. Lifter pins 13 retreat again and a reciprocating plunger 8a of similar construction to plunger 8 then enters pocket 5 and presses the properly located bunch firmly into said mold. It is to be noted that plungers 8 and 8a are provided with bunch engaging faces which are complementary to the shape of the bunch mold so that during the seating and reseating operations each bunch will actually undergo a shaping as it is located in its mold or pocket.

Lifter pins 13 are mounted on a supporting bar 15 attached to an operating bracket 16 slidably mounted in a stationary guide bracket 17 supported by means of shaft 7. Bracket 16 is equipped with a cam roller 18 engaging in a cam track 19 of a cam 20 rotating about the shaft 7 and actuated from the main drive of the machine.

Locating finger 14 is pivoted to the guard flange 11 and carries a roller 21 which, during inward movement of plunger 8a contacts a cam lug 22 extending from this plunger 8a, thereby causing finger 14 to move into locating position. A set screw 23, held by finger 14, contacts the plunger 8a while the latter is in retreated position, and causes finger 14 to swing out of the way during the bunch lifting operation described heretofore.

Each plunger 8 and 8a is attached to a pair of operating arms 24 slidably supported by means of guide lugs 25 and guard ring 12. Each arm 24 carries a cam roller 26 engaging in cam tracks 27 of two similar cams 20 and 20a (Fig. 2). Each plunger 8 and 8a is furthermore provided with a stripping device for the purpose of preventing the cigar bunch T from adhering to said plungers upon the retreat of the latter. Plunger 8a, however, is set ⅛ inch closer to the bottom of the pocket so that it serves to close the slot 9 by approaching the bottom of the pocket, within less than half the thickness of the bunch, thereby completely shaping the head 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 these are produced in the same pocket as that in which the bunches are originally loaded, thus eliminating complicated and complex structural details in the device.

The stripping device consists of a pair of stripper members which in the embodiment shown are pins 28 slidably suppported in corresponding holes of the respective plungers. Pins 28 are mounted on a plate 29 also slidably supported by means of a guide stud 30 held by said plunger. On plate 29 is furthermore mounted a pair of guide rods 31 guided in corresponding slots of flanges 32 of plungers 8 and 8a. Each guide stud 30 is equipped with a tension spring 33 having the tendency of keeping plate 29 in contact with the top surface of its plunger, thereby causing the stripper pins 28 to project from the molding surface 34 of the plunger. When the latter enters a pocket 5, the ends of guide rods 31 engage with the top surface of said pocket (Fig. 3), which causes the stripper pins 28 to stop while the plunger advances further to contact the cigar bunch in the pocket 5. Due to this movement, of course, the pins 28 are withdrawn from the molding surface of the plunger and the latter can compress the cigar bunch without injury to the same. During the following retreat of the plungers from the corresponding pockets, the stripper pins 28 are released and protrude again into the molding surface of the plunger, causing any bunch, sticking to the latter, to be gently stripped from the plunger.

What is claimed is:

1. In a cigar bunch shaping machine, a bunch mold for supporting cigar bunches to be shaped, a member having an operative face complementary to the shape of the mold for pressing a bunch into said mold, means for moving said member to and from pressing position in said mold, and stripping means carried by said member for stripping said bunch therefrom during the outward movement of said member.

2. In a cigar bunch shaping machine, a conveyor having a plurality of molds for supporting cigar bunches to be shaped, a device having an operative face complementary to the shape of the mold for shaping a bunch in said mold, means for moving said device to and from shaping position in said mold, and stripping means for stripping said shaped bunch from said device during the outward movement of said device.

3. In a cigar bunch shaping machine, a bunch mold for supporting cigar bunches to be shaped, a device having an operative face complementary to the shape of the mold for seating a bunch in said mold, means for moving said device to and from seating position in said mold, stripping means carried by said device for stripping said seated bunch therefrom during the outward movement of said device, said stripping means including an element slidably carried by said device and normally projecting from its operative face to be depressed into said face by engagement with said mold before the engagement of said device with the bunch in said mold.

4. In a cigar bunch shaping machine, a bunch mold for supporting cigar bunches to be shaped, a device having an operative face complementary to the shape of the mold for seating a bunch in said mold, means for moving said device to and from seating position in said mold, stripping

means for stripping said seated bunch therefrom during the outward movement of said device, said stripping means including a plurality of pins slidably carried in said device and normally projecting from its operative face, and means for retracting said stripping means into said device during movement of the latter toward the mold.

5. In a cigar bunch shaping machine, a bunch mold for supporting cigar bunches to be shaped, a plunger having an operative face complementary to the shape of the mold for pressing a bunch into said mold, means for moving said plunger to and from pressing position in said mold, and stripping means carried by said plunger for stripping said seated bunch therefrom during the outward movement of said device, said stripping means comprising a yieldably mounted element normally projecting through the operative face of said plunger to be depressed into the same during inward movement of the plunger whereby it will resume its normal position during outward movement of the plunger.

6. A device for use in a cigar bunch shaping machine having molds for supporting cigar bunches to be shaped, comprising a seating and shaping member having a seating and shaping face adapted to be moved into and out of operative position with a bunch in said mold, and stripping means carried by said member for preventing adherence of cigar bunches thereto during outward movement of the member.

7. A seating device for seating bunches in pockets in a cigar bunch shaping machine comprising a seating member provided with a concave seating face and an opening extending from said face to the top thereof, and a stripper element projectable through said opening and from said face for stripping seated cigar bunches from said member.

8. A shaping device for a cigar bunch shaping machine, comprising a seating member having a face adapted to seat cigar bunches in pockets in the machine, and a plurality of stripping pins carried by said member for stripping said bunch from said member after seating operations and preventing outward movement of said bunch.

9. A seating and shaping device for a cigar bunch machine, comprising a seating and shaping plunger, a bar yieldably carried by said plunger for seating a cigar bunch in a mold and partially shaping same, and a stripping element carried by said bar and projecting through an opening in said plunger into the operative face thereof for stripping seated and partially shaped bunches therefrom after completion of said shaping operations.

10. In a cigar bunch seating device for a cigar bunch shaping machine, a seating plunger having a bunch engaging face, a stud carried by said plunger, a plate loosely mounted on said stud, a plurality of stripper elements depending from said plate adapted to move through and project beyond the operative face of said plunger, a spring located upon said stud for urging said elements beyond the seating face of said plunger, and a plurality of rods also carried by said plate and projecting through said plunger, to move said stripper elements to inoperative position during bunch seating operations.

11. In a cigar bunch shaping machine, a bunch pocket for supporting cigar bunches to be shaped, a seating element having a seating face for seating a bunch in said pocket, means for moving said element to and from seating position in said pocket, stripping members carried by said element and adapted to prevent adherence between seated bunches and said seating member, and means carried by said seating member for moving said stripping members to inoperative position during the seating operations.

12. In a cigar bunch shaping machine, an endless member provided with a series of bunch receiving pockets for reception of partially shaped cigar bunches, a plurality of bunch seating devices having seating faces positioned along said member, means for reciprocating said devices into and out of contact with bunches in successive pockets to seat them in said pockets, the last of said seating devices being positioned nearer the pockets than the first, whereby a bunch is pushed completely into and seated in the pocket, and means for stripping seated bunches from said seating devices.

13. In a cigar bunch shaping machine having a movable turret and a plurality of bunch receiving and supporting molds therein, a bunch seating device for forcing a bunch into a mold, trimmers adjacent the ends of the molds for trimming the ends of said bunches, means for lifting the trimmed bunch in the mold, a reseating device, a relocating member for relocating said lifted bunch, means carried by said reseating device for operating said relocating member during inward movement of said device, and means for preventing adherence of reseated bunches to said reseating device.

14. In a cigar bunch shaping machine having a movable turret and a plurality of bunch receiving and supporting molds therein, a bunch seating device for forcing a bunch into a mold, trimmers adjacent the ends of the molds for trimming the ends of said bunches, means for lifting the trimmed bunch in the mold, a reseating device, a relocating member for relocating said lifted bunch, means carried by said reseating device for operating said relocating member during inward movement of said device, stripping means for preventing adherence of reseated bunches to said reseating device, and means carried by said reseating member for moving said stripping means to inoperative position when said member is reseating a bunch in a mold.

15. In a cigar bunch shaping machine having a movable turret and a plurality of bunch receiving and supporting molds therein, a bunch seating device for forcing a bunch into a mold, means carried by said device for stripping said bunch therefrom during its outward movement, trimmers adjacent the ends of the mold for trimming the ends of seated bunches, means for lifting the trimmed bunch in said mold, a reseating device, a relocating member for relocating said lifted bunch in its mold during inward movement of said reseating device, and means for moving said reseating device into and out of said pocket to reseat the relocated bunch therein.

16. In a cigar bunch machine, the combination with means for trimming cigar bunches, of a traveling series of bunch shaping pockets adapted to hold bunches, a movable device for locating the trimmed bunch endwise in one of said pockets, a coacting seating element, mechanism for moving said element toward said pocket to seat the trimmed and located bunch, and means for stripping said bunch therefrom.

HENRY H. WHEELER.