Oct. 19, 1943. J. F. HALSTEAD 2,331,905

DUPLEX CRIMPER

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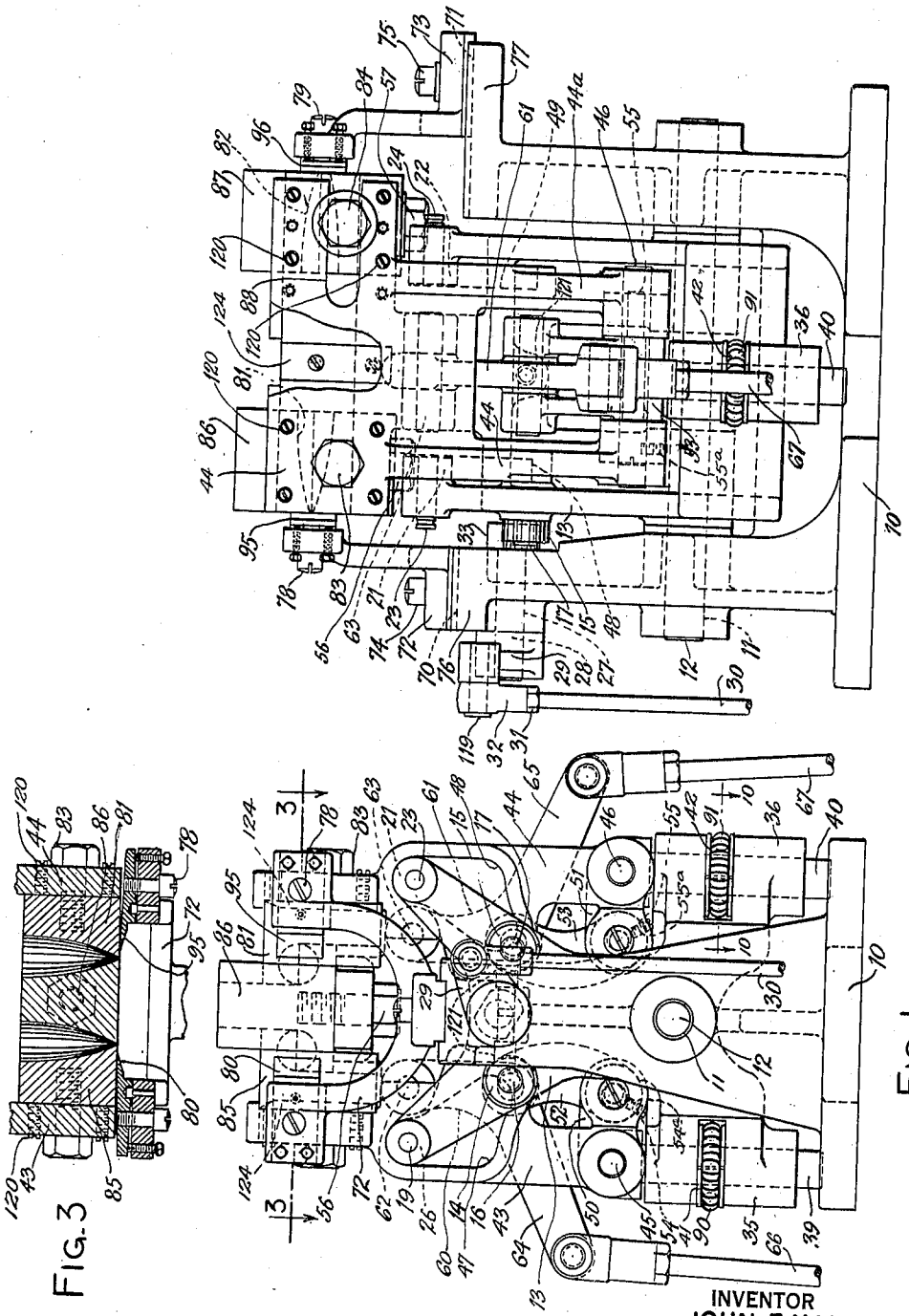


FIG. 1

FIG. 2

FIG. 3

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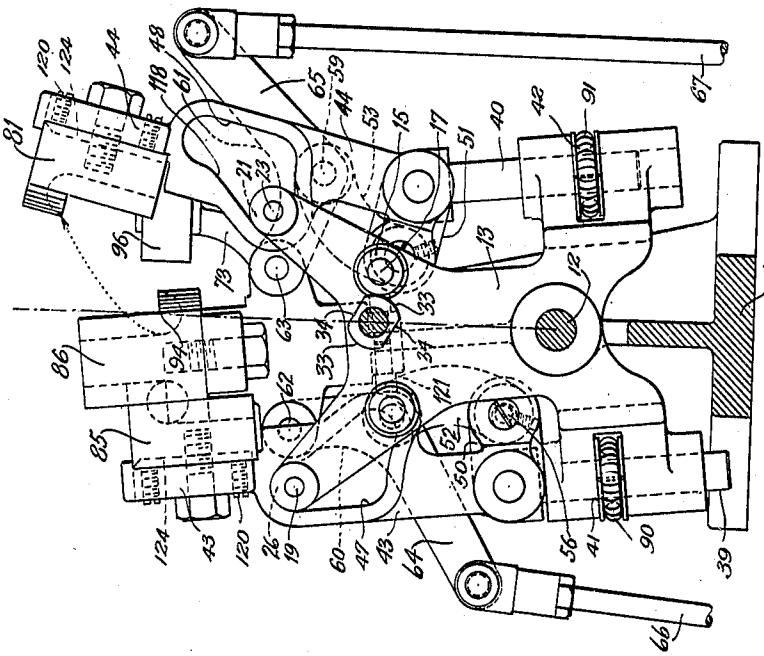


FIG. 5

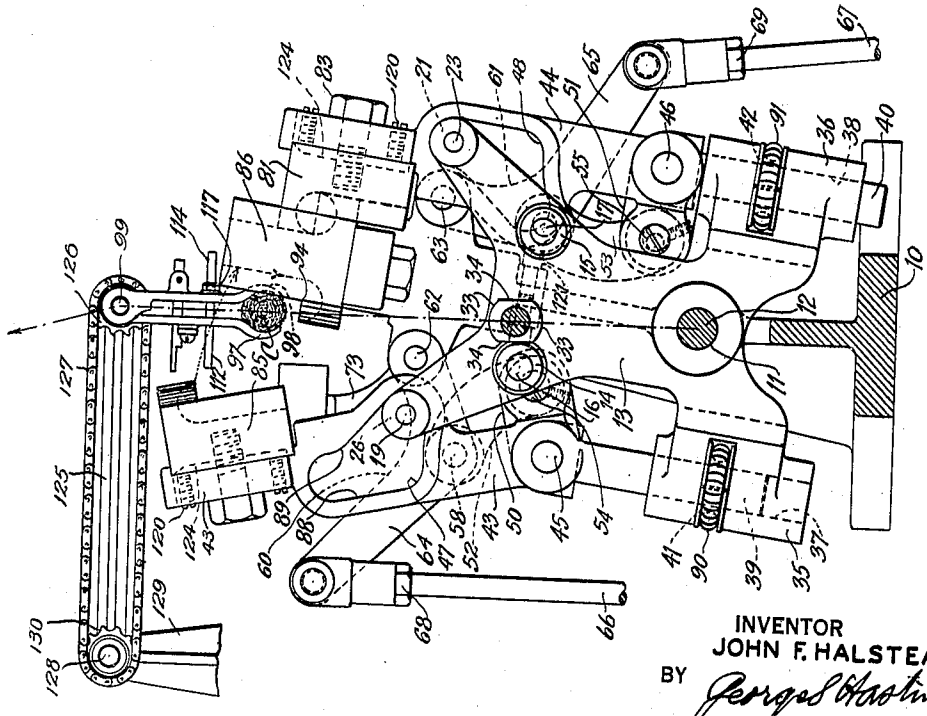


FIG. 4

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FIG. 8.

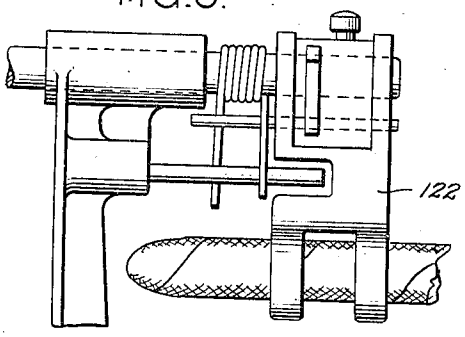


FIG. 9.

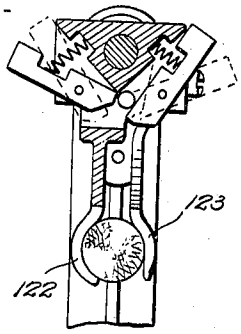


FIG. 10.

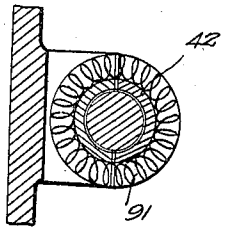


FIG. 6

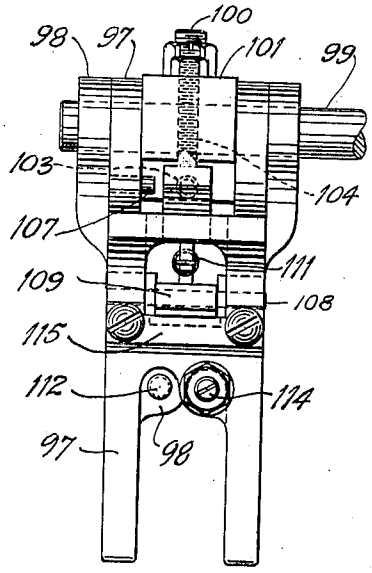
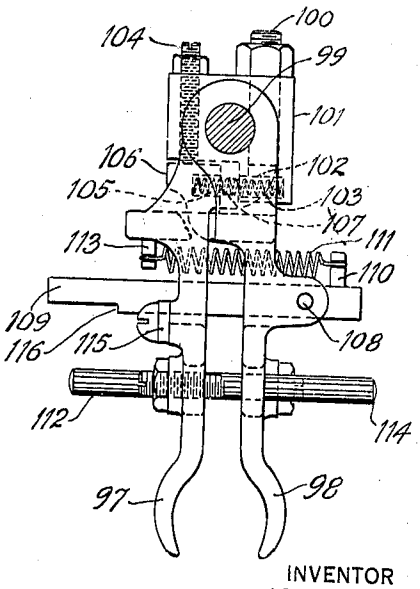


FIG. 7



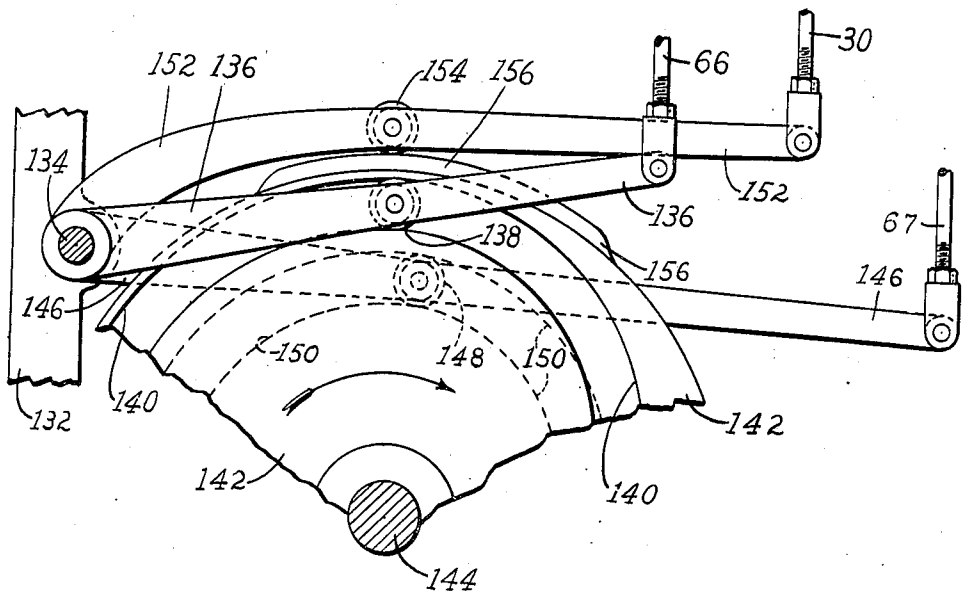
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FIG. 11



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2,331,905

UNITED STATES PATENT OFFICE

2,331,905

DUPLEX CRIMPER

John F. Halstead, Brooklyn, N. Y., assignor to International Cigar Machinery Company, a corporation of New Jersey

Application October 4, 1940, Serial No. 359,635

31 Claims. (Cl. 131—91)

This invention relates to cigar making machines and more particularly to improvements in the crimping and trimming mechanisms of a cigar machine.

The present invention discloses a satisfactory type of crimper for use with a high speed cigar machine. In speeding up the cigar production of cigar machines it is desirable that provision be made for maintaining the cigar between crimper jaws for the same length of time as, if not longer than, has been done with slower operating cigar machines.

It is therefore an object of my invention to provide a means for increasing the length of time a cigar is held in the crimping mechanism without slowing down the operation of the cigar machine.

A further object of my invention is to provide a crimper for use with high speed cigar machines which will not reduce the amount of crimping time.

A further object is to provide a crimper which has eliminated undesirable stresses upon its component parts when in a closed position.

A further object is to provide a simplified crimping device which will occupy a minimum amount of space in the machine.

A further object is to provide a set of stationary trimming knives of simplified construction cooperating with said crimping jaws.

A further object is to provide a duplex crimping mechanism in which there will be such a relative motion of the bunch shaping members at the time of their separation to release the bunch, that the bunch will be sufficiently loosened from the shaping surfaces to prevent possible injury to the bunch.

A further object is to provide a duplex crimper which will not require any more transfer arms than are used with a single crimper.

A further object is to provide a pair of improved bunch carrier fingers which can be opened by pressure applied at either side of the carrier fingers.

A further object is to provide an improved crimper which requires the moving of only one jaw to allow the insertion and removal of cigar bunches.

A further object is to provide a crimper which will not tear the binder of a cigar as it is inserted between or removed from the crimping jaws.

Other objects and features of the invention will appear as the description of the particular physical embodiment selected to illustrate the invention progresses.

In the accompanying drawings which form a part of this specification, like characters of reference have been applied to corresponding parts throughout the several views which make up the drawings, in which:

Fig. 1 is a side elevation of the improved cigar bunch shaper showing both crimper jaws in a closed position;

Fig. 2 is a front elevation of the machine in the same operating position as shown in Fig. 1;

Fig. 3 is a cross sectional partial view of Fig. 1 taken on the line 3—3;

Figs. 4 and 5 are side elevations showing the improved cigar bunch shaper in different operating positions, with Fig. 4 also showing the bunch delivering fingers inserting a cigar bunch between the jaws for crimping;

Fig. 6 is a detailed front elevation of the improved bunch carrying fingers;

Fig. 7 is a detailed side elevation of the fingers in the same operating position shown in Fig. 6;

Fig. 8 is a detail side elevation of the bunch carrier for removing crimped cigar bunches from the crimper;

Fig. 9 is a sectional front elevation of the bunch carrier shown in Fig. 8; and

Fig. 10 is a cross sectional plan view of the retarding fiber washer and spring taken along the line 10—10 of Fig. 1;

Fig. 11 is a side elevation of conventional cam actuated mechanism which may be employed for operating the crimper.

In the embodiment shown in Figs. 1 and 2, the main support block 10 has formed therein an opening 11 which receives a shaft 12 upon which there is mounted an oscillating member 13 which rocks upon shaft 12 during the crimping operation. Stop rollers 14 and 15 are fixed to member 13 by means of studs 16 and 17 (Figs. 1 and 4). Although the stopping means shown in the present embodiment are rollers, any other conventional stops could also be employed for this purpose.

The upper arm ends of member 13 (Fig. 1) have cam followers 21 and 26 connected thereto which rotate upon studs 19 and 23. A pair of cam followers similar to 21 and 26 (Fig. 1) are located on the other side of the duplex crimper shown in Fig. 1, and one of said cam followers 22 can be seen in Fig. 2. One of the uprights of member 10 has formed therein an opening 27 which supports a shaft 28 (Fig. 2).

Fixed to one end of said shaft is a crank arm 29.

A rod 30 has fixed to one of its ends a mounting 32 which has provision for the lengthening or shortening of rod 30 by means of a nut 31 (Fig. 2). The mounting 32 is connected to one end of crank arm 29 by means of a stud 119, and when an up and down movement is imparted to rod 30 it will cause shaft 28 to oscillate in the opening 27. On the other end of shaft 28 is mounted a stop head having two rounded portions 33 and two flat portions 34 (Fig. 5). The lower parts 35 and 36 (Fig. 4) of rocking member 13 have shaftways 37 and 38 formed therein for receiving slidable plungers 39 and 40. In said lower parts 35 and 36 there are mounted friction washers 41 and 42 (Fig. 4). These washers may be composed of a fabricoid or fiber material which is held against the plunger by means of springs 90 and 91. Any other suitable device might also be employed to retard the free sliding of plungers 39 and 40 in shaftways 37 and 38 (Fig. 4).

Mounted on pivots 45 and 46, which are fixed to plungers 39 and 40, are levers 43 and 44. Cam tracks 47 and 48 (Figs. 1, 4 and 5) are provided in the upper ends of levers 43 and 44 whereby the cam rollers 21 and 26 (Fig. 1) are guided. A similar set of members having like cam tracks are also found at the rear of the mechanism shown in Fig. 1. One of the cam tracks 49 can be seen in Fig. 2.

Levers 43 and 44 (Fig. 4) have arms 50 and 51 to which are attached links 52 and 53 (Fig. 1) by means of eccentric studs 54 and 55 (Fig. 1). The eccentric studs are held fixedly in position by suitable means such as set screws 54a and 55a. The eccentric studs 54 and 55 may be turned to either raise or lower links 52 and 53, which movement permits the crimping jaws to be properly aligned with one another. The other ends of links 52 and 53 are movably fixed by means of studs 58 and 59 (Figs. 4 and 5) to the elbow of levers 60 and 61, which levers in turn pivot on studs 62 and 63 (Figs. 4 and 5) mounted in a part of member 13.

Arms 64 and 65 of levers 60 and 61 are movably connected to rods 66 and 67, which rods may be lengthened or shortened as desired by adjustable means 68 and 69 (Fig. 4). Formed on top of uprights 76 and 77 (Fig. 2) of main support block 10 are guide tracks 70 and 71. Slidably mounted in said tracks are knife holding members 72 and 73 which can be immovably fixed at any desired position along said tracks by means of clamping screws 74 and 75 (Fig. 2). Knife blades 95 and 96 (Fig. 2) are removably fixed to said knife holding members by means of clamp screws 78 and 79. A similar set of knife blades is located in a similar position at the rear of the device shown in Fig. 2. One of said blades 80 can be seen in Figs. 1 and 3.

Crimping jaw molds 81 and 82 (Fig. 2) are removably fixed to the upper part of levers 43 and 44 by means of clamp bolts 83 and 84. Adjusting screws 120 cooperating with clamp bolts 83 and 84 provide suitable means for aligning the adjacent swing jaws 81 and 82 with the jaws 86 and 87 mounted on the upper part of central member 13 (Figs. 2 and 3). A similar set of crimping molds is located at the rear of the device shown in Fig. 2, one of which crimping molds 85 can be seen in Fig. 1. Clamp bolt 84 is slidably mounted in slot 88 (Fig. 2) formed in member 44, 44a. By loosening bolt 84, the crimping jaw mold 82 can be moved into any desired position to handle different length cigars. Fixed to the upper central part of member 13 is a set of duplex crimping jaws 86 and 87 (Fig. 2) mounted on each side of the central member and cooperating with the swinging jaws 81 and 82 (Fig. 2), and 85 (Fig. 1). Crimpings jaws 86 and 87 are removably and adjustably fixed to member 13 by bolts 56 and 57 or other suitable means so as to be adjustable for crimping cigars of different lengths.

The crimping jaws above mentioned have molds formed therein which conform to the contour of a cigar. Rods 66, 67 and 30 are all operated by suitable means, shown in Fig. 11, from a moving part of the cigar machine forming no part of the present invention, in timed relation with one another. Any suitable cam operating means may be employed for this purpose and reference may be had to such U. S. patents as Wahlstrom 1,442,200, Schussler 1,682,542, Marsh et al. 1,191,199 and Rundell 1,523,721 for examples of cam operating means. Referring to the cam structure in Fig. 11, which is similar to that shown in U. S. Patent 1,442,200, a cam member 142 is mounted on a shaft 144 driven by suitable means from the main shaft of a cigar machine. Suitable cam tracks 140 and 150 are formed on opposite sides of cam 142 and actuate cam rollers 138 and 148 respectively which travel in these tracks. Cam lever arms 136, 146 and 152, carrying cam rollers 138, 148 and 154, respectively, are all mounted upon a common shaft 134 supported in a stationary bracket 132. The cam roller 154 rides on the periphery of cam 142 and receives actuating movement from a conventional hump 156 secured to said periphery. In the present showing, cam roller 154 is held against the periphery of cam 142 by gravity. Spring means could of course be used to supplement the force of gravity to bias roller 154 against said periphery. It is understood that this showing of the cam operating means is for purposes of illustration only since any other suitable operating mechanism may be employed.

The carrying fingers heretofore used in connection with crimping jaws cannot very well be used with a duplex crimper such as the one shown in the present application because they could only be opened by pressure from one side. For this reason it was necessary to design novel carrier fingers for use with the type crimper disclosed herein which could be opened by pressure from either side of the carrying fingers. The fingers shown in Figs. 6 and 7 can be operated from either side of the crimper. A shaft 99 is journaled to an arm 125 for holding the carrying gripper fingers in a more or less vertical position at all times, when moving said fingers from a receiving station to a discharging station or vice versa. Fixedly mounted on the shaft 99 is a sprocket wheel 126 over which runs a sprocket chain 127. The other end of arm 125 is fixedly mounted on shaft 128 which in turn is journaled to a suitable bearing bracket 129 which is secured to the frame of the machine. A second sprocket 130 is secured to the bearing bracket 129. The shaft 128 is actuated by suitable mechanism to swing the arm 125 from one station to another during certain predetermined periods of the machine cycle. During these operations the sprocket chain 127 will keep the bunch carrying fingers in a substantially vertical position which is somewhat similar to that shown in my Patent No. 1,786,608.

Also fixedly mounted to shaft 99 by means of clamp bolt 100 is a block 101 having an opening 102 for receiving a spring 103 (Fig. 7). The block 101 also has an adjustable stop screw 104 mounted therein. Swingingly mounted on the shaft 99 are two fingers 97 and 98. Finger 98 has an opening 105 for receiving the other end of spring 103 and also a protruding stop 106 which operates against stop screw 104. Normally, spring 103 will urge finger 98 against stop 104, which stop determines the limit of its forward or closing swing motion. Also pivotally mounted on finger 98 by means of a stud 108 is a latch bar 109 having a pin 110 to which is secured a spring 111. There is also secured to finger 98 a plunger 112 which protrudes through and beyond an opening formed in finger 97. Finger 97 is swingingly mounted on shaft 99 and has a pin 113 fixed thereto to which is secured the other end of spring 111. The spring 111 will apply latching tension to latch 109 and will also continuously urge fingers 97 and 98 toward one another. Finger 97 has a stop 107 connected thereto which operates against a part of block 101 to limit the extent of its closing swing motion, functioning in the same manner as the stop 106 of finger 98. Stops 107 and 106 operating against block 101 limit the extent to which the fingers 97 and 98 can approach each other. Finger 97 also has a plunger 114 connected thereto which projects through and beyond an opening formed in finger 98.

A bar 115 is fixed to finger 97 and cooperates with the notch 116 formed in latch 109 so as to maintain fingers 97 and 98 in latched open position by means of this latching device when said fingers are spread apart. It will therefore be seen that fingers 97 and 98 can be latched into open position by pushing either plunger 112 or 114. At the pickup station (not shown), a suitable element is provided to unlatch the fingers by raising bar 109 in order to close the fingers about an uncrimped cigar bunch preparatory to carrying it to the crimpers.

The operation of the present invention may be briefly described as follows:

With the stop roller 14 resting against the rounded edge 33 of the stop head under the downward pull of rod 67, suitable bunch carrier fingers such as 122 and 123 (Fig. 9) for removing crimped cigar bunches descend and grip a crimped cigar bunch located between the bunch shaping members 85 and 86. The construction and operation of said fingers is fully disclosed in a prior patent, No. 1,786,608, granted to me on December 30, 1930, and a detailed description of the same is therefore not deemed necessary here and has been omitted for the sake of brevity. A cam 140 then causes rod 66 (Fig. 4) to ascend. The rod 66 in turn raises lever arm 64 of lever 60 which pivots on stud 62. The elbow of lever 60 in turn causes the upper part of link 52 first to move outward and then upward. Link 52 in turn causes lever 43 pivoting on stud 45 to ascend. Friction washer 41 retards plunger 39 sufficiently to cause cam follower 26 to track against the inside wall 89 (Fig. 4) of cam track 47 in moving outward.

It will be noted that the crimping jaws move apart with a peeling motion as opposed to a straight upward or outward motion. This peeling like opening prevents a crimped cigar bunch from being split apart because of any sticking of the cigar to the faces of the molds. It is for obtaining this peeling motion that cam track 47 is shaped as it is.

When the crimping jaws 86 and 85 have been opened up, as shown in Fig. 4, the bunch carrier fingers 122 and 123 (Figs. 9 and 10) gripping the crimped cigar bunch ascend to place the bunch at some other bunch receiving station on the machine. A cam 156 then operates rod 30 so as to cause the stop head (33, 34) to turn slightly and to have its flat edge 34 face the stop roller 14. This flat face 34 permits member 13 to rock under the pull of rod 67 slightly farther in the direction of said rod, thus throwing the center 94 of the bunch receiving crimper out of line with the center of shaft 12 and stud 28 (Fig. 4). With the bunch receiving crimper thus out of line, other bunch carrying fingers gripping a cigar bunch (shown in Fig. 4) descend with the cigar to be crimped. Since the bunch receiving jaw is off center, there is no danger of the cigar bunch hitting the edge 117 of the crimper jaw 86 on its descent with the cigar bunch. As the cigar bunch is thus held between the open jaws 85 and 86, the rod 66 begins to descend. The rod 66 then pulls the arm 64 downward and the elbow of lever 60, to which the link 52 is fastened, causes said link to move inward and downward. The link 52 in turn causes arm 50 to descend which causes lever 43 pivoting on stud 45 also to descend. Friction washer 41 retards the descent of plunger 39 to which the lever 43 is pivotally fixed (Fig. 4). This retarding effect causes lever 43 first to swing inward before beginning its downward movement, and cam follower 26 will therefore follow the outside track 88 of the cam track 47. This closing motion, shown by the arrows in Fig. 4, embodies a very satisfactory method for closing a set of crimping jaws about a cigar bunch.

In closing inwardly, the edges of crimping jaw 85 first strike the ends of the cigar bunch C (Fig. 4), the bunch then being momentarily held at the ends by jaws 85 and 86 and also by the fingers 97 and 98. In continuing further its inward closing movement, an upper part of lever 43 strikes against plunger 112, thereby compressing spring 103 and opening outwardly finger 98 until it is latched by bar 109 in said open position.

It will be noted that finger 97 has not moved during this time because stop 107 acting against the fixed block 101 has limited the extent of its movement toward finger 98. However, finger 97 at this time is no longer in contact with the cigar bunch C because the jaw 85 has pushed the bunch away from said fingers against jaw 86 in its closing operation.

The fingers 97 and 98 then withdraw while they are thus in latched open position without touching any part of the cigar. A suitable cam like structure 124 connected to the upper part of lever 43 and operating against plunger 112, serves to keep the fingers clear of the cigar while being withdrawn.

Crimper jaws 85 and 86 are locked in their closed position by means of a toggle action.

The stud 58 carried by the elbow of lever 60 is pushed past the dead center line formed by studs 62, 58 and 54, and the elbow of lever 60 comes to rest against a stop 121 connected to member 13. This toggle arrangement will of course permit the opposed jaws to be opened or closed at the end of each rocking movement, and the stop 33, 34 will permit a slight additional rock to take place when one set of jaws is open to facilitate the receipt of a cigar bunch for

crimping, in a manner heretofore described. The opposite set of crimping jaws, however, will, even when the slight additional rock is taking place, be held in locked position by means of the toggle arrangement just mentioned.

This arrangement keeps the jaws firmly locked during the rocking movements of the crimper.

The rod 66 continues its descent and this causes the crimping device to rock on shaft 12 in the direction of rod 66. As the stop roller 14 begins to leave the flat edge 34 of the stop head, the rod 30 is actuated to turn the stop head so that the round edge 33 faces the stop roller 15. As the crimping device is rocking under the pull of rod 66, the closed crimper jaws move past stationary trimming knives (one of said knives 60 being shown in Fig. 1), which cut off the tobacco portions overhanging the closed crimper jaws. The rocking movement in the direction of rod 66 is brought to a stop when stop roller 15 comes into contact with the rounded portion 33 of the stop head.

It will be noted that a force is exerted upon the adjacent swinging jaws from a direction diametrically opposed to that of the stress exerted upon the central jaw member, thereby eliminating undesirable crimping stresses prevailing in crimpers used heretofore which caused a great deal of wear upon different parts of the crimper and frequently resulted in the shaft of the lower crimper jaw being broken off during the crimping process.

Bunch carrying fingers 122 and 123 (Figs. 8 and 9) then descend in the space between the closed crimper jaws 86 and 81, and grip the crimped cigar. A cam (not shown) causes rod 67 to ascend carrying with it arm 65. The elbow of lever 61, to which one end of link 53 is secured, first moves outward and then upward, said lever pivoting on stud 63. Link 53 in turn causes arm 51 of lever 44 to ascend, said lever pivoting on stud 46 in ascending.

Friction washer 42 (Figs. 5 and 10) retards the plunger 40 sufficiently to cause the cam follower 21 mounted on stud 23 to track against the inside track 118 (Fig. 5) of a cam track 48 in moving outward. The rest of the cycle is similar to that already set forth in regard to the adjacent set of crimping jaws 85 and 86.

It is to be noted that only one bunch carrying member is used for removing crimped cigar bunches from both of the cigar crimper jaws, and only one bunch carrying member is used for inserting cigar bunches to be crimped into both cigar crimper jaws.

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 concrete embodiments of the same. The invention therefore is not to be restricted to the precise details of the structure shown and described.

What is claimed is:

1. In a cigar bunch shaper, the combination with an oscillating member having mounted thereon two sets of jaws, one on each side of said member, separate movable jaws cooperating with said mounted jaws for crimping cigar bunches, and mechanism for oscillating said member and bringing said jaws alternately into crimping relationship with said member.

2. In a cigar bunch shaper, the combination with a central member, of a support permitting said central member to rock to and fro, two sets of jaws mounted one set on each side of said central member, separate oscillating jaws cooperating with said mounted jaws for crimping cigar bunches, and means for bringing said jaws into crimping relationship with said member.

3. A cigar crimper comprising a rocking member, two sets of jaws mounted one set on each side of said member in the path of the rocking movement, separate movable jaws adjacent to the jaws mounted on said member, and means for bringing said jaws into closed relationship for crimping cigars.

4. In a cigar bunch crimper, the combination with a member having mounted thereon a lower jaw, a separate upper jaw cooperating exclusively with said lower jaw for crimping cigar bunches, and mechanism for bringing said upper jaw periodically into shaping relationship with said lower jaw, said mechanism comprising instrumentalities connected to said upper jaw for bringing said upper and lower jaws into shaping relation by movement of said upper jaw only, first in one direction and secondly in another direction transverse to the first direction to avoid damaging a cigar bunch.

5. In a cigar machine, a duplex crimper comprising a central block mounted on a horizontal member, jaws mounted on two opposite faces of said central block, movable bunch shaping jaws adjacent to said central block, means for bringing the movable jaws into bunch shaping relationship with the jaws mounted on said central block so as to impart a rocking movement to said central block in the crimping cycle.

6. A cigar machine having transfer means, a cigar crimper comprising a movable central member, jaws mounted on said central member, movable bunch shaping jaws adjacent to said central member, means for bringing the movable jaws into bunch shaping relationship with the jaws mounted on said central member, and means for imparting a horizontal movement along a vertical plane to the entire crimper to bring said jaws to a station beneath said transfer means for receiving and discharging cigars.

7. A cigar bunch shaper comprising a rocking central member having sets of bunch shaping jaws mounted on opposite sides of said central member in the path of its rocking movement and movable into a bunch receiving position, sets of bunch shaping jaws adjacent to said central member, means for bringing said adjacent jaws into bunch shaping relation with the jaws mounted on said central member by only moving said adjacent jaws when said jaws are in bunch receiving position, and for rocking said central member, and means for adjusting the tightness of the squeeze between the adjacent jaws and the jaws mounted on said central member.

8. In a cigar bunch shaper, the combination with supply and discharge transfers arranged to supply and discharge bunches from a single station, of an oscillating member having mounted thereon two sets of bunch shaping jaws, said member being movable to carry said sets of jaws to and from said single station, separate jaws cooperating with said mounted jaws for shaping cigar bunches, and mechanism for oscillating said member and for periodically bringing said cooperating sets of jaws into shaping relationship with said mounted jaws and for opening said jaws at said station for receiving and discharging the bunches.

9. In a cigar bunch shaper, the combination with a central member, of a support permitting said central member to rock to and fro, means

for stopping the rocking of said central member at one position for discharging a cigar bunch and then allowing said member to increase the distance of its rocking movement for receiving a cigar bunch, jaws mounted on each side of said central member, separate movable jaws cooperating with said mounted jaws for crimping cigar bunches, and means for bringing said jaws into crimping relationship with said member.

10. In a cigar shaping machine, the combination of a central member so secured that it can be tilted to and fro, jaws mounted on said central member, jaws mounted on members adjacent to said central member, and means for bringing said adjacent jaws into shaping relationship with the jaws on said central member to tilt said central member to a single cigar bunch receiving and removing station.

11. In a cigar shaping machine, the combination of a central member so secured that it can be tilted to and fro, jaws mounted on said central member, jaws mounted on members adjacent to said central member, means for bringing said adjacent jaws into shaping relationship with the jaws on said central member to tilt said central member to a single cigar bunch receiving and removing station, a device for inserting cigar bunches into said shaping jaws, and another device for removing cigar bunches from said shaping jaws.

12. In a cigar shaping machine, the combination of a central member so secured that it can be tilted to and fro, jaws mounted on said central member, jaws mounted on members adjacent to said central member, means for bringing said adjacent jaws into shaping relationship with the jaws on said central member to tilt said central member to a single cigar bunch receiving and removing station, and means for inserting into and removing from said shaping jaws cigar bunches.

13. In a cigar machine, the combination with crimping jaws for shaping the ends only of a cigar bunch, of stationary trimming knives for trimming the ends of a cigar bunch, and means for moving said cigar bunch while being held in said crimping jaws past said stationary trimming knives.

14. In a cigar machine, a multiple crimping device for shaping the ends only of a plurality of cigar bunches in combination with stationary trimming knives for trimming the ends of a cigar bunch, and means for moving each cigar bunch while being held in the multiple crimping device past said stationary trimming knives.

15. In a cigar machine, a movable duplex crimping device having jaws for shaping the ends of a cigar bunch, said jaws being adjustable to accommodate different length cigars in combination with stationary knives for trimming the ends of a cigar bunch as it is moved past said knives, while being held in the duplex crimping device, and means for adjusting said knives to trim the ends of different length cigars.

16. In a cigar bunch transfer, the combination with an arm, of bunch grippers carried by said arm, means for oscillating said arm to cause said grippers to transport a bunch, and means on each side of said grippers and operable selectively at either side of said grippers to spread said grippers apart.

17. In a cigar bunch transfer, the combination with an arm, of bunch grippers carried by said arm, means for oscillating said arm to cause said grippers to transport a bunch, means on each side of the grippers and operable selectively at either side of said grippers to spread apart the latter, and means for maintaining the grippers in open position.

18. In a cigar bunch transfer, the combination with an arm, of bunch grippers carried by said arm, comprising opposed gripping fingers, elements connected to each of said fingers and passing through openings in the opposed gripping fingers for spreading apart said opposed gripping fingers by means operating against said elements from either side of the grippers, and means for oscillating said arm to cause the grippers to transport a bunch.

19. In a cigar bunch transfer, the combination with an arm, of bunch grippers carried by said arm, comprising opposed gripping fingers, stops connected to each of said fingers for limiting the inward movement of said gripping fingers, elements projecting from each of said fingers and passing through a cutaway portion formed in the opposed gripping fingers for spreading apart said opposed gripping fingers, means for latching the gripping fingers in open position, and means for oscillating said arm to cause said grippers to travel between bunch receiving and discharging stations.

20. In a cigar bunch transfer, the combination with an arm, of bunch grippers carried by said arm, comprising opposed gripping fingers, stops connected to each of said fingers for limiting the inward movement of said gripping fingers, elements connected to each of said fingers and operating past the opposed gripping fingers for spreading apart the latter, means for latching the gripping fingers in open position, and means for oscillating said arm to cause said grippers to travel between bunch receiving and discharging stations.

21. A cigar crimper comprising a rocking central member having bunch shaping jaws mounted on opposite sides of said central member across the path of its rocking movement, means for stopping the rocking movement of said central member at one position for discharging crimped cigar bunches, means for stopping the rocking movement of said central member at another position for receiving cigar bunches for crimping, separate bunch shaping jaws adjacent to said central member, and mechanism for bringing said adjacent jaws into bunch shaping relation with the jaws mounted on said central member by moving said adjacent jaws only and for rocking said central member.

22. A cigar crimper comprising a rocking member, a set of jaws mounted on one side of said member in the path of the rocking movement of said member, a set of jaws mounted on another side of said member, separate sets of movable jaws adjacent to the sets of jaws mounted on the sides of said member, means for bringing said adjacent sets of jaws into closed relationship with the sets of jaws on said rocking member for crimping cigars, and toggle means for locking said jaws in closed relationship.

23. In a cigar machine, a duplex crimper having a central block mounted on a horizontal member, jaws mounted on two opposite faces of said control block, movable punch shaping jaws adjacent to said central block, means for each of said movable bunch shaping jaws for bringing the movable jaws into bunch shaping relationship with the jaws mounted on said central block so as to impart a rocking movement to said central block, said means comprising a bell crank pivot-

ing on said central block, a link secured to an elbow of said bell crank, a lever on which said adjacent jaws are mounted and to which another end of said link is connected, and means for imparting an up and down movement to said bell crank.

24. A cigar bunch crimper for shaping only the ends of a cigar bunch, comprising a central member movable along a predetermined path of travel, two sets of jaws mounted one set each on opposite sides of said central member across the path of travel of said central member, separate movable jaws associated with each of the jaws mounted on said central member and cooperating exclusively therewith, and means for bringing said jaws into closed relationship for shaping only the ends of cigars.

25. A cigar bunch crimper for shaping the ends of a cigar bunch comprising, a central member movable into different bunch receiving positions and having sets of bunch shaping jaws mounted on opposed sides of said central member; separate sets of bunch shaping jaws adjacent to said central member, each of which cooperates exclusively with one of the sets of jaws mounted on said central member; and means for bringing each separate set of bunch shaping jaws in succession into bunch shaping relation with the jaws on said central member by only moving each of said separate sets when said central member has been placed in a respective bunch receiving position.

26. A cigar bunch shaper comprising, a rocking central member movable into different bunch receiving positions and having bunch shaping jaws mounted on opposite sides of said central member across the path of its rocking movement, separate bunch shaping jaws adjacent to said central member, means for bringing said adjacent jaws into bunch shaping relation with the jaws mounted on said central member by only moving each of said adjacent jaws when said central member has been placed in a respective bunch receiving position, and means for rocking said central member while said jaws are in bunch shaping relation.

27. A cigar bunch shaper for shaping the ends of a cigar bunch comprising, a central member movably mounted upon a support, bunch shaping jaws mounted on said member, separate bunch shaping jaws adjacent to said central member and cooperating therewith, means for bringing said separate bunch shaping jaws into bunch shaping relation with the jaws on said central member by only moving said separate bunch shaping jaws and maintaining the jaws on said central member free from movement, means for adjusting the alignment of said bunch shaping jaws, and means for adjusting the degree of squeeze exerted by said bunch shaping jaws.

28. In a cigar machine, the combination with a bunch shaper comprising a stationary support, of a horizontal member mounted in said support; a block mounted on said horizontal member; a jaw, having a shaping face, mounted on said block; a second jaw adjacent to said block and relatively movable towards said first named jaw into bunch shaping position; and means for withdrawing from said bunch shaping position said second named jaw along a path at an angle to the face of said first named jaw while said first named jaw is maintained stationary in order to loosen the bunch from the jaws.

29. In a cigar machine, a crimper comprising, a rocking member; two bunch shaping devices mounted across the path of the rocking movement on each side of said member, each of said devices having an opposed shaping device; means for moving one opposed shaping device into bunch shaping position with one of the devices mounted on said rocking member and tilting said member in the direction of said last named opposed shaping device; means for withdrawing the other opposed shaping device at an angle from the bunch shaping device on the other side of said rocking member to effect a peeling motion in order to loosen the bunch from between the two last named shaping devices; and means for alternating the opening and closing of said devices in timed relation with one another.

30. A cigar machine in combination with a duplex crimper comprising, a central member; two sets of bunch shaping devices mounted on opposite sides of said central member, each of said sets on said central member having an opposed set of movable shaping devices cooperating therewith to crimp cigar bunches; means for moving one set of opposed movable devices into bunch shaping position with one set of the shaping devices mounted on said central member while maintaining the central member substantially free from movement; and means for withdrawing the other set of opposed movable devices at an angle from the other bunch shaping device mounted on said central member to effect a peeling motion in order to loosen the bunch from said last named movable device, said peeling motion being effected by moving said last named opposed movable shaping device and maintaining said central member stationary.

31. A crimper for cigar bunches comprising, a member supporting a cigar bunch shaping device, a second member carrying a bunch shaping device constructed and arranged to coact with said first named bunch shaping device, operating means for moving the bunch shaping device carried by said second member into and out of bunch shaping relation with said first named bunch shaping device, means for causing the bunch shaping device on said second member to travel along one path when moving into bunch shaping relation and to travel along another path when separating from bunch shaping relation with said first named device to effect a peeling motion therefrom which will avoid injuring the cigar bunch, and means for maintaining said first named shaping device stationary as the shaping member carried by said second device is being moved into and out of bunch shaping relation to effect said peeling motion.

JOHN F. HALSTEAD.

CERTIFICATE OF CORRECTION.

Patent No. 2,331.905. October 19, 1943.

JOHN F. HALSTEAD.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, first column, line 46, before "cam" strike out "a"; and second column, line 50, claim 7, before "sets" insert --separate--; line 65, claim 8, before "jaws" insert --sets of--; page 5, second column, line 69, claim 23, for "control block, movable punch" read --central block, movable bunch--; 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 21st day of December, A. D. 1943.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.