

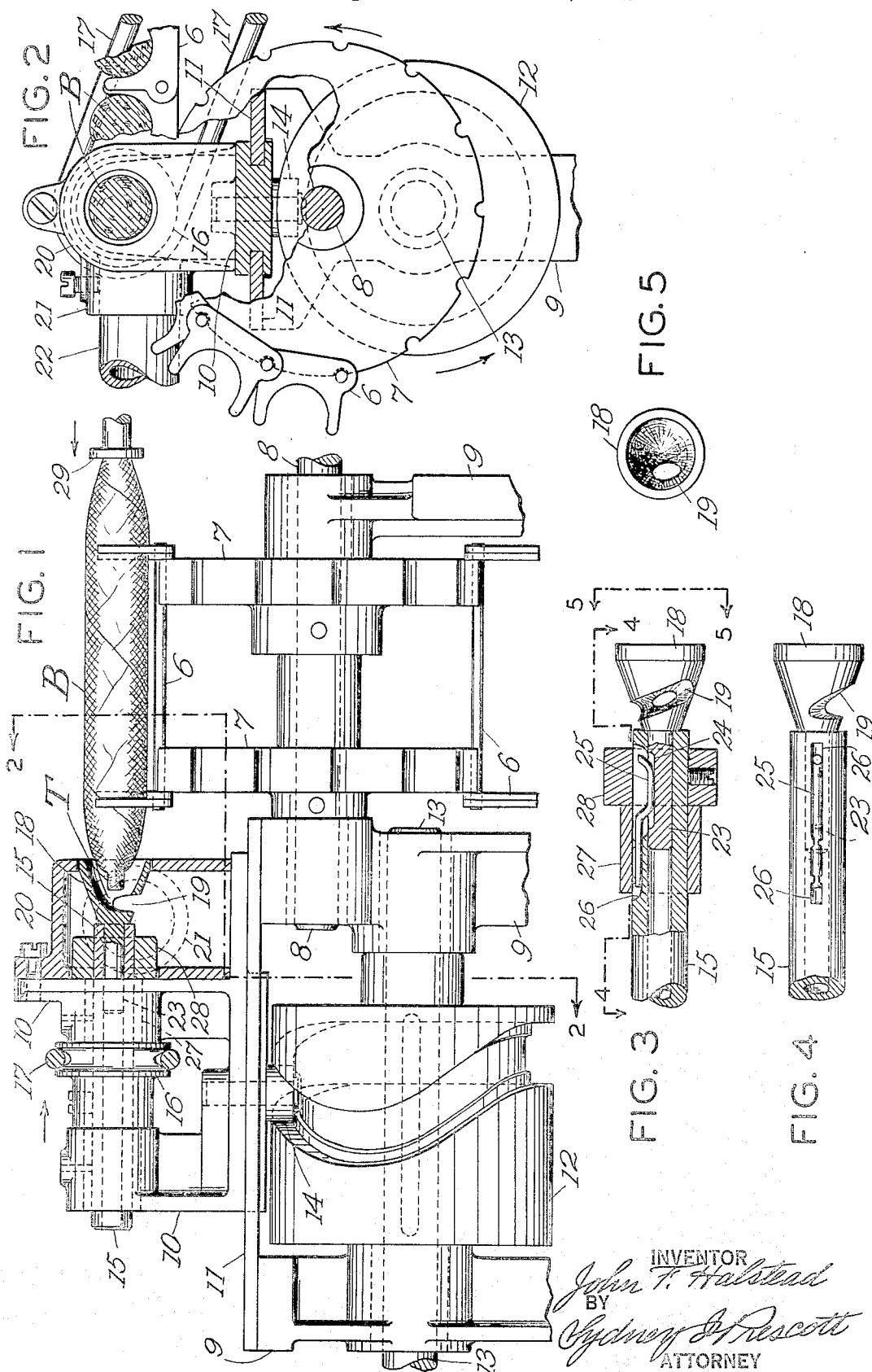
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CIGAR BUNCH HEAD TRIMMER

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CIGAR BUNCH HEAD TRIMMER

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9 Claims. (Cl. 131-37)

This invention relates to cigar bunch head trimmers, its main object being to provide a simple and efficient mechanism for removing the surplus material from the heads of partially formed cigar bunches to give the bunches final form.

For various reasons, the bunches as received from the shaping devices particularly ones of the mold type, have surplus material at their head ends which must be removed before the bunch is wrapped in order to secure properly shaped cigars. For instance, due to the axial channels provided in the ends of bunch molds to admit the binder ends, the shaped bunches when taken from the molds, even after trimming the overhanging ends of the binder, have cylindrical projections or teats projecting from their head ends which must be reduced to the final shape of the cigar to form a good cigar.

In prior devices for this purpose a nicking mechanism of some kind has been employed which has ordinarily taken the form of notching knives radially moved into the head of the cigar for removing narrow wedges of material after which the bunch head was compressed to bring it down to the shape of the completed cigar. These devices were not wholly satisfactory. For instance, the projecting prongs with the sharp edges or corners, resulting from the notching system gave trouble by cutting the delicate wrapper particularly when the notched head end of the cigar became a little dry, aided by the fact that some pressure on the wrapper was necessary to effect closing of the nick. When the pressure was reduced the nick would not always be closed. Also due to the pressure required to squeeze the nickel end to final form and the fact that the notches were of uniform width regardless of the amount of surplus material at the head, so that the material removed did not always equal the surplus material present, improperly shaped cigars or cigars which did not draw well because having too much material concentrated at the head or torn wrappers sometimes resulted.

Accordingly the principal object of the present device is to avoid the difficulties above enumerated and to provide a bunch head trimmer which reduces the head to the exact shape desired without relying on compression and without disturbing the interior of the head.

Another object of the invention is to provide a simple and effective device for driving the head trimming tool from a driving spindle and at the same time permitting quick detaching thereof. With these and other objects not specifically men-

tioned in view the invention consists in certain constructions and combinations which will be hereinafter fully described and then particularly pointed out in the claims hereunto appended.

In the accompanying drawing, which forms a part of this specification and in which like characters of reference indicate the same or like parts, Fig. 1 is a side elevation, partially in cross-section, of a portion of a bunch machine equipped with the improved bunch head trimmer; Fig. 2 is an end elevation taken on line 2-2 of Fig. 1; Fig. 3 is a sectional side elevation of the rotary trimmer; Fig. 4 is a top view on line 4-4 of Fig. 3; and Fig. 5 is a front view of the trimmer on line 5-5 of Fig. 3.

In carrying the invention into effect there is provided a device for supporting a cigar bunch having a partially formed head, a head shaped thimble having a shearing edge in its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge to circumferentially shear excess tobacco from said head and give it its final form by planing off said excess material. In the best constructions the shearing edge is flush with the inner wall of the thimble so as to render it ineffective when the head reaches final form. In the best construction, also the invention includes a driving element, a driven tool designed to rotate in contact with the end of the cigar and a driving connection between said elements permitting quick detaching from the driven of the driving element comprising a keyway in one element and a key connected to the other element and spring pressed into said keyway.

Referring to Figs. 1 and 2 of the drawing, a cigar bunch B is carried from the molds by an endless chain 6 intermittently advanced by sprockets 7 mounted on a suitably driven shaft 8 supported by the frame 9 of the bunch finishing machine. During each rest of the chain 6, a slide 10 is moved along a pair of rails 11 fastened to frame 9, by the rotation of a cam 12 mounted on a shaft 13 supported in bearings of a frame 9, the track of cam 12 engaging a roller 14 attached to slide 10. The shaft 13 is driven in synchronism with shaft 8 by suitable gearing connecting the same with the main drive of the bunch machine.

Concentric with the axis of bunch B, the slide 10 carries a hollow shaft element 15 for driving the trimmer, on which shaft is mounted a pulley

16 driven by a belt 17 from the bunch machine. Into the bore of shaft 15 is inserted the driven trimmer element 18 which in this case simply consists of a bunch head shaped thimble having its inner wall of the desired final shape of the bunch head and having a narrow elongated oblique or spirally located opening cut into the thimble wall and extending to the portion thereof engaging the extreme tip of the bunch so that a shearing edge flush with the inner wall of the thimble is formed. When this trimmer is moved into contact with the bunch B by the cam 12, the cutting edge gradually trims off the projection T due to the rotation of shaft 15, until in the inmost position of slide 10, the bunch head has the exact final shape prescribed by the shape of the trimmer and therefore requires no compressing or reshaping of any kind during wrapping. Since the opening extends through the thimble it provides a means of escape for the tobacco sheared from the head.

The track of cam 12 is so shaped that, on the inward stroke, the slide 10 advances comparatively rapid until the cutting edge of the trimmer 18 engages the teat T and then advances slowly while trimming the bunch head. On the return stroke, the slide resumes its rapid motion, thus leaving most of the available time for the actual trimming operation.

The cutting head of trimmer 18 is surrounded by a housing 20 attached to slide 10, this housing having an outlet 21 adapted for the attachment of a hose connection 22 through which the scrap produced by the trimming operation is carried off by suction.

The appearance of the trimmer 18 and the manner of securing the same in the bore of drive shaft 15 for quick detaching is shown in Figs. 3 to 5. The shaft 23 of the trimmer is provided with a narrow axial groove or keyway having closed bevel ends 24, into which resiliently presses the end of a wire spring 25 laid in an axial slot 26 cut radially into and through one wall of shaft 15, the said spring being held in the bottom of the groove portion of slot 26 by forcing the ends of the groove inward over the spring as shown in Fig. 4, the spring 25 then being clear of the bushing 27 in slide 10 and of the positioning collar 28 attached to shaft 15. When inserting the shank 23 into the bore of shaft 15, the curved end of spring 25 is raised, thereby tensioning the spring so that, upon turning the trimmer, it will snap into its groove 24 as soon as the latter registers with slot 26 of shaft 15.

The spring 25 acting as both a driving and retaining element thus locking the groove 24 to slot 26, the trimmer 18 is held against angular displacement in the bore of shaft 15 and the rotation imparted to shaft 15 by the belt 17 is transmitted to the trimmer. To remove the latter, it is only necessary to insert a stout wire or suitable tool into the open end of the bore of shaft 15 and to push its shank 23 out of engagement with spring 25 which will then lie loosely in slot 26.

The bunch B during the trimming operation is held in position against the pressure of the trimmer by a stop 29 slidably carried by frame 9 and pushed against the tuck end of the bunch during a dwell in the movement of the conveyor chain 6 by suitable means controlled by the bunch machine drive. To prevent rotation of the bunches during trimming, the pockets of chain links 6 may be made of sufficiently snug fit to prevent rotation or rotation may be other-

wise prevented by preferably the trimming operation takes place at the position at which the bunch is gripped by the transfer (not shown) which carries the bunch to the mechanism which applies the wrapper, the trimming taking place after the bunch is gripped by fingers of the transfer but before the transfer moves away.

What is claimed is:

1. The combination with a device for supporting a cigar bunch having a partially formed head, of a head-shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge with respect to the thimble to circumferentially shear excess tobacco from said head and give it its final form.

2. The combination with a device for supporting a cigar bunch having a partially formed head, of a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge with respect to the thimble to circumferentially shear excess tobacco from said head and give it its final form, said edge being integral with said thimble.

3. The combination with a device for supporting a cigar bunch having a partially formed head, of a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge with respect to the thimble to circumferentially shear excess tobacco from said head and give it its final form, said edge being flush with the inner wall of said thimble to render it ineffective when said head is given its final form.

4. The combination with a device for supporting a cigar bunch having a partially formed head, of a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge with respect to the thimble to circumferentially shear excess tobacco from said head and give it its final form, said edge and said opening being spirally located with respect to the axis of the thimble.

5. The combination with a device for supporting a cigar bunch having a partially formed head, of a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head, and means for producing relative movement of a bunch supported by said device and contacting with said edge with respect to the thimble to circumferentially shear excess tobacco from said head and give it its final form, said device including bunch transporting means.

6. A device for giving final form to the partially formed head of a cigar bunch, comprising a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head and adapted on relative rotation of said edge and a bunch contacting

therewith to circumferentially shear excess tobacco from said head to give it its final form.

7. A device for giving final form to the partially formed head of a cigar bunch, comprising
 5 a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head and adapted on
 10 relative rotation of said edge and a bunch contacting therewith to circumferentially shear excess tobacco from said head to give it its final form, said edge being integral with said thimble.

8. A device for giving final form to the partially formed head of a cigar bunch, comprising
 15 a head shaped thimble having a shearing edge at its inner wall and an opening through said wall adjacent said edge for the escape of tobacco sheared from said head and adapted on

relative rotation of said edge and a bunch contacting therewith to circumferentially shear excess tobacco from said head to give it its final form, said edge being flush with the inner wall of said thimble to render it ineffective when
 80 said head is given its final form.

9. A device for giving final form to the partially formed head of a cigar bunch, comprising a head shaped thimble having a shearing edge at its inner wall and an opening through said
 85 wall adjacent said edge for the escape of tobacco sheared from said head and adapted on relative rotation of said edge and a bunch contacting therewith to circumferentially shear excess tobacco from said head to give it its final
 90 form, said edge and said opening being spirally located with respect to the axis of the thimble.

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