April 28, 1936. G. C. WHITTLES 2,038,866

TOBACCO BUNCHING MACHINE

Filed July 25, 1934 2 Sheets-Sheet 1

Fig. 1

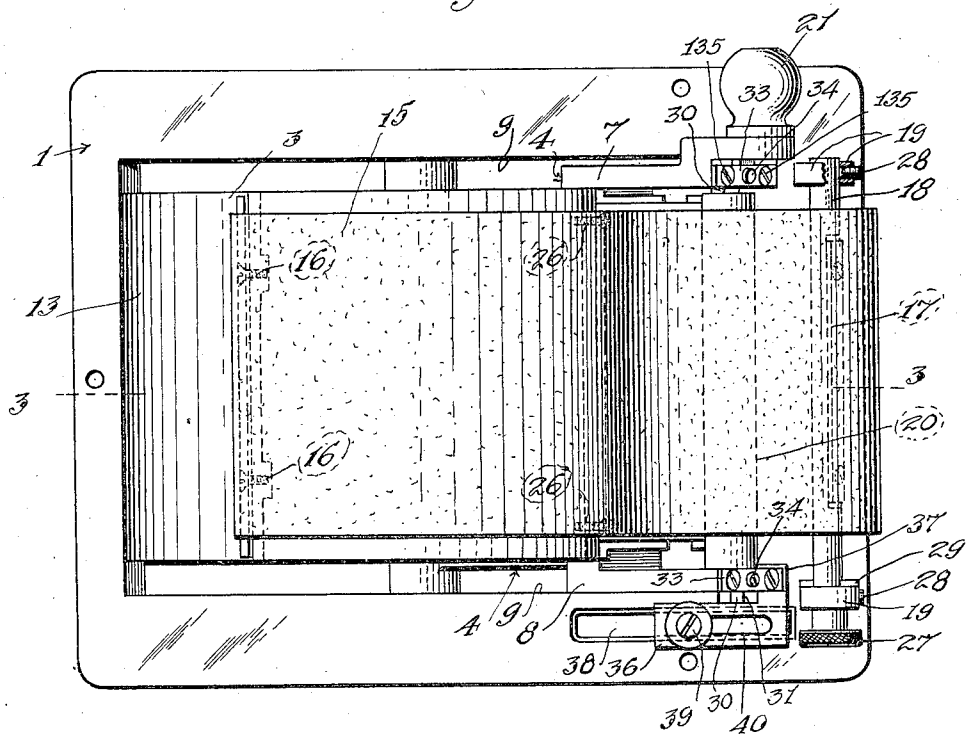


Fig. 2

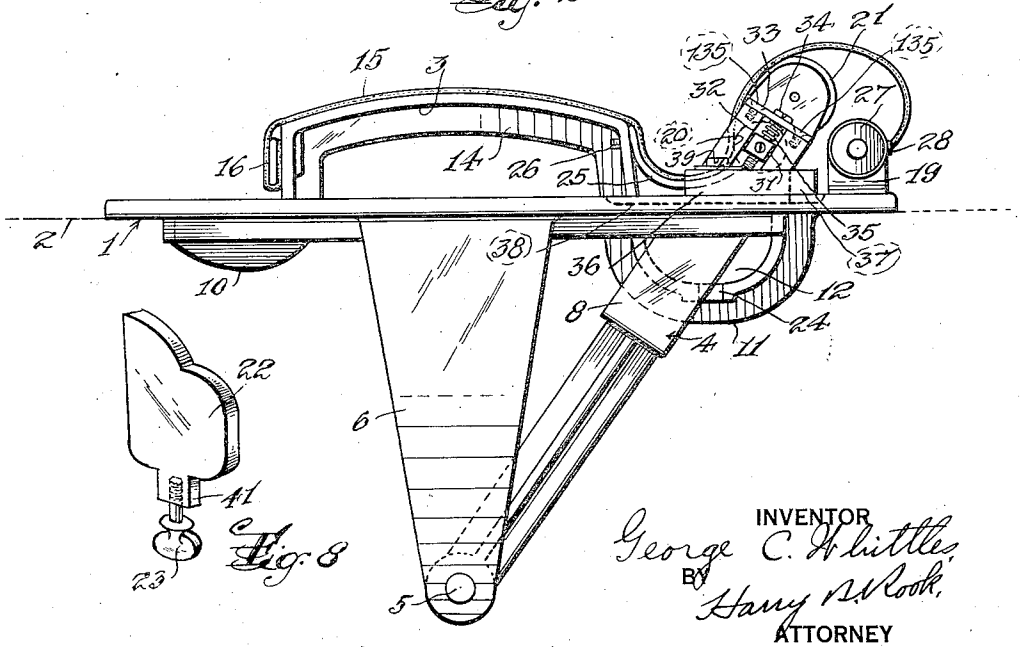


Fig. 8

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Fig. 3

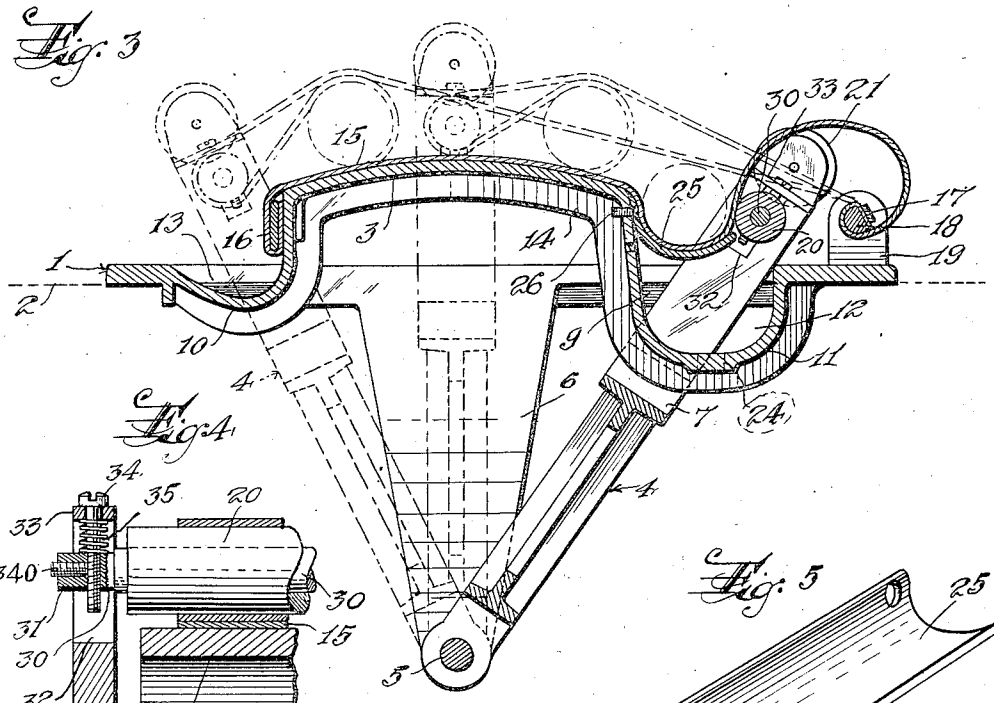
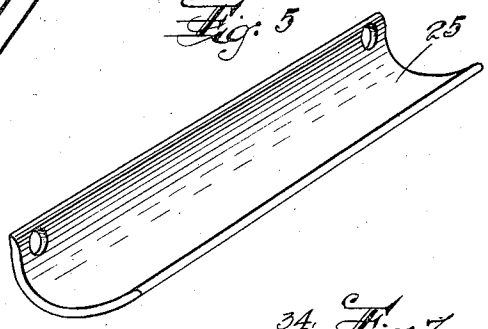


Fig. 4

Fig. 5



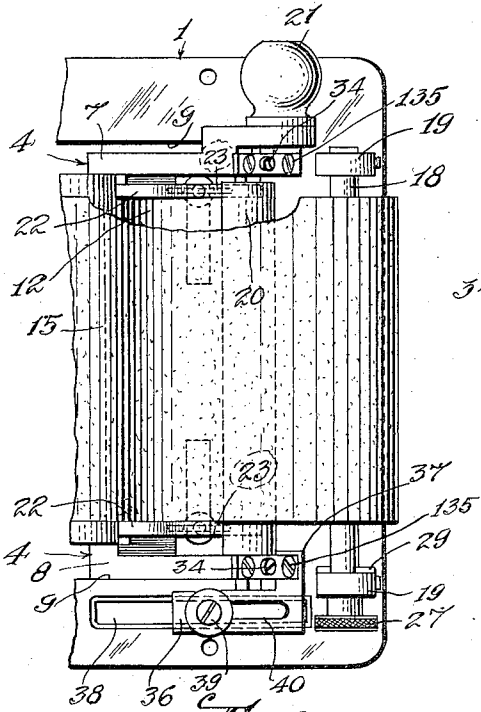
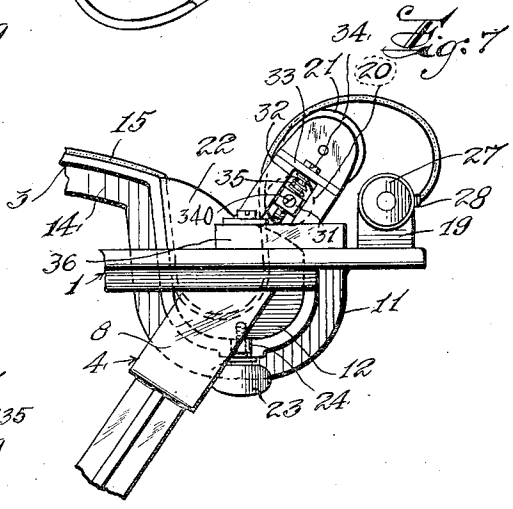


Fig. 6

Fig. 7



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UNITED STATES PATENT OFFICE

2,038,866

TOBACCO BUNCHING MACHINE

George C. Whittles, Irvington, N. J., assignor to Tobacco Machine Supply Company, Inc., Newark, N. J., a corporation of New Jersey

Application July 25, 1934, Serial No. 736,830

4 Claims. (Cl. 131—42)

My invention relates to improvements in tobacco bunching machines for shaping filler material into cigar form and it is concerned particularly with machines of the type in which the filler is rolled over a bed plate by a looped apron and roller cooperating therewith.

In bunching long and short filler it has been found desirable to roll the latter longer than the former because the strap content of which the short filler is formed, at least in part, is not so readily shaped and compacted as the long filler.

Having the foregoing in mind, the principal object of my invention, broadly stated, is to equip a machine of the specified type with novel means for effecting a more extended rolling operation with short than with long filler material, so that the short filler is subjected to a prolonged compacting and shaping as compared with the long filler, and to provide in addition to the above for forming bunches of either substantially uniform size throughout or tapered as desired.

Specifically my invention comprehends equipping such a machine with separate long and short filler loading pockets for positively backing the apron in loading operations and arranged so that the forming loop in the apron travels further from the short filler pocket than from the long filler pocket for the purpose above set forth.

Another object, specifically stated, is to equip the machine with novel efficient means for varying the relation of the axis of the apron roll to the table or bed to produce bunches either of substantially uniform size throughout or tapering toward either end.

Still another object is to provide for obtaining a wide range of fine variations in the size of the apron loop to correspondingly vary the size of the bunch rolled therein.

Still another object is to provide a novel mounting for the forming roll whereby either or both ends thereof may be adjusted to vary the position of the roll in accordance with different operating requirements, and yieldingly supporting the roll in any of its adjusted positions.

Other and auxiliary objects together with the structural details of my invention will be clearly understood when the following description and claims are read in conjunction with the drawings accompanying and forming a part of the specification.

In said drawings:

Figure 1 is a top plan view of the machine of my invention as it is used in bunching long filler material.

Figure 2 is a side view thereof.

Figure 3 is a view in longitudinal section taken on the line 3—3 of Figure 1.

Figure 4 is a transverse sectional view illustrating a portion of the forming roll and my improved means for mounting the same.

Figure 5 is a perspective view of a long filler pocket member.

Figure 6 is a fragmentary top plan view of the machine as it is used in bunching short filler, and

Figure 7 is a fragmentary side elevation of the showing of Figure 6.

Proceeding now to a detailed descripton of the type of machine with which my invention is particularly concerned and my improvements therein, and with reference to the drawings, 1 designates the usual rectangular base frame of the machine for securing the same to a suitable support represented in dotted lines in Figure 1 as at 2. Above said frame is a bed plate forming a table 3 located centrally of said frame and having its sides spaced from said frame. The table 3 is curved longitudinally in an arc coincident with the arc of movement of an operating frame 4 pivoted as at 5 to be rocked longitudinally of said table, on brackets 6, and including opposed upstanding arms 7 and 8 disposed on opposite sides of the table 3 and extending above the latter through slots 9 for a purpose presently clear. Opposite ends of the table 3 are connected to the base frame 1 by webs 10 and 11 forming trough shaped loading and discharge pockets 12 and 13 extending transversely of said table 3 at opposite ends of the latter, respectively, the loading pocket 12 being located considerably below the table 3. Flanges, as at 14, reinforce the side edges of said table 3 and the ends of said pockets 12 and 13. Preferably the base frame 1, table 3, pockets 12 and 13, and flanges 14, are cast or otherwise formed in a single piece from cast iron or other suitable material. Overlying the table 3 and the loading pocket 12 is an apron 15, of flexible material, having one end secured slightly below the discharge end of the table 3, as at 16, and its opposite end fixed by a clamping bar 17, to a roller 18 mounted in lugs 19 upstanding from the base frame 1. A sufficient slack is maintained in the apron 15 to form a loop in the loading trough 12 into which the filler is placed as will be understood. Mounted in the extending ends of the arms 7 and 8, by means presently described, is a roller 20. The arrangement of the frame 4, roll 20 and apron 15 is such that the roll may be swung by operation of said frame from its normal position

adjacent the loading end of the machine to the discharge end to roll the filler in the loop from the loading pocket 12 over the bed plate 3 and into the discharge pocket 13. A knob 21 is provided on the arm 7 for manually operating said frame.

The loading pocket 12 is designed for use in conjunction with aprons of different widths for bunching short filler, and hence may be termed the short filler pocket. For confining the short filler in the pocket 12, gaging the length of the bunch to be formed, and squaring the ends of the bunch, end closure plates 22 are provided for said pocket 12 which are adjustable lengthwise thereof by means of set screws 23 projecting from the bottom edge of said plates through longitudinal slots 24 in said pocket and clamping said plates to the bottom of the latter. The slots 24 are open at their outer ends so that said plates may be removed for a purpose presently seen. Each end plate is provided with a depending squared portion nicely fitted into its related slot 24 to hold the plate from turning during tightening of the screw 23.

For long filler bunching operations, an open ended long filler pocket member 25 is provided which is adapted to be removably secured as by screws 26, to the web 11 of the pocket 12 well above the latter whereby it is located nearer the discharge end of the bed plate 3, than the pocket 12. The apron 15 and roller 20 are operated to roll the filler from the long filler pocket 25 in the same manner as described in connection with the short filler pocket 12. Obviously however because of the different locations of said pockets 12 and 25 relative to the discharge end of the bed plate 3, the rolling operation in short filler bunching will be longer than in the case of long filler bunching.

For varying the size of the loop in the apron 15 a hand wheel 27 is provided on one end of the roller 18 whereby the latter may be rotated in the lugs 19 to adjust the slack in said apron. Clamping screws 28 threaded into the lugs 19 and engaging the ends of said roller provide for setting the roller when the slack in the apron 15 has been adjusted to provide the desired size of loop. A pin 29 passing through one end of the roll 18 together with the wheel 27 prevent endwise movement of said roll.

The roller 20 is freely rotatable on a shaft 30 having squared ends 31, shown in Figures 2 and 7. The shaft 31 and roll 20 are suspended in the upper ends of the arms 7 and 8, in longitudinal guide slots 32 therein, by cap plates 33 secured to the upper ends of said arms, and screws 34 slidably passing through said plates and threaded into the squared ends 31 of said shaft. Springs 35 interposed between the cap plates 33 and said squared ends of the shaft yieldingly urge the latter and the roller 20 toward the table. By adjusting the screws 34 the axis of rotation of the roller 20 may be readily varied relatively to the table to taper the bunch being rolled in either direction as will be clear, and the roller may be moved toward or away from the table to accommodate bunches of different sizes. Set screws 340 threaded into the squared ends 31 of said shaft serve to clamp the latter to the screws 34 to lock the roll 20 in adjusted position. The roller 20 may freely yield against the influence of the springs to provide a yielding pressure on the tobacco bunch, and yet is limited in its movement toward the table by the screws 34; and the screws 34 permit easy and fine adjustments of the roller relative to table.

The normal position of the roller 20 is established by a slotted stop block 36 mounted in one side bar of the base frame 1 and provided with an inwardly extending end 37 engaged by the frame arm 8. It is desirable to vary the normal position of said roller 20 when operating from the different pockets 12 and 25 for obvious reasons. For this purpose the stop block 36 has a rib fitted in a guiding groove 38 extending longitudinally of the side bar 8 of the base frame 1 and the block is adjustable. A single cap screw 39 passing through the slot 40 in said block and threaded into said frame side bar clamps said block in adjusted position.

It will be noted that the described location of the short filler pocket below the table 3 also provides for bodily lifting, and at the same time rolling, the short filler during travel of the apron loop from said pocket to the table 3. This action is particularly advantageous since during the same the short filler is compacted by its own weight. The described mounting for the roller 20 provides a simply constructed inexpensive means for tapering either end of the bunch by yielding pressure. By mounting the frame stop block 36 in the grooves 38 it is prevented from turning about the single clamping screw 39 under the impact of the frame 4 and being thereby thrown out of proper relation to the latter.

While in the drawings the location of the short filler pocket 12 together with the upper edge contour of the end plates 22 necessitate removal of the latter prior to attachment of the long filler pocket member 25, it is to be understood that right is herein reserved to modifications of these features permitting attachment of said member 25 without removing said plates, and also other modifications falling within the scope of the appended claims.

Having thus described my invention, what I claim is:

1. In a tobacco bunching machine, the combination with a table, and means for rolling a bunch thereon, and including, a pair of upstanding arms pivoted at opposite sides of said table, respectively, and provided at their upper ends with longitudinal slots extending inwardly from said ends, a roller intermediate said arms, a shaft rotatably supporting said roller and having squared ends slidable in said slots, cap plates secured to the upper ends of said arms, screws freely mounted in said plates and threaded into the squared ends of said shaft whereby said roller is suspended in said arms for free movement lengthwise thereof and for adjustment to vary the position of the axis of the roller, springs intermediate the squared ends of said shaft and said caps for urging said roller toward said table, and set screws threaded into said ends of the shaft for engagement with the first mentioned screws to lock the roller in adjusted position.

2. In a tobacco bunching machine, in combination, a table, means for rolling a bunch across the table and including a pair of arms movable along opposite sides of said table, respectively, a frame surrounding said arms and table and provided with a groove therein, a slotted stop block for one of said arms, slidably adjustable in said groove, and a single bolt for clamping said block in adjusted position.

3. As an article of manufacture, a single piece casting comprising a rectangular frame provided at its opposite sides with a pair of brackets, respectively, a raised table located centrally of the frame, the sides of the table being spaced from

the sides of the frame, the ends of said table being connected to the frame by trough shaped webs of relatively different depths one of which has opposed slots in the bottom wall thereof, a side member of said frame being provided with a longitudinally extending slot and one end member having a pair of lugs formed thereon adjacent opposite sides of said frame respectively.

4. In a machine of the class described, a rectangular base frame, a raised table located centrally thereof, a trough at one end of said table provided with opposed slots opening through the ends thereof, and end closure members for said trough fitting snugly therein, clamping screws pressing through said slots and threaded into the lower edges of said plates, respectively, and a bunching apron coacting with said table with a portion adapted to enter said trough between said end closure plates.

GEORGE C. WHITTLES.