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MACHINE FOR THE MANUFACTURE OF CIGARS HAVING CONICAL OR SPHERICAL FIRE-ENDS

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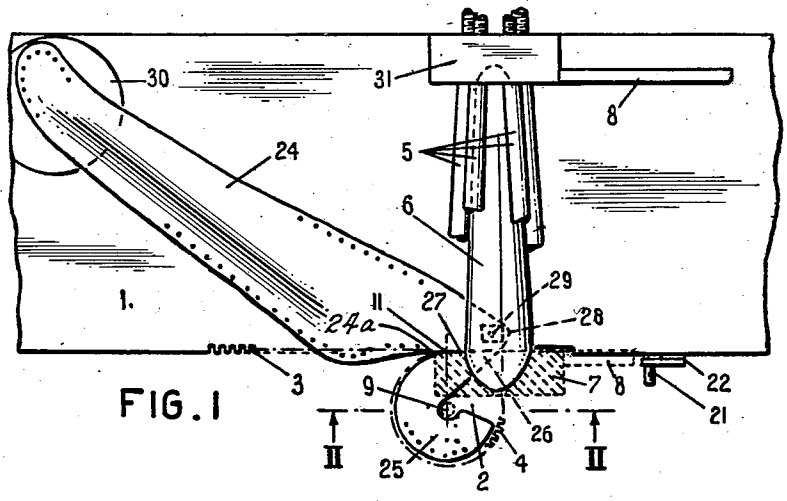



FIG. 1

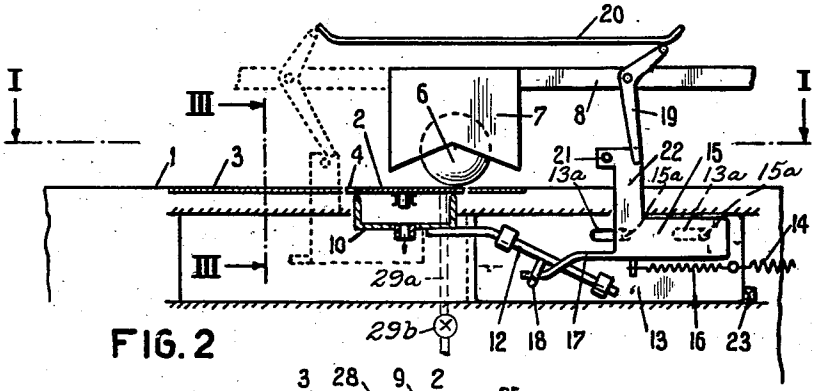



FIG. 2

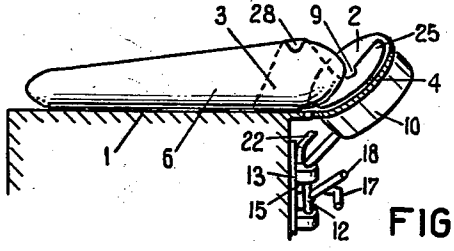



FIG. 3

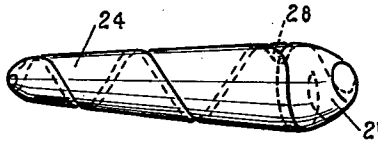



FIG. 4

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# MACHINE FOR THE MANUFACTURE OF CIGARS HAVING CONICAL OR SPHERICAL FIRE-ENDS

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The invention relates to a machine for the manufacture of a cigar, particularly a cigar of the Dutch "bolknak"-shape.

A "bolknak" cigar is a cigar having a relatively thick, conical or spherical, closed or nearly closed fire-end, a tapering body and a relatively thin, conical or spherical, closed or nearly closed mouth-end.

Bunches for cigars having a thick, closed or almost closed conical or spherical fire-end cannot be wrapped entirely mechanically in a wrapper leaf in a satisfactory manner in the usual machines, in which the wrapper leaf is helically wrapped from the fire-end towards the mouth-end of the bunch. The first end-portion of the wrapper leaf, which portion has to be wrapped around the fire-end portion of the bunch, must then, in order to reach the point of the fire-end, be moved with a blow by a needle or blown by a current of air into the wrapper rolling mechanism through a too great distance and at a too unfavourable angle with the leaf holder to give satisfactory results.

For the mechanical manufacture of cigars having a thick, conical fire-end it has been proposed to wrap the bunches for such cigars in the wrapper from the mouth-end towards the fire-end of the bunches. However, with this manner of wrapping the wrapper is wound around the bunch in the wrong direction, so that the wrapper must be provided with glue throughout its entire length. The application of glue on the wrapper leaf through a great length is rather difficult, so that the risk is great that the wrapper is not well glued and comes off locally during smoking. It also appeared that the wrapper leaf often gets loose or becomes crumped in the region, where the fire-end portion of the cigar merges into the body thereof. Moreover, this known way of manufacture does not permit to finish the mouth-end portion of the cigar satisfactorily. That is why the mouth-end is often cut off before the cigars are put on the market.

The invention has for its object to provide a cigar of the described shape or the like, which may be provided with a wrapper leaf by a machine in such a manner, that the disadvantages of the wrapper which is rolled in the wrong direction around the bunch are avoided. This new cigar is characterized in that the wrapper leaf is helically wound around the bunch both from the region where the fire-end portion merges into the body of the cigar towards the mouth-end and from said region towards the fire-end of the cigar. By far the greatest portion of the cigar is now covered by wrapper leaf in the normal direction, that is by a wrapper helically wound towards the mouth-end of the cigar, so that after the conical or spherical fire-end portion of the cigar has been smoked the wrapper has no tendency to unwind, since it is held in place by its overlapping turns. Only at the fire-end and at the mouth-end of the cigar the wrapper must be glued. With this new cigar the wrapper is brought onto the bunch in the thickest region thereof. This can be easily done with the aid of a scraper or a current of air, since the distance between the leaf holder and the bunch will be very small in said region. The portion of the wrapper meant for covering the fire-end portion of the bunch, which portion must be entirely provided with glue, will nestle tautly and smoothly onto the fire-end of the bunch contained in the rolling mechanism and the remaining



portion of the wrapper, which is helically wound around the bunch in the normal way, permits that also the considerably thinner conical or spherical mouth-end portion is entirely or almost entirely closed by the wrapper.

A machine for the manufacture of cigars according to the invention, which machine is provided in the same way as known wrapping machines with a rolling mechanism consisting of a set of rollers, a leaf holder and means for leading a wrapper leaf from said holder into said rolling mechanism, may advantageously comprise a leaf holder composed of two individual parts, of which the first part has a leaf supporting surface substantially parallel to the longitudinal axis of the rolling space within the rolling mechanism and the second part is formed as a turntable, the leaf supporting surface of which touches a line contained in the plane of the supporting surface of the said first part and is rolled along said line during part of the relative movement of the rolling mechanism and the leaf holder. The turntable is preferably mounted for swinging about an axis containing the tangent point between the supporting surfaces of the two parts of the leaf holder. Then the turntable may be swung into a position, in which its supporting surface touches a point of the fire-end portion of the wrapped cigar and encloses a portion of the rolling space within the rolling mechanism meant to receive the fire-end portion of the cigar bunch. Due to this swinging movement the wrapper nestles well onto said fire-end portion.

The machine for applying a wrapper to a bunch may be provided with a leaf holder, of which the first part is formed as a stationary table, over which the rolling mechanism is moved and along which the turntable is rolled.

It is stated that a leaf holder for feeding wrapper leaves to rolling mechanisms and provided with a turntable is already known. In this known leaf holder the turntable can only be rotated about its axis with respect to the remaining part of the leaf holder and it serves merely the purpose to smooth out the last portion of the wrapper meant for covering the mouth-end portion of the bunch. In contrast therewith the turntable according to the invention forms an individual part of the leaf holder which not only is rotated about its axis but is also adapted to carry out other movements. Moreover, said turntable serves to apply wrapper leaf to the fire-end portion of the bunch. The mentioned known device does not solve the problem of mechanically covering with wrapper leaf a bunch for a cigar having a thick closed or almost closed conical or spherical fire-end portion.

These and other characteristic features of the invention will appear from the next description of the accompanying drawing, in which a machine for mechanically applying a wrapper leaf to a bunch for a cigar having a thick, conical fire-end is shown very diagrammatically and only partly. In the drawing:

FIG. 1 is a plan view of the wrapping section of such a machine,

FIG. 2 is partly an elevational view, partly a sectional view taken on the line II—II in FIG. 1 of said wrapping section,

FIG. 3 is a cross-sectional view taken on the line III—III in FIG. 2, in which the turntable has a sloping position, and

FIG. 4 is a cigar according to the invention.

In the drawing 1 designates a part of a leaf holder, which part is formed as a stationary table and cooperates with a second part 2 of the leaf holder, constructed as a turntable. The side edge of the table 1 is formed as a toothed rack 3, with which teeth 4 of the turntable 2 meshes. A rolling mechanism constituted by a set of rotary rollers 5 is mounted for reciprocating movement over said table 1. The rolling mechanism is adapted in a well known but not shown manner to receive a bunch 6

on the right hand side of the table 1. The bunch is meant for a cigar having a slightly conical body provided with a thick short conical or spherical fire-end portion and a relatively thin conical or spherical mouth-end portion. When the bunch is in the rolling mechanism its fire-end portion protrudes from the edge of the table and is partly contained in a finishing block 7 which belongs to the rolling mechanism. Said mechanism 5, 7 is supported by to and fro movable rods 8 and the rollers 5 are driven during the active movement of the mechanism in a manner not shown, but known per se. During this active movement of the rolling mechanism the bunch 6 is, as it were, rolled over the table 1.

The shaft 9 of the turntable 2 is supported in a box-shaped carrier 10, which is connected to a shaft 12 adapted to be swung about its axis, which contains the tangent point 11 between the supporting surfaces of the stationary table 1 and the turntable 2. This axis encloses together with the supporting surface of the table 1 an acute angle and the shaft 12 is supported by a slide 13 mounted for reciprocating movement in the direction of the movement of the rolling mechanism. This slide is connected to a spring 14 and provided with a sliding member 15, which is kept in its rest position by means of a spring 16. This sliding member 15 is connected to the slide 13 by means of a slot-and-rivet-connection 13*a*, 15*a* and is adapted to move with respect to said slide through a limited distance defined by the length of the slots 13*a*.

The sliding member 15 has a finger 17, which engages a cross pin 18 attached to the shaft 12. When the sliding member 15 is moved with respect to the slide 13 against the force of the spring 16, which is weaker than the spring 14, the finger 17 turns, through the cross pin 18, the shaft 12 a little bit, so that the turntable 2, 10 is swung about the tangent point 11 and positioned at a predetermined angle with the supporting surface of the stationary table 1 (see FIG. 3).

One of the two rods 8 is provided with a rotary catch 19, of which one arm hangs downward by its weight and the other arm is adapted to engage a guide 20 (FIG. 2).

When the rolling mechanism 5, 7 containing a bunch 6 is moved to the left over the table 1 the catch 19 being held by the guide 20 will engage a pin 21 connected to an upward pointing finger 22 of the sliding member 15 a short time after the bunch has reached the position illustrated in FIG. 1. The sliding member 15 will thereby be moved in relation to the slide 13, so that the turntable 2, 10 is swung form its horizontal position into the above mentioned sloping position. Shortly thereafter the slide 13 and the turntable 2, 10 will be moved together with the rolling mechanism on the latter's further path. Due to this movement the turntable 2 will roll along the toothed rack 3 contained in the supporting surface of the table 1. When the catch 19 leaves the guide 20 the device consisting of the slide 13, the sliding member 15 and the turntable 2, 10 will be released, so that it will be returned by the spring 14 in its position of rest against the abutment 23 illustrated in FIG. 2.

Before the rolling mechanism containing the bunch has reached the position shown in FIG. 1 a preformed wrapper leaf is laid either by hand or mechanically onto the combined supporting surfaces of the stationary table 1 and the turntable 2. This wrapper leaf consists of an elongated portion 24, which comes to lie on the table 1 in the illustrated oblique position, and of a ring sector-shaped portion 25, which comes to lie on the turntable 2. This ring sector-shaped portion is lengthened with a tapered portion 26 merging into the edge of the elongated portion 24. An incision 27 may be made between the two portions 24 and 25 of the wrapper leaf. In some cases this incision may be dispensed with. The point portion 28 of the wrapper, which must be fed into the rolling mechanism 5 first is blown into said mechanism by means of a current of air ejected from an aperture 29 when the rolling mechanism containing the bunch 6 is moved over said point portion. Air is supplied by a tube 29*a* provided with a valve 29*b* which is opened when the rolling mechanism is straight above the point portion 28 of the wrapper and is closed when said mechanism has passed the region of the aperture 29. Also other conventional means than a current of air may be used for leading the point portion 28 of the wrapper into the rolling space within said mechanism. Such means forms no part of the present invention.

During the further active movement of the rolling mechanism the point portion 28 of the wrapper is wound around the bunch in the zone or region where the fire-end portion merges into the body of the bunch, that is in the thickest place of the bunch. A short time after the rolling mechanism and the bunch have passed the position shown in FIG. 1 the turntable 2, 10 is brought into the sloping position illustrated in FIG. 3. When the rolling mechanism has approximately reached the position in which the axis of its rolling space is directly above the tangent point 11, the sloping turntable 2, 10 is moved together with the rolling mechanism to the left.

The result of this movement is that the ring sector-shaped wrapper portion 25 nestles as a cap onto the fire-end portion of the bunch. Said cap is smoothed out by the finishing block 7. At the same time the wrapper portion 24 is helically wound around the body and the mouth-end portion of the bunch. In order to cover the conical or spherical mouth-end portion of the bunch with wrapper leaf smoothly the table 1 is in its supporting surface provided with a second turntable 30 adapted to give the end portion of the wrapper leaf a certain curvature and thereby some tension. Also at the end for receiving the mouth-end portion of the bunch the rolling mechanism may be provided with a finishing block 31. This block may be dispensed with, when the rollers of said mechanism are so constructed that they themselves are able to smooth out the wrapper leaf covering the mouth-end portion of the bunch.

The cigar which is covered with wrapper leaf entirely mechanically by means of the above mentioned apparatus is closed or substantially closed at both ends.

Preferably the turntable 2, 10 and the rolling mechanism are coupled to one another just before the axis of the rolling space within said mechanism has reached the position directly above the tangent point 11 between the supporting surfaces of the table 1 and the turntable 2. In that case the edge 24*a* of the elongated portion 24 of the wrapper will nestle onto the bunch a little bit later than the peripheral edge of the ring sector-shaped portion 25 thereof and thus will overlap said portion 25. Should both edges bordering the incision 27 be wound around the bunch exactly simultaneously with their opposite points, the risk would be great that these edges of the wrapper hamper each other and that creases are produced which are difficult to smooth out.

It is also possible to rearrange parts of the machine in a manner that the side edge 24*a* of the wrapper portion 24 will be wound around the thickest region of the bunch a little bit earlier than the peripheral edge of the ring sector-shaped portion 25.

It will be obvious that the wrapper portion 25, 26 and the last part of the wrapper portion 24 must be provided with glue before the bunch is rolled over said wrapper portions. It is further apparent that the table 1 and the turntables 2 and 30 are perforated and that the wrapper is held on the composite leaf holder by suction. The wrapper leaf may be formed from two individual portions 24 and 25 glued together. Such a wrapper leaf may be cut out of a tobacco leaf much more economically.

What I claim is:

1. A machine for wrapping a prefabricated bunch in a wrapper-leaf to form a cigar having a thick substantially closed conical or spherical fire-end, comprising a rolling mechanism including a set of rollers for winding the

wrapper-leaf around the bunch contained in the rolling space surrounded by said rollers, a leaf holder, said mechanism and said leaf holder being movable relative to each other, said leaf holder having two parts, the first of said parts having a leaf supporting surface substantially parallel to the longitudinal axis of the rolling space of the rolling mechanism and the second of said parts being a turntable having a leaf supporting surface lying in the plane of the leaf supporting surface of the first part when the machine is inoperative, the periphery of the leaf supporting surface of the turntable touching a line contained in the plane of the supporting surface of the said first part, said turntable being rollable along said line during part of the relative movement of the rolling mechanism and the leaf holder, and means for tilting said turntable out of the plane of the supporting surface of said first part while the turntable is being rolled along said line.

2. A machine as claimed in claim 1, in which said means tilts the turntable about an axis containing the tangent point between the leaf supporting surfaces of the said two parts of the leaf holder.

3. A machine as claimed in claim 2, in which said axis about which the turntable is tilted is at an acute angle with the plane of the supporting surface of the first part of the leaf holder.

4. A machine as claimed in claim 1, in which a toothed rack is provided in the plane of the supporting surface of the first part of the leaf holder and the supporting surface of the turntable is formed as a toothed wheel meshing with said rack.

5. A machine as claimed in claim 4, in which said first part of the leaf holder is a stationary table over which the rolling mechanism is moved and along which said turntable is rolled.

6. A machine as claimed in claim 1, in which said means includes a carrier, a reciprocating slide, a sliding



member mounted for limited reciprocation on said slide, a coupling member, and movable means supporting and moving said rolling mechanism, said turntable being mounted for rotation on said carrier, said carrier being mounted for tilting movement on said slide about an axis containing the tangent point between the supporting surfaces of the two parts of the leaf holder and disposed at an acute angle to the plane of the supporting surface of the first part of the leaf holder, said coupling member being mounted on the supporting means of the rolling mechanism and during the relative movement of the rolling mechanism and the leaf holder first coupling said sliding member with said rolling mechanism to move said sliding member with respect to said slide and tilt the carrier from a position in which the supporting surfaces of both parts of the leaf holder are contained in the same plane into an inclined position in which the supporting surface of the turntable is tilted to enclose the portion of the rolling space within the rolling mechanism which receives the fire-end portion of the cigar-bunch, and thereafter coupling said sliding member to said slide and the rolling mechanism to move the inclined turntable together with said rolling mechanism.


**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 258,781 | Luby | May 30, 1882 |
| 663,073 | Coughtry | Dec. 4, 1900 |
| 1,277,574 | Hansen | Sept. 3, 1918 |
| 2,369,777 | Durning | Feb. 20, 1945 |
| 2,734,511 | Long | Feb. 14, 1956 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 1,191,577 | France | Apr. 13, 1959 |
| 1,195,944 | France | May 19, 1959 |
| 496,379 | Great Britain | Nov. 29, 1938 |