MANUAL CIGARETTE ROLLING MACHINES

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Field of Search 131/47, 58, 51, 52

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ABSTRACT

The invention provides a manual cigarette making machine of the twin roller and endless band type provided with an adjustable band guide member whereby the effective length of a tobacco and cigarette wrapper receiving band loop between the rollers may be altered and cigarettes of alternative diameters may be made. The guide member has a rib or node extending from a circular central portion, the member being mounted in end plates and having a lever at one end thereof for rotating the same. The rib or node has an edge which engages the internal surface of the band and upon rotation thereof, controls the size of the loop. The device includes a pair of band engaging rollers, one of which is mounted in C-shaped slots in the end walls so that it can be moved toward and away from the other to permit the formation of a tobacco receiving trough within the loop.

4 Claims, 9 Drawing Figures
MANUAL CIGARETTE ROLLING MACHINES

FIELD OF THE INVENTION

This invention relates to manual cigarette rolling machines and more particularly to manual cigarette rolling machines of the kind in which the cigarette is rolled by the action of an endless band.

SUMMARY OF THE INVENTION

According to this invention there is provided a manual cigarette rolling machine comprising first and second guides mounted in a body, an endless band encircling and movable round the guides, one of the guides being movable between a first portion adjacent the other guide, in which position the band can form a substantially closed loop between the guides, and a second position spaced from said other guide, in which position the loop is open to receive tobacco, and a third guide which engages the band and which is locatable in at least two positions, the construction and arrangement being such that movement of the third guide from one of said positions to another alters the effective size of said substantially closed loop.

In one preferred arrangement according to the invention, the third guide provides a cam-like surface for sliding engagement with the band and is pivotable into the two or more positions thereof.

The third guide may conveniently be disposed within the endless band.

Some embodiments of the invention will now be described by way of example with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a rear perspective view of a cigarette rolling machine according to the invention in elevation.

FIG. 2 is a front perspective view of the machine of FIG. 1.

FIGS. 3A and 3B are schematic views showing the two positions respectively of the third guide.

FIG. 4 shows another embodiment of the invention in elevation.

FIG. 5 is a sectional view on the line 5–5 of FIG. 4.

FIG. 6 is a plan of the machine shown in FIG. 4.

FIG. 7 is a sectional view on the line 7–7 of FIG. 4, and

FIG. 8 is a fragmentary sectional view on the line 8–8 of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to FIGS. 1 and 2 of the drawings, from which the endless band has been omitted for reasons of clarity, two parallel rollers 10, 11 are rotatably mounted in a body 12 which is in this instance a stiff but resilient one-piece plastics moulding. The frame comprises two side plates 13, 14 and a channel-section portion 15 interconnecting the side plates. Beneath the channel-section portion 15 each side plate has two lugs 17 which are spaced from each other and from the bottom face of the channel section portion and which project towards the other side plate for supporting a standard pack of cigarette papers. The axle of roller 11 is disposed in bearing holes in the side plates, but the axle of roller 10 is slidably and rotatably mounted in J-section slots 16 in the side plates. As shown in FIG. 2, the slots 16 are disposed so that roller 10 is movable from a position adjacent roller 11 to a position further away.

The side plates also provide bearing holes for a cam-like guide member 18 extending between the plates. The guide member is a one-piece plastics moulding and includes shaft parts engaged in the bearing holes and a central portion 20 which has a radially projecting rib 21, the radially outer edge of which is smoothly rounded. The member has a boss 22 having an actuating arm 23 at its end outside the side plate 14. A U-shaped slot 24 is formed completely through side plate 14 so as to define a resilient finger therewithin. The free end of the resilient finger has an integrally moulded hemispherical projection 25 formed thereon, and the boss 22 has an axially projecting detent 26 which, on rotation of arm 23 in either direction, engages and slightly deflects the resiliently supported projection so as to snap over and become located between the projection and one or other of two projecting stops 28, 29 on the outer face of side plate 14.

The end part 30 of the guide member remote from the operating arm is bifurcated and has an enlargement which is chamfered to enable the end part to be passed through the bearing hole in the side plate 13 to secure the guide member, but to prevent reverse movement of the end part from the bearing hole.

An endless flexible band 31 (shown in FIGS. 3A and 3B) made from a suitable fabric encloses the two rollers and the central portion 20, 21 of the guide member 18. In operating the machine to roll a cigarette, the roller 10 is moved to the end of slots 16 remote from the roller 11 and the band is depressed between the rollers 10, 11 to form a trough in which a quantity of tobacco is placed. The roller 10 is then moved to the end of its slots adjacent the other roller whilst the tobacco is slightly held down so that the band forms a substantially closed loop between the two rollers. The rollers are then rotated together by manipulation of the band with the fingers to shape the tobacco into a roll. Thereafter, a cigarette paper is fed between the rollers, the gum on the paper is moistened and the rollers are again rotated through manual movement of the band to complete the formation of the cigarette. The roller 10 can then be manually moved to the end of the slots 16 remote from the roller 11 to allow the cigarette to be extracted. It will be understood that the rotational position of the rib 21 on the guide member 19 controls the length of the manually moved band 31 and therefore controls the size of the loop 32 in which the cigarette is formed. When the guide member is in one of its positions, illustrated in FIG. 3A, the rib constrains the band to extend over a shorter guided path than when the rib is in its other position, illustrated in FIG. 3B. Thus the loop 32, which comprises the excess length of band 31, is greater, giving a larger diameter of cigarette in the position shown in FIG. 3A than in the position shown in FIG. 3B. Therefore, a cigarette of either of two diameters can be rolled by selection of the appropriate rotational setting of the operating arm 22 of the guide member and placing an appropriate amount of tobacco in the trough. Intermediate positions for the operating arm and guide may be provided for if desired.

Caps may be added to the side plates 13, 14 to conceal the ends of the rollers and the guide.

FIGS. 4 to 6 show another embodiment of the invention the main components of which carry the same ref-
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3,911,933 3 erence numerals as in the arrangement of FIGS. 1 to 3, but the endless band 31 is indicated in broken lines. In this instance however, the side plates 43, 44 are separate from each other, and the complete assembly of the side plates, rollers 10, 11, guide 18 and endless band 31 is slid into a generally U-shaped body member 35 which is transversely cut from an extruded aluminum alloy channel. As shown in FIG. 4, member 35 runs down from the top of side plate 43, across the bottom to side plate 44, and up to the top of plate 44. The upright sides of the U-shaped channel have interior grooves, and the side plates 43, 44 are press-fit into the grooves with flanges 36 on the side plates abutting one end of the body member 35 as shown in FIG. 6. The guide 18 is pivotally mounted by its ends in bearing holes in the side plates as before but, as shown in FIG. 5, has a projecting lever arm 34 at one end. Lever arm 34 enables the guide to be rotated into one or other of two positions as in the arrangement of FIGS. 1 to 3. As best seen in FIGS. 7 and 8, a radial projection 38 is disposed at the opposite end of the guide from the lever arm 34 and extends substantially in the opposite radial direction from the lever arm. The projection 38 has a flat inner face 45 and a convexly curved outer axial face 39 which, as the projection moves through an arc as the guide is rotated, snaps to one side or the other of a part-spherical protrusion 40 carried on the end of a resilient finger 41. Finger 41 is formed integrally with the side plate 44 by cutting a generally U-shaped slot 42 completely therethrough. The guide is thus retained resiliently in either of two angular positions. It will however be seen that by appropriately shaping the projection 38 to provide a series of peaks, each curved like the surface 39, a series of located angular positions of the guide 18 can be provided in addition to the two end positions described above.

As in the other arrangements the central portion 20, 21 of the guide 18 is disposed within the endless band and can be rotated by means of the lever arm to adjust the length of the guide path of the band so as to adjust the length of the loop 32 between the rollers 10, 11.

We claim:

1. A manual cigarette rolling machine of the kind including an endless band manually rollable around and in contact with a fixed axis roller and a shiftable axis roller mounted in end plates of a casing, said band forming a tobacco and cigarette wrapper receiving loop between said rollers, the improvement comprising a guide member pivotally mounted in the end plates about a fixed axis and within the endless band, the said guide member having a radially extending camming surface in sliding contact with the interior surface of the band and further having a lever arm formed at one end of said guide member to enable rotation of said guide member between pre-set angular positions, said camming surface cooperating with said rollers to define a guide path for said endless band, said guide path having a length adjustable by rotation of said camming surface of said guide means whereby the diameter of said loop may be varied.

2. A machine according to claim 1 wherein the said guide member comprises a cylindrical central body portion formed with a projecting rib.

3. A machine according to claim 1, wherein at least one end of the casing is made from a resilient material and has a substantially U-shaped slot therethrough to define a resilient finger; and wherein said guide member has a radial projection on an end thereof for engagement with and deflection of said resilient finger on movement of said guide member between its pre-set angular positions.

4. A machine according to claim 1, further including a generally U-shaped metal body having upright side walls defining grooves, and wherein the end plates are press-fit into said grooves.

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