June 19, 1962 K. KÖRBER 3,039,474

CIGARETTE ROD MAKING MACHINE

Filed Nov. 23, 1959

Fig.1

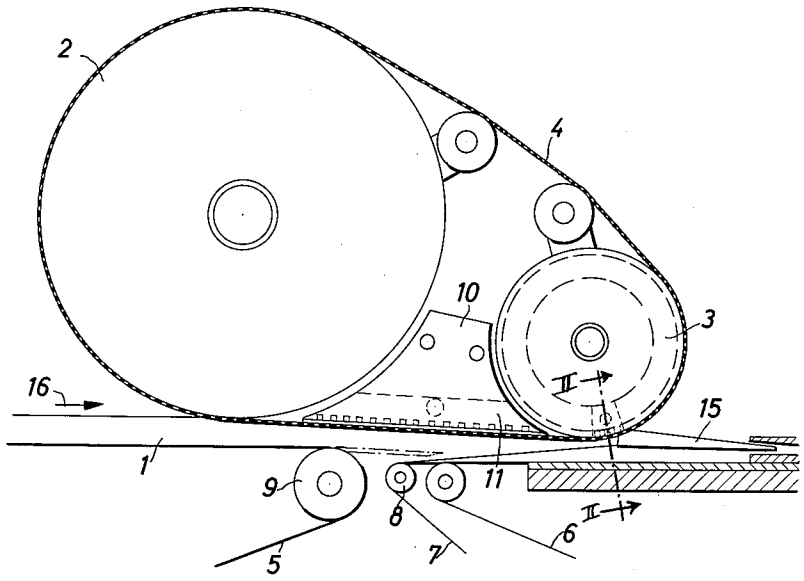
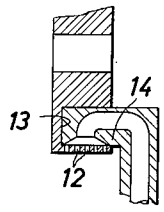


Fig.2



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CIGARETTE ROD MAKING MACHINE

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The present invention relates to cigarette rod making machines and particularly is directed to a tobacco guide for feeding a continuous tobacco rod into a cigarette rod forming device in which a strip of cigarette paper is wrapped around the tobacco rod to form a continuous cigarette rod.

Previously it was believed that any form of pneumatic or suction device would be unsuitable in the region where a tobacco rod is formed, but it has now been found that the operation of the inlet guide is substantially improved when the endless belt disposed at the leading or forward portion of the guide is constructed as a suction belt. For this purpose the present invention has as one of its objects to provide a suction chamber in the feed region of the endless rod conveyor belt which latter may be constructed as a perforated belt. This suction chamber may for example be associated with the birdge utilized with such inlet guide devices between the two guide wheels over which the endless suction belt is threaded.

Furthermore, for improving the entrance of the tobacco rod into the rear portion of the guide the outer surface of the support wheel located at this point is made air permeable and is subjected to the action of compressed air to assist the entrance of the tobacco rod into the rear guide portion. For this purpose the compressed air is so adjusted that the entrance of the tobacco rod into the rear guide portion is not adversely influenced by the formation of eddy currents. The compressed air merely serves to hinder the tobacco fibers from being deflected upwardly;

One constructional example of the invention is shown diagrammatically in the accompanying drawing, in which—

FIG. 1 is a side elevation view of the device of the invention, and

FIG. 2 is a sectional view of a detail on the line II—II of FIG. 1.

The essential parts of the tobacco guiding device include the horizontally spaced support wheels **2** and **3** arranged above the tobacco stream conveying duct **1** and over which a perforated endless belt **4** is threaded. This perforated endless belt **4**, or rather the lower horizontal stretch of the same, forms the leading or front portion of the guiding device of the invention. In the tobacco duct **1** the tobacco conveying belt **5** moves below the support wheel **2** while the tobacco receiving belt **6** runs beneath the support wheel **3**. A cigarette paper strip **7** is fed to the so called "forming" belt **6** over a paper guide roller **8**. Between the guide roller **9** for the tobacco forming belt **6** and the paper feed roller **8** is usually arranged a bridge, but this bridge is not necessary in the present invention and is only indicated in dash and dotted lines for the sake of a better undersanding of the present invention.

Between the two support wheels **2** and **3** is arranged a web member **10** which forms the support for the lower stretch of the perforated endless belt **4** in this region. The part of the web **10** facing the endless belt **4** is constructed as a suction chamber **11**. The peripheral wall of the support wheel **3** is provided with apertures **12** which communicate with a common annular groove **13** in the body of the wheel **3**. This groove **13** has mounted therein a sealing member **14** connected to a compressed air connection. The sealing member **14** extends over the region over which the compressed air is to be made operative and is fixedly mounted on the machine frame. Extending from the support wheel **3** toward the right is the rear portion **15** of the tubular tobacco rod guide.

The operation of the device is as follows:

The tobacco conveying belt **5** moves the tobacco stream or rod in the direction of the arrow **16** and by the suction exerted on the tobacco by the suction chamber **11** the tobacco is caused to adhere to the underside of the lower stretch of the perforated endless belt **4**. The belt **4** leads the tobacco stream over the transfer zone between the guide roller **9** and the paper feed roller **8**. Therefore, the bridge member previously necessary at this point and shown in dash and dotted lines can be omitted.

If desired, however, this bridge member can be left in place, because the suction action on the tobacco prevents any piling up of tobacco in the region of the bridge.

The tobacco stream which comes into contact with the paper strip **7** is now moved together with the paper strip **7** and the endless belt **4** to the forming belt **6** and is fed into the rear portion of the tubular guide **15**. In this case, the discharge of the tobacco stream from the endless belt **4** is assisted by a comparatively small compressed air action in the region of the support wheel **3**.

What I claim is:

1. In combination with a cigarette rod making machine having first and second conveyor means arranged in end to end relation for feeding tobacco from a hopper along a horizontal pathway to a forming head with the cigarette paper strip fed upwardly through a gap between the first and second conveying means toward said forming head, of a pair of pulleys mounted above said horizontal pathway with one thereof arranged adjacent said forming head, an endless perforated belt arranged to travel over said pulleys with its lower run bridging said gap and spaced above the first and second conveyor means, a suction head mounted above the lower run of said endless belt for creating a suction in the area of said gap so that the tobacco particles will travel over the gap through which the paper strip is fed, an annular channel formed in the radial wall of the pulley mounted adjacent said forming head, said pulley being provided with a series of perforations extending into said channel, and an air jet mountable in said annular recess and fixed with respect to said horizontal pathway for directing a jet of air downwardly through the perforations in said drum and through the perforations in said belt in the area of said forming head to dislodge tobacco particles from the surface of said perforated belt.

2. In combination with a cigarette rod making machine having first and second conveyor means arranged in end to end relation for feeding tobacco from a hopper along a horizontal pathway to a forming head with the cigarette paper strip fed upwardly through a gap between the first and second conveying means toward said forming head, of a pair of pulleys mounted above said horizontal pathway with one thereof arranged adjacent said forming head, an endless perforated belt arranged to travel over said pulleys with its lower run bridging said gap and spaced above the first and second conveyor means, a suction head mounted above the lower run of said endless belt for creating a suction in the area of said gap so that the tobacco particles will travel over the gap through which the paper

strip is fed, and means effective in the area of said forming head to dislodge tobacco particles from the surface of said perforated belt.

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