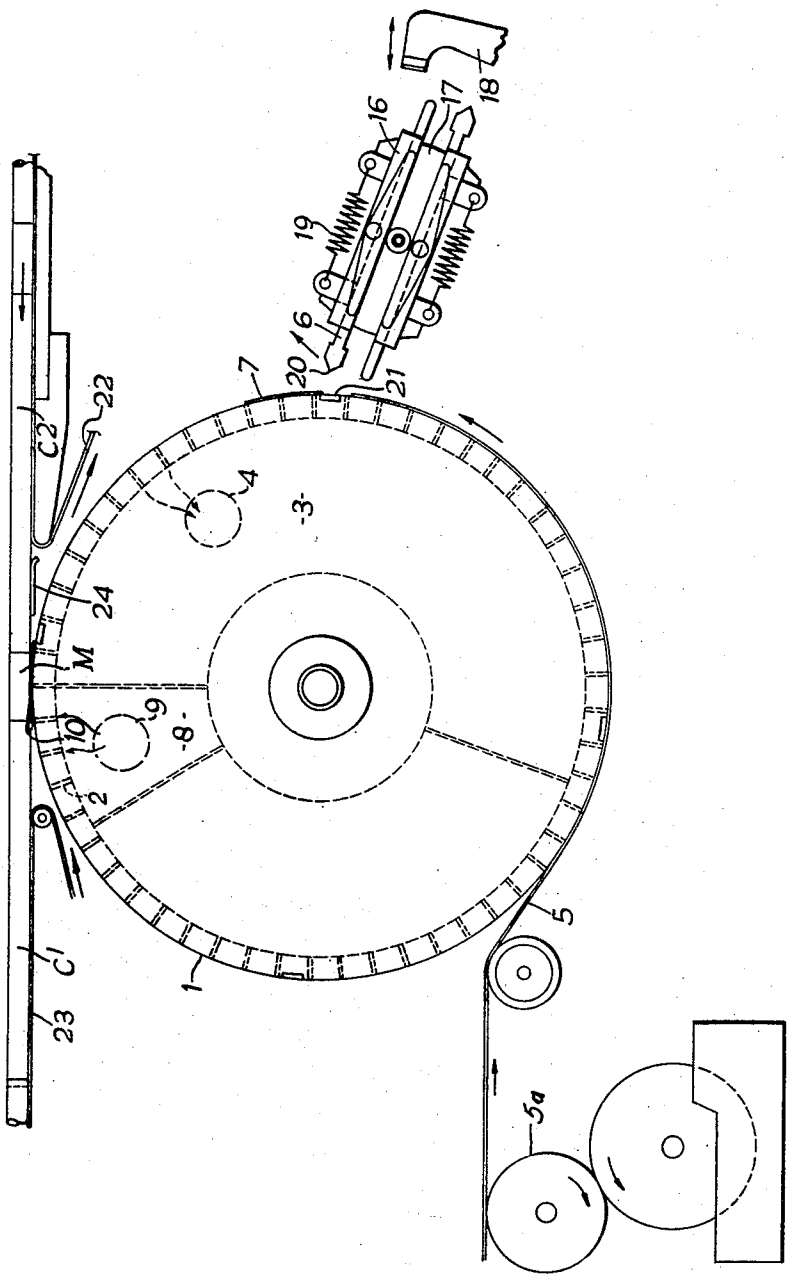
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APPLICATION OF PORTIONS OF MATERIAL TO A TRAVELLING SURFACE OR SURFACES

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APPLICATION OF PORTIONS OF MATERIAL TO A TRAVELLING SURFACE OR SURFACES

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1 Claim. (Cl. 131—61)

This invention concerns improvements in or relating to the application of portions of material to a travelling surface or surfaces. In particular the invention concerns the application of uniting bands to cigarette elements or portions and mouthpiece elements or portions which are arranged in axial alignment and moving endwise, the uniting bands being intended to unite a mouthpiece portion to one or more cigarette portions abutting its end or ends.

According to the present invention there is provided a method of applying a portion of material (e. g. a uniting band) to a travelling surface or surfaces (e. g. constituted by one or more endwise moving cigarette portions axially aligned with and abutting at least one mouthpiece portion) comprising the steps of causing part of an adhesive-coated portion of material to adhere to a surface or surfaces, and thereafter causing a gaseous fluid such as air to be blown against said portion in a direction such as to tend to urge the portion against the said surface or surfaces.

Further according to the present invention there is provided means for applying a portion of material (e. g. a uniting band) to a travelling surface or surfaces (e. g. constituted by one or more endwise moving cigarette portions axially aligned with and abutting at least one mouthpiece portion) comprising a conveyor (e. g. a suction conveyor) to convey an adhesive-coated portion of material towards and press part of it against said surface or surfaces, and means (e. g. an air jet) arranged to urge towards said surface or surfaces a part of said portion which has not been pressed against said surface or surfaces as aforesaid, the said last-named means being arranged to operate on said part while the said portion is still partially on said conveyor.

Further according to the invention there is provided an apparatus for making mouthpiece cigarettes by joining endwise-abutting cigarette portions and mouthpiece portions by means of uniting bands, means for applying such uniting bands, comprising a conveyor arranged to feed portions of adhesive-coated material (which constitute the uniting bands) towards, and to apply them to, a mouthpiece portion and one or more cigarette portions abutting the mouthpiece portion, while said portions are moving endwise in axial alignment, said conveyor having ports in its conveying surface, a suction chamber communicating with said ports to hold said portions on the conveyor by suction, and a blowing chamber adapted to blow air through said ports against a portion which has been applied as aforesaid.

The drawing illustrates a side view of a preferred embodiment of the invention.

Apparatus according to the invention will now be described with reference to the accompanying drawing, which shows a suction conveyor constituted by a drum 1 which is provided with ports 2 in its periphery which constitutes its conveying surface. A fixed suction chamber 3 communicates with the ports 2, the chamber being connected by means of a conduit 4 with a suitable source

of suction. A web 5 of suitable material such as cork tipping material is fed to the surface of the drum 1 and is held thereon by suction. The web is however fed to the drum at a controlled speed less than the peripheral speed of the drum. Consequently the drum slips beneath the web. A knife 6 is arranged to cut the web at intervals such as to separate from it portions of material which are to act as uniting bands. Such a portion is shown at 7. As soon as a portion is thus severed from the web (it moves with the speed of the conveying surface of the drum, and therefore becomes spaced apart from the slower-moving web. The web is coated with adhesive by an adhesive-applying roller 5a before reaching the drum.

The knife 6 is one of a pair of knives arranged to slide endwise in guides 16 in a rotatable knife carrier 17 which is arranged to rotate in the direction shown by the arrow. A hammer 18 is arranged to strike the rear end of each knife in turn as the carrier rotates. Thus each knife in turn is given a sharp forward thrust against the influence of a spring 19, which retracts the knife as soon as the rear end of the latter has moved past the hammer. These operations are timed so that the edge 20 of a knife is projected against the web to cut it against a hardened inset 21 on the conveying surface of the drum 1.

The separated, adhesive-coated portions such as 7 are fed towards and applied to a continuous succession of double-length cigarette portions and mouthpiece portions, indicated by the references C1, C2 and M, in such a way as to extend along the whole of the mouthpiece portion M and partly along the ends of the cigarette portions C1 and C2 which abut the mouthpiece portion. Pressure is applied in any suitable way to the mouthpiece portion and cigarette portions from above so as to cause the gummed portion of material (hereafter referred to as a "uniting band") to be pressed against them firmly. It will of course be understood that only the central part of the uniting band is pressed against the mouthpiece and cigarette portions by the drum and the band at this stage is flat.

The cigarette and mouthpiece portions are conveyed towards the drum 1 by a conveyor tape 22, and pass from the drum on to a further conveyor tape 23. A short bridge 24 guides them from the tape 22 on to the drum surface.

The uniting band after it has been thus applied is wrapped around the mouthpiece and cigarette portions by folding mechanism similar to that used on continuous rod cigarette-making machines for wrapping a cigarette-paper web around a tobacco filler.

Due in part to the fact that the uniting band is precoated with adhesive, however, there is sometimes a tendency for the sides of the band, after the latter has been applied by the drum 1, to curl downwardly and outwardly from the mouthpiece and cigarette portions, or for its sides to tend to hang downwardly. Such a tendency is likely to cause difficulties because the edges of the uniting bands may foul the folding mechanism, or may strike the conveyor tape which carries the cigarette and mouthpiece portions through the folding mechanism.

In order to combat this difficulty, a fixed blowing chamber 8 is provided in the drum 1. This chamber receives air under pressure through a conduit 9, and discharges it through the ports 2. As can be seen from the drawing, the blowing chamber 8 is so located that air will be discharged against a uniting band 10 which has just been applied to the mouthpiece portions M and cigarette portions C1 and C2, and this air is blown in such a direction as to tend to urge the uniting band against the portions M and C1.

This discharge of air may be strong enough to cause the uniting band 10 to be bowed or curled somewhat

upwardly as shown in the drawing, thus in effect commencing the operation of wrapping it about the portions M and C1. In any case it is found that by the arrangement whereby air is blown against the band as soon as it has been applied, the tendency for the band to curl or bow downwardly can be satisfactorily overcome.

In the above description the uniting bands are said to be applied to a continuous succession of double-length cigarette and mouthpiece portions, as illustrated in the drawings. It will, however, be understood that the apparatus can equally well be used in applying uniting bands to separate assemblages each consisting, for example, of two single-length cigarette portions with a double-length mouthpiece portion between them and in endwise abutment and axial alignment with them.

What I claim as my invention and desire to secure by Letters Patent is:

In apparatus for making mouthpiece cigarettes by joining endwise-abutting endwise-moving cigarette elements and mouthpiece elements by means of uniting bands, means for applying such uniting bands, comprising a conveyor arranged to bring adhesive-coated uniting bands into contact with successive groups each consisting of a mouthpiece element and at least one cigarette portion abutting the mouthpiece element, while said groups are moving endwise in axial alignment in such manner that parts of such a band extend laterally away from such a group, said conveyor having ports in its conveying surface, a suction chamber communicating with said ports to hold said bands on the conveyor by suction and a blowing chamber adapted to blow air through said ports against the extending parts of a band which has been applied as aforesaid, thus urging said extending parts upwardly toward said cigarette and mouthpiece elements, whereby portions of said extending parts will be caused to adhere to said cigarette and mouthpiece elements to provide an upward curl in the remaining unadhered portions of said extending parts.

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