Feb. 19, 1957 C. STELZER 2,781,886

CONVEYOR MECHANISM FOR CIGARETTE MAKING MACHINES

Filed March 23, 1955 2 Sheets-Sheet 1

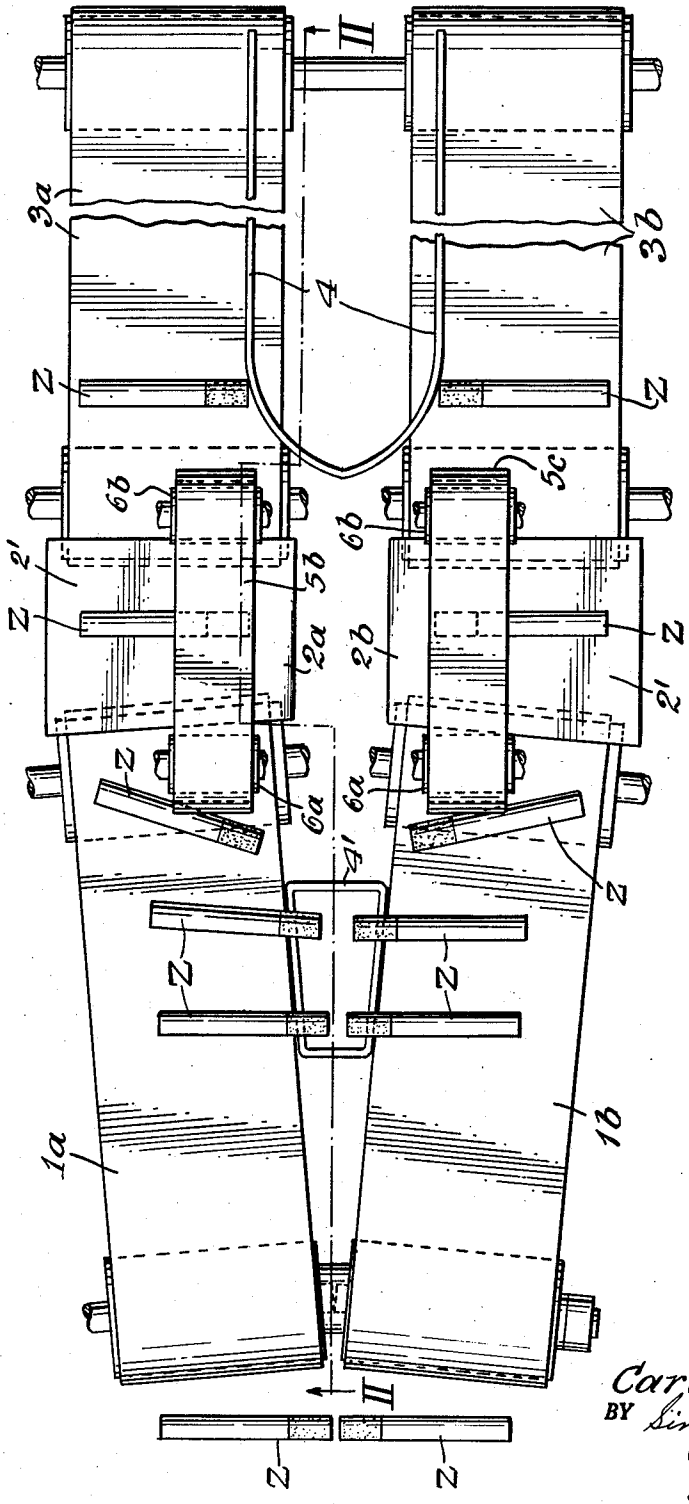


Fig. 1

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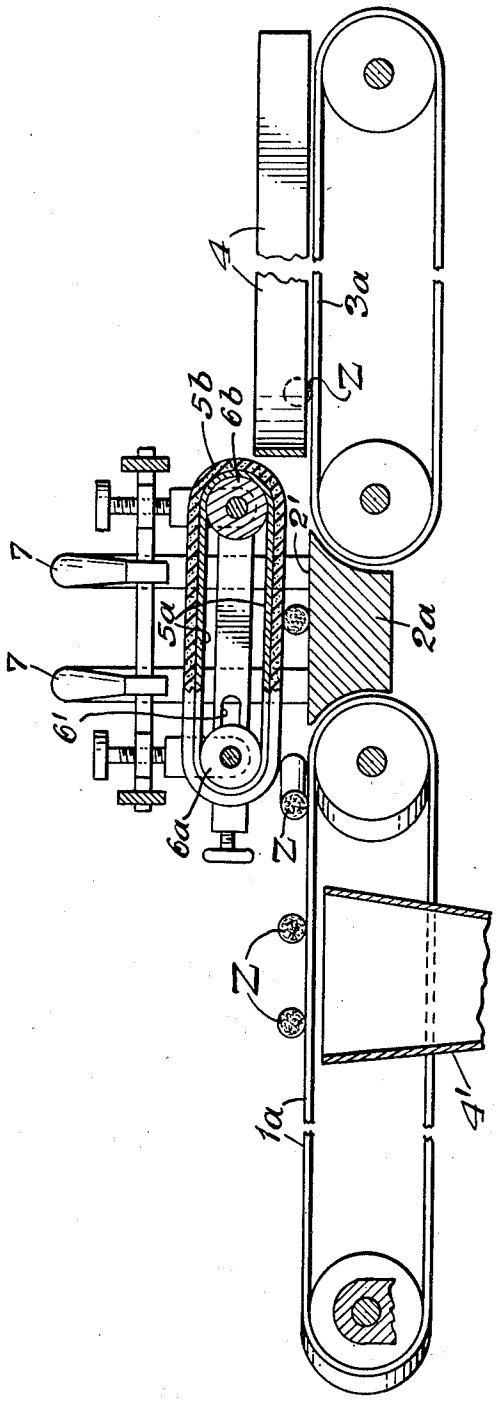


Fig. 2

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CONVEYOR MECHANISM FOR CIGARETTE MAKING MACHINES

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Claims priority, application Germany April 7, 1954

6 Claims. (Cl. 198—33)

The invention relates to improvements in cigarette-making machines and particularly is directed to a device for conveying the completed cigarettes from the outlet end of a cigarette-making machine to a place where the cigarettes are collected for storing, packaging and the like.

The invention is adapted to be employed in connection with cigarette-making machines producing filter tip cigarettes, in which sets consisting each of two axially spaced cigarettes are placed in grooves on the peripheral surface of a rotatable drum and having a mouthpiece of double conventional length disposed therebetween. This mouthpiece is combined with the two cigarettes into an integral unit by means of a connecting band, whereupon the thus formed cigarette mouthpiece units are severed in the center of the mouthpiece, the mouthpiece cigarettes thus produced are deposited upon a conveyor belt which transports the same to the place of their final destination.

It is an object of the invention to improve the above production process by spacing apart the two cigarettes in each pair of completed mouthpiece cigarettes which are arranged in close proximity to each other when cut after being discharged by the cutter drum. The spacing apart of the cigarettes is accomplished by two diverging endless transfer belts which deliver the cigarettes across a stationary and highly polished bridge-plate to two continuous conveyor belts which in turn convey the cigarettes, now spaced apart from each other, towards the place of their destination. Above the bridge, situated in the zone of the mouthpieces, there is provided for either path of the cigarettes an endless belt which travels at twice the speed of the transfer and conveyor belts and is movable from the bridge plate.

The invention will now be described by way of example with reference to the accompanying drawings, in which—

Fig. 1 shows a top view of the depositing device, while Fig. 2 is a side elevation view shown in section along the line II—II of Fig. 1.

Referring to the drawings, the mouthpiece cigarettes Z of each pair discharged by a rotary drum (not shown) are deposited on a separate endless transfer belt 1*a* and 1*b*, respectively. These belts extend substantially horizontally and are positioned at an angle to each other so that the cigarettes are moved laterally away from each other when conveyed lengthwise with the belts. Adjacent to each of the two belts 1*a* and 1*b*, there is arranged a bridge 2*a* and 2*b*, respectively, each provided with a highly polished surface 2', by means of which bridge the separate sets of cigarettes 2 are passed each to a continuous conveyor belt 3*a* and 3*b*, respectively, between which a partition wall 4 is erected.

A receiving funnel 4' is arranged between the two transfer belts 1*a* and 1*b* for catching, during the starting of the machine or during the initial travel of the transferring belts, any filter pieces which are not connected to their associated cigarettes, so that the belts 1*a* and 1*b* carry only completed mouthpiece cigarettes.

An endless belt is arranged above each of the two

bridges 2*a* and 2*b* in the zone of the mouthpieces of the cigarettes Z. The belts consist each of a belt-carrier 5*a* (see Fig. 2) and a soft engaging pad 5*b* and 5*c*, respectively. Also these belts, as well as the transferring belts 1*a* and 1*b* and the conveyor belts 3*a* and 3*b* are positively driven in a suitable manner, namely such that the belts 5*b* and 5*c* travel at twice the speed of the transferring and conveyor belts.

The supporting rollers 6*a* and 6*b* of the belts 5*b* and 5*c*, and of which the rollers 6*a* are horizontally adjustable at 6', are individually adjustable with respect to height in a supporting frame 7 which is swingable away from the bridge 2*a* and 2*b*, respectively. The rollers 6*a* are adjustable to a proper degree higher than the other rollers 6*b* in order to produce a conical pass.

It has been found that the cigarettes deposited on the transfer belts 1*a* and 1*b*, as indicated in Fig. 1, frequently happen to assume an inclined position. These cigarettes are seized by the belts 5*b* and 5*c*, whereby in the oblique position of the cigarettes shown in Fig. 1 the end portions thereof first arrive at the bridge 2*a* and 2*b*, respectively, where the traveling motion imparted by the belts 1*a* and 1*b*, respectively, thus terminates, while the mouthpiece end portions of the cigarettes are still subjected to traveling impulses. The cigarettes are thus aligned to proper position in front of the bridge by the influence of the belts 5*b* and 5*c*, in order to be rolled thereafter across the highly polished surfaces of the bridges 2*a* and 2*b*. In this operation any possible unevennesses of the cigarettes are rolled smooth, and furthermore the connecting bands uniting mouthpieces and cigarettes are securely rolled onto the latter.

What I claim is:

1. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged side by side endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being disposed transversely of said conveyor belts and arranged in axial alignment with the filter tip ends adjacent one another on the respective conveyors, two spaced parallel and horizontally arranged conveyor belts arranged in substantially a straight line path with the transfer belts for receiving the cigarettes from said transfer belts, the ends of said conveyor belts being spaced from the ends of said transfer belts, a stationary bridge member having a highly polished surface arranged in the space between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt disposed above each of said stationary bridge members for engaging and conveying the cigarettes discharged upon said bridge member.

2. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being arranged in axial alignment with the filter tip ends adjacent one another, an open funnel for catching loose filter mouthpieces between said two diverging transfer belts, two spaced parallel and horizontally arranged conveyor belts for receiving the cigarettes from said transfer belts, a stationary bridge member having a highly polished surface arranged between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt above each said stationary bridge member for engaging

and conveying the cigarettes discharged upon said bridge member.

3. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged side by side endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being arranged in axial alignment with the filter tip ends adjacent one another and extending transversely of said conveyor path, two spaced parallel and horizontally arranged conveyor belts for receiving the cigarettes from said transfer belts, said conveyor belts having their ends spaced from the discharge ends of said transfer belts, a stationary bridge member having a highly polished surface arranged in the space between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt disposed above each said stationary bridge member for engaging and conveying the cigarettes discharged upon said bridge member, means for adjusting said driven belts in vertical direction, said last-named belts being provided for rolling the mouthpiece cigarettes across the bridge members and adapted to be obliquely adjustable towards the horizontal line so that a conical intake pass is formed for the cigarettes arriving at the bridge member.

4. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged side by side endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being arranged in axial alignment with the filter tip ends adjacent one another and disposed transversely of said conveyor path, two spaced parallel and horizontally arranged conveyor belts for receiving the cigarettes from said transfer belts, the ends of said conveyor belts being spaced from the discharge ends of said transfer belts, a stationary bridge member having a highly polished surface arranged between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt above each said stationary bridge member for engaging and conveying the cigarettes discharged upon said bridge member, said endless driven belts being each mounted in a frame provided with two substantially horizontally spaced rollers which support said belts, and means for pivotally moving said frame relatively to said stationary bridge member to permit each of said endless driven belts to be rocked upwardly away from said bridge member.

5. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged side by side endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent

conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being arranged in axial alignment with the filter tip ends adjacent one another and disposed transversely of said conveyor path, two spaced parallel and horizontally arranged conveyor belts for receiving the cigarettes from said transfer belts, the discharge ends of said transfer belts being spaced from the ends of said conveyor belts with the conveyor belts extending into a line of direction the path of which is coextensive with the transfer belts, a stationary bridge member having a highly polished surface arranged between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt above each said stationary bridge member for engaging and conveying the cigarettes discharged upon said bridge member, said endless driven belts being each mounted in a frame provided with two substantially horizontally spaced rollers which support said belts, means for horizontally adjusting one of said rollers in said frame, and means for pivotally moving said frame relatively to said stationary bridge member to permit said endless driven belts to be rocked on their pivotal mounting upwardly away from said bridge plate.

6. In a cigarette-making machine, a cigarette receiving and conveying device including two horizontally arranged side by side endless transfer belts arranged with one of their ends adjacent one another and with their other ends laterally spaced from each other to form two divergent conveyor paths, said adjacent ends of said transfer belts being adapted to receive sets of filter tip cigarette pairs, the cigarettes in each pair being arranged in axial alignment with the filter tip ends adjacent one another and disposed transversely to the direction of conveyor travel, two spaced parallel and horizontally arranged conveyor belts for receiving the cigarettes from said transfer belts, said conveyor belts having their ends spaced from the discharge ends of said transfer belts, said conveyor belts being coextensive and arranged in a substantially straight line path, a stationary bridge member having a highly polished surface arranged in the space between each discharge end of said transfer belts and each receiving end of said conveyor belts, and an endless driven belt above each said stationary bridge member for engaging and conveying the cigarettes discharged upon said bridge member, said driven belts being provided with a cigarette engaging surface consisting of soft felt and being adapted to be rotated at a speed equal to substantially twice the speed of said transfer belts.

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