

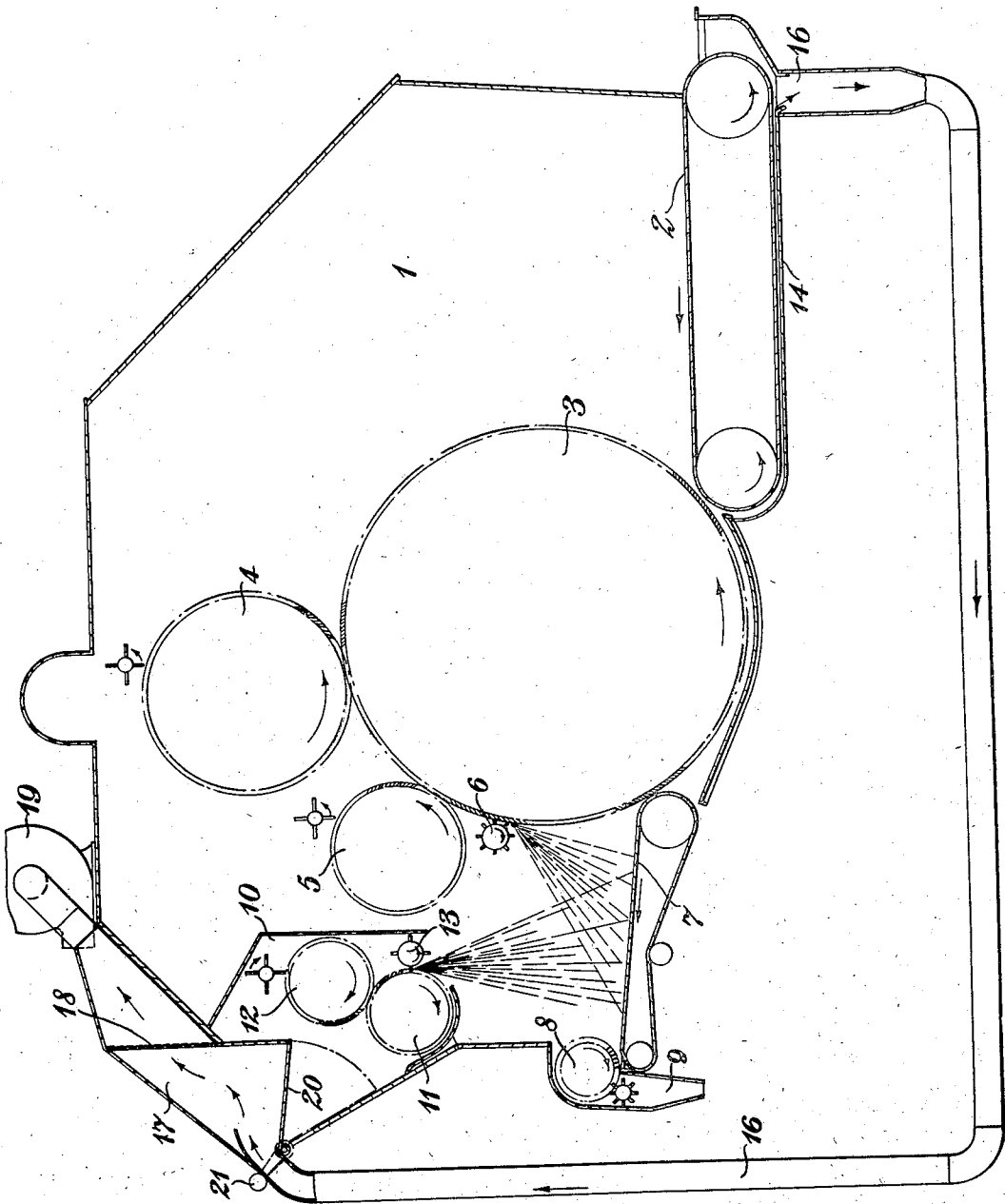
Oct. 22, 1935.

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2,018,011

TOBACCO FEEDING APPARATUS FOR CIGARETTE MAKING MACHINES

Filed July 19, 1934



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UNITED STATES PATENT OFFICE

2,018,011

TOBACCO FEEDING APPARATUS FOR CIGARETTE MAKING MACHINES

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Application July 19, 1934, Serial No. 736,067
In Great Britain July 22, 1933

13 Claims. (Cl. 131—39)

This invention relates to tobacco feeding apparatus for supplying tobacco to the forming mechanism of continuous rod cigarette-making machines and has for its object to provide an improved feeding apparatus wherein provision is made for effectively dealing with the "shorts" in the tobacco whereby the correct proportion and distribution of "shorts" is introduced into the formed rod.

According to the invention in tobacco feeding apparatus means are provided for delivering or showering the "shorts" onto a continuously travelling layer of short-free or substantially short-free tobacco or feed at a point where the quantity of tobacco has been finally determined prior to its delivery into the chute of the rod forming mechanism.

The invention also consists in a tobacco feed for cigarette rod making machines wherein means are provided for extracting "shorts" from the main hopper supply, means for forming a predetermined or measured layer or feed of substantially short-free tobacco and means for delivering or showering "shorts" onto said layer and means for showering the combined layer into the chute whereby the "shorts" and short-free tobacco are intermingled.

Apparatus for feeding short tobacco are not unknown but all such "shorts" feeds have previously been fitted in such a position in the tobacco feed as to shower or deliver the short tobacco onto the main supply of tobacco in the hopper or on the main drum before an even layer has been predetermined or the quantity of tobacco has been measured.

Owing to the varying extent of movement of the main supply of tobacco in the hopper which is difficult to control in an effective manner, or similar varying movement of that part of the main supply of tobacco on the main drum, this has resulted in accumulation of short tobacco in patches, resulting in some uneven distribution of the short tobacco on the feed belt or drum and, consequently, similar uneven distribution of "shorts" in the cigarettes produced.

The accompanying drawing diagrammatically illustrates in cross section a tobacco feed mechanism having means for dealing with "shorts" according to the invention.

In carrying the invention into effect according to one convenient mode, by way of example, the tobacco feed comprises a hopper 1 the lower wall of which consists of a carded endless belt 2 by which the tobacco is delivered to a carded drum 3 having associated therewith the usual refusing roll or rolls 4 and 5.

On the side of the drum 3 remote from the hopper a picker roll 6 is provided for delivering the tobacco retained on the drum after passing

the refusing rolls downwardly in a shower onto a more or less horizontal feeding belt 7.

This feeding belt as will be appreciated, receives a definite measured quantity of tobacco which is adapted to be delivered to a shielded pin wheel 8 from which it is delivered or showered into the chute 9 of the rod forming mechanism beneath which the cigarette paper web, or an endless band from which the tobacco is delivered to the paper web, is located.

It will be appreciated that the length of the various drums or rolls mentioned and the width of the belts 2 and 7 correspond to the width of the hopper so as to deal with and deliver a shower of tobacco having a width equal to that of the hopper.

Mounted above the feeding belt 7 so as to deliver or shower "shorts" thereon is an auxiliary hopper 10 which extends across the full width of the belt and which may be provided with a carded feed roll 11 with which a refusing roll 12 cooperates. A forked guard may press the short tobacco onto the feed roll 11 after it has been acted upon by the refusing roll and a picker roll 13 is provided for delivering or showering the "shorts" from the feed roll onto the feed belt 7.

The length of the rolls in the "shorts" feed is substantially equal to the width of the belt 7 whereby the shower or delivery of the "shorts" extends over the full width of the layer of tobacco feed in the conveyor.

By such arrangement an effective control is provided whereby the correct proportion of "shorts" may be introduced or incorporated in the tobacco feed and by depositing the "shorts" supply at the position and in the way described the difficulties of inadequate and irregular proportioning of "shorts" and uneven distribution of "shorts" is avoided. Moreover, by showering the "shorts" on the substantially horizontal feed belt an even distribution of the "shorts" averaging over a considerable number of cigarettes is ensured whereby the desired ratio of the "shorts" and the production of a uniform cigarette is attained.

The amount of "shorts" delivered to the layer of tobacco on the feed belt 7 may be controlled by variation of the speed of the drums 11 and 12 in the auxiliary or "shorts" feed; by varying the gap between such drums or by altering the width of the hopper by means of an adjustable side wall.

The tobacco in the hopper 1 will contain initially a proportion of "shorts" and also "shorts" will be produced by the continual turning over movement caused by action of the conveyor 2 and feed drum 3. These "shorts" gradually settle to the bottom of the hopper upon the conveyor 2 and are fed toward the feed drum and filter through the space between the forward end of

the conveyor and the drum. They are collected by the shield or plate 14 located below the conveyor. The cards on the conveyor cause the "shorts" to travel along the shield from which they are delivered to a suction conveying conduit 16.

The conduit delivers into an upper compartment 17 of the "shorts hopper where the dust is separated and drawn off through the grid 18 by means of the fan 19. The compartment 17 is closed from the hopper 10 by a pivoted flap 20 which is counterweighted and upon which the "shorts" accumulate until the weight 21 is overcome and they are delivered into the hopper 10.

It will be obvious that "shorts" may be delivered to the hopper 10 from any other source, for example "shorts" separated from the tobacco of rejected cigarettes which have been opened may be delivered direct to the "shorts" hopper. It is preferred however to feed the tobacco from rejected cigarettes to the main hopper 1 so that as much as possible of the longer tobacco will be taken up by the feed drum 3, the "shorts" passing through to the conveying conduit and thence to the "shorts" hopper.

While it is preferred to incorporate the "shorts" by the air of the feeding conveyor 7, obviously such conveyor may be replaced by a carded feed drum above which the "shorts" hopper is located so that the "shorts" will be showered onto the measured quantity or predetermined layer of tobacco conveyed by the drum.

I claim:

1. Mechanism for feeding tobacco to cigarette rod making machines comprising a main hopper, an auxiliary hopper for shorts, means for extracting shorts from the main hopper, suction means for conveying the extracted shorts to the shorts hopper, means for forming a predetermined layer of short-free tobacco from the main hopper, means for delivering shorts from the auxiliary hopper onto said layer and means for showering the combined layer into the chute of the machine.

2. Mechanism for feeding tobacco to cigarette rod making machines as claimed in claim 1 wherein the suction conveying means includes means for separating dust from the shorts prior to the delivery into the shorts hopper.

3. Mechanism for feeding tobacco to cigarette rod making machines comprising a main hopper, an auxiliary hopper for shorts, means for extracting shorts from the main hopper, suction means for conveying the extracted shorts to the shorts hopper, a travelling band located below the shorts hopper, means for forming a predetermined layer of short-free tobacco from the main hopper upon said band, means for delivering shorts from the shorts hopper onto said layer, and means for showering the combined layer into the chute of the machine.

4. The method of feeding tobacco to a cigarette machine, which consists of extracting shorts from long shreds of tobacco, reuniting said shorts and long shreds by showering them together to form a sheet of intermingled shorts and long shreds, and showering the tobacco in said sheet to the cigarette machine.

5. The method of feeding tobacco to a cigarette machine, which consists in extracting shorts from long shreds of tobacco, reuniting said shorts and long shreds by showering them in cross showers to form a sheet of intermingled

shorts and long shreds, and showering the tobacco in said sheet to the cigarette machine.

6. The method of feeding tobacco to a cigarette machine, which consists in extracting shorts from long shreds of tobacco, conveying said shorts to a position from which they can be reunited with the long shreds, reuniting said shorts and long shreds by showering them together to form a sheet of intermingled shorts and long shreds, and showering the tobacco in said sheet to the cigarette machine.

7. The method of feeding tobacco to a cigarette machine, which consists in extracting shorts from long shreds of tobacco, conveying said shorts in a current of air to a position from which they can be reunited with the long shreds, reuniting said shorts and long shreds by showering them together to form a sheet of intermingled shorts and long shreds, and showering the tobacco in said sheet to the cigarette machine.

8. The method of feeding tobacco to a cigarette machine, which consists in extracting shorts from long shreds of tobacco, conveying said shorts to a position from which they can be reunited with the long shreds, removing dust from said shorts in transit, reuniting said shorts and long shreds by showering them together to form a sheet of intermingled shorts and long shreds, and showering the tobacco in said sheet to the cigarette machine.

9. The combination with means for extracting shorts from long shreds of tobacco, devices for showering said shorts and long shreds together to reunite them and form a sheet of intermingled shorts and long shreds, and means for showering the tobacco in said sheet to a cigarette machine.

10. The combination with means for extracting shorts from long shreds of tobacco, devices for showering said shorts and long shreds in cross showers to reunite them and form a sheet of intermingled shorts and long shreds, and means for showering the tobacco in said sheet to the cigarette machine.

11. The combination with means for extracting shorts from long shreds of tobacco, means for conveying said shorts to a position from which they can be reunited with the long shreds, devices for showering said shorts and long shreds together to reunite them and form a sheet of intermingled shorts and long shreds, and means for showering the tobacco in said sheet to the cigarette machine.

12. The combination with means for extracting shorts from long shreds of tobacco, suction apparatus for conveying said shorts to a position from which they can be reunited with the long shreds, devices for showering said shorts and long shreds together to reunite them and form a sheet of intermingled shorts and long shreds, and means for showering the tobacco in said sheet to the cigarette machine.

13. The combination with means for extracting shorts from long shreds of tobacco, of means for conveying said shorts to a position from which they can be reunited with the long shreds, means for removing dust from said shorts in transit, devices for showering said shorts and long shreds together to reunite them and form a sheet of intermingled shorts and long shreds, and means for showering the tobacco in said sheet to the cigarette machine.

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