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DUST REMOVER FOR TOBACCO FEEDS

Filed March 15, 1930

FIG. 1

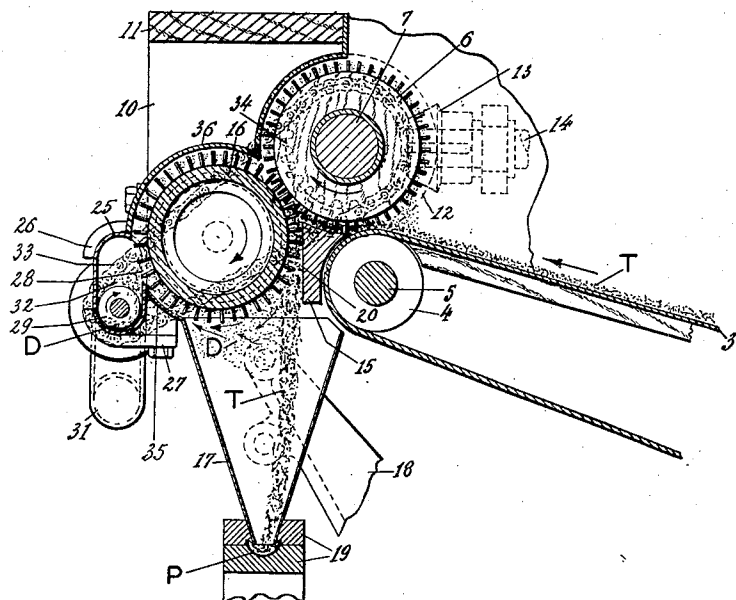
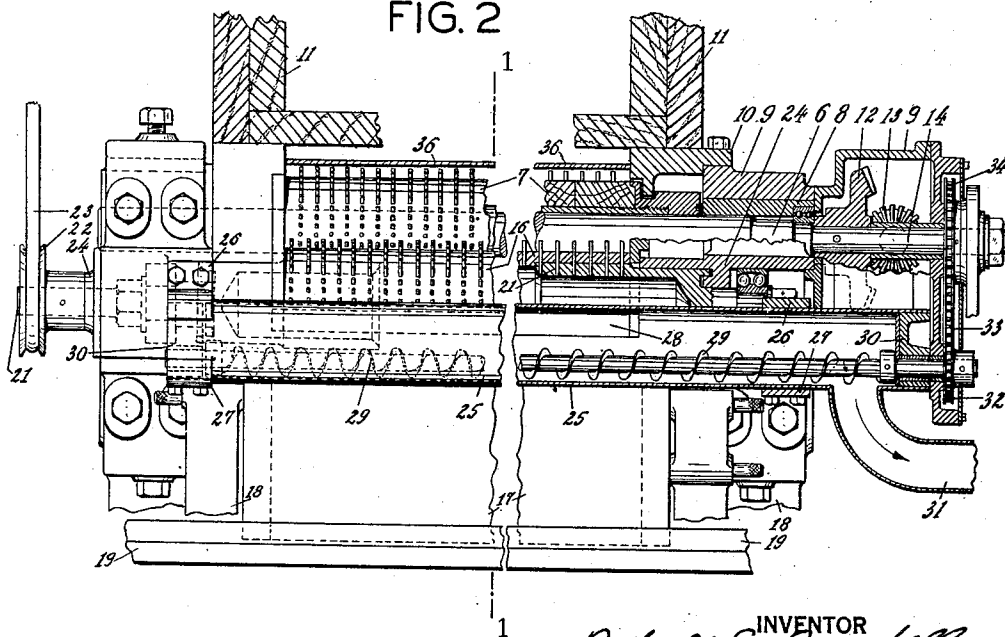


FIG. 2



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## DUST REMOVER FOR TOBACCO FEEDS

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This invention relates to tobacco feeds for continuous rod cigarette machines and the like, its main object being to provide means for removing small tobacco particles or tobacco dust from the tobacco layer on the picker roller before the tobacco is fed onto the continuous running paper strip.

With this and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In manufacturing cigarettes by means of a continuous rod cigarette machine, it is very important for obtaining a high quality of product that the tobacco filling of the rod be of uniform consistency and free from loose particles or dust. In the present invention the delivering picker roller of the tobacco feed is provided with a suction chamber and conveyor mechanism which removes the dust from the tobacco as it enters the delivery chute and thus prevents it from being carried into the cigarette rod.

In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts:

Fig. 1 is a sectional end elevation of a portion of a cigarette machine tobacco feed equipped with the improved dust remover; and

Fig. 2 is a side elevation, partly in cross section, showing the construction of the dust removing mechanism.

In carrying the invention into effect, there is provided means for feeding tobacco to the cigarette wrapper material, means for guiding the wrapper material, and suction means for removing dust and loose particles from the tobacco feeding means. In the best constructions, the tobacco feeding means includes a plurality of cooperating rollers adapted to feed the tobacco. In the best constructions also, the suction means includes a suction chamber having an apertured wall disposed adjacent to the tobacco feeding means and a conduit leading to a source of suction. These various means and parts may

be widely varied in construction within the scope of the claims, for the particular machine selected to illustrate the invention is but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the specific construction shown and described.

In a cigarette machine tobacco feed, the tobacco picked up from the feed magazine by the main feed drum (not shown) is fed onto a feed belt 3 which runs over a roller 4 on shaft 5 and carries the tobacco layer T towards a pin roller 6 mounted on shaft 7. The latter is supported by dust-proof bearings 8 in gear housing 9 attached to the main frame 10 of the tobacco feed housing 11 and carries the bevel gear 12 driven from bevel gear 13 mounted on main shaft 14. When the tobacco T reaches the pin roller 6, it is carried by the latter over a concave cross member 15 supported on its two ends by the main frame 10. The tobacco is then taken off the pin roller 6 by picker roller 16, the pins of which move in the opposite direction and throw the tobacco through chute 17 onto the continuous running cigarette paper strip P. Chute 17 is supported by brackets 18 mounted on the main frame 10 and leads into the feeding channel 19 which guides the paper strip. The throw of the tobacco T in chute 17 is directed in an even stream by the flat side 20 of the concave cross member 15. Picker roller 16 is mounted on sleeve shaft 21 which on one end carries a pulley 22 driven from the main feed drive by means of a belt 23. Sleeve shaft 21 is mounted in dust-proof bearings 24 supported by frame 10.

Adjacent to picker roller 16 is mounted a suction chamber 25 held in place by brackets 26 and 27. This suction chamber at one side has a wide opening 28 extending along its length, allowing the picker roller 16 to partly enter into the same, and in its bottom is provided with a screw conveyor 29 supported by bearings 30 which form the ends of the suction chamber and support the same. Chamber 25 is connected by a tube 31 to a vacuum pump or exhaust fan. The conveyor 29 is rotated by a sprocket 32 driven through

chain 33 by sprocket 34 mounted on pin roller shaft 7.

The picker roller 16 revolves at high speed and thereby creates an air current in the direction of its motion which winnows the dust D from the tobacco stream T in the chute 17 and directs it towards the chamber 25 into which it is sucked through the passage formed by the wall 35 connecting the chute 17 with the chamber 25. When the speed of picker roller 16 is sufficiently high, it is found that the air current created by its motion is strong enough to carry tobacco dust D from the chute 17 into chamber 25 without the aid of suction. Thus, by the combined actions of the picker roller motion and the vacuum pump, most of the loose dust contained in the tobacco is collected in chamber 25 whence the conveyor screw 29 carries the same to the outlet 31 through which it is taken away by the vacuum pump. The reason for providing the conveyor 29 to carry off the dust collected in chamber 25 is that, if suction strong enough to empty the chamber were employed to operate the device, not only the winnowed dust D, but also tobacco from the stream T in chute 17 would be sucked into chamber 25, and the object of the device would thus be defeated.

What is claimed is:

1. The combination with the picker roll of a cigarette machine feed, of an open-sided channel extending along said roll and into which said roll fans dust from the tobacco it operates on, and means for removing dust from said channel.

2. The combination with the picker roll of a cigarette machine feed, of an open-sided channel extending along said roll and into which said roll fans dust from the tobacco it operates on, and means for removing dust from said channel, said channel being substantially circular in cross section with its open side close to the side of said roll.

3. The combination with the picker roll of a cigarette machine feed, of an open-sided channel extending along said roll and into which said roll fans dust from the tobacco it operates on, and means for removing dust from said channel, said means including a screw conveyor operating in said channel and a suction pipe to which said conveyor delivers the dust.

4. Means for removing dust and loose particles from a tobacco feeding means of a cigarette machine, comprising a suction chamber to receive the dust and loose particles from the tobacco feeding means and a screw conveyor adapted to collect the dust and loose particles at one end of said suction chamber.

5. In a cigarette machine, the combination with means for feeding tobacco to the wrapper material, of means for guiding the wrapper material, and suction means for removing dust and loose particles from said

tobacco feeding means, said suction means including a suction chamber to receive the dust and loose particles from the tobacco feeding means and a screw conveyor adapted to collect the dust and loose particles at one end of said suction chamber.

6. In a cigarette machine, the combination with means for feeding tobacco to the wrapper material, of means for guiding the wrapper material, and suction means for removing dust and loose particles from said tobacco feeding means, said suction means including a suction chamber having a wall provided with a longitudinal opening disposed adjacent to the tobacco feeding means to receive the dust and loose particles therefrom and a conveyor adapted to collect the dust and loose particles at one end of said suction chamber.

7. In a cigarette machine, the combination with means for feeding tobacco to the wrapper material, of means for guiding the wrapper material, and suction means for removing dust and loose particles from said tobacco feeding means, said suction means including a suction chamber having a wall provided with a longitudinal opening disposed adjacent to the tobacco feeding means to receive the dust and loose particles therefrom, a conduit leading to a source of suction, and a screw conveyor adapted to carry the dust and loose particles to the conduit.

In testimony whereof, I have signed my name to this specification.

RUPERT E. RUNDELL.