April 18, 1933. W. E. MOLINS ET AL 1,903,931

APPARATUS FOR SUPPLYING TOBACCO TO A CIGARETTE MAKING MACHINE

Filed Feb. 25, 1931 2 Sheets-Sheet 1

Fig.1.

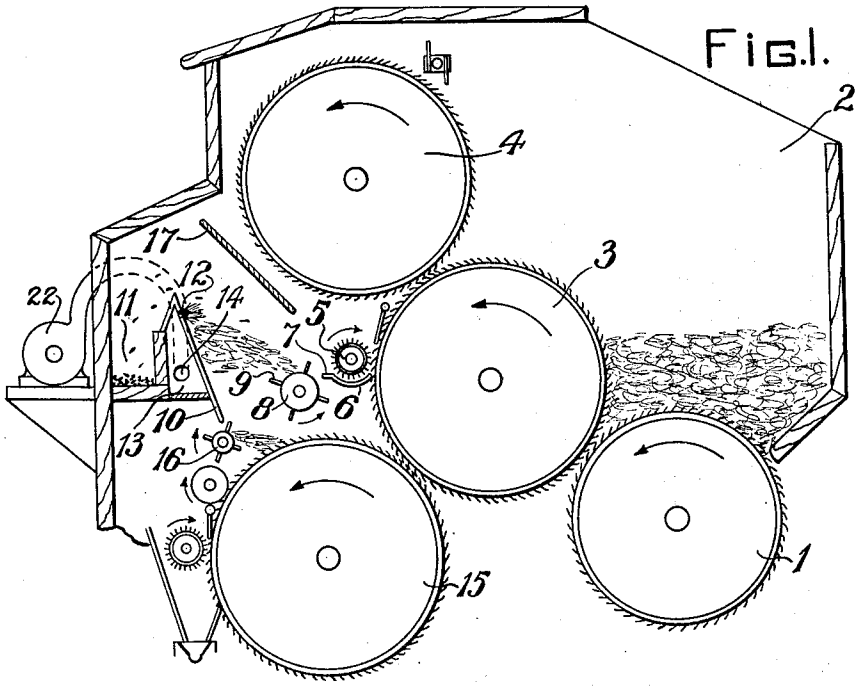
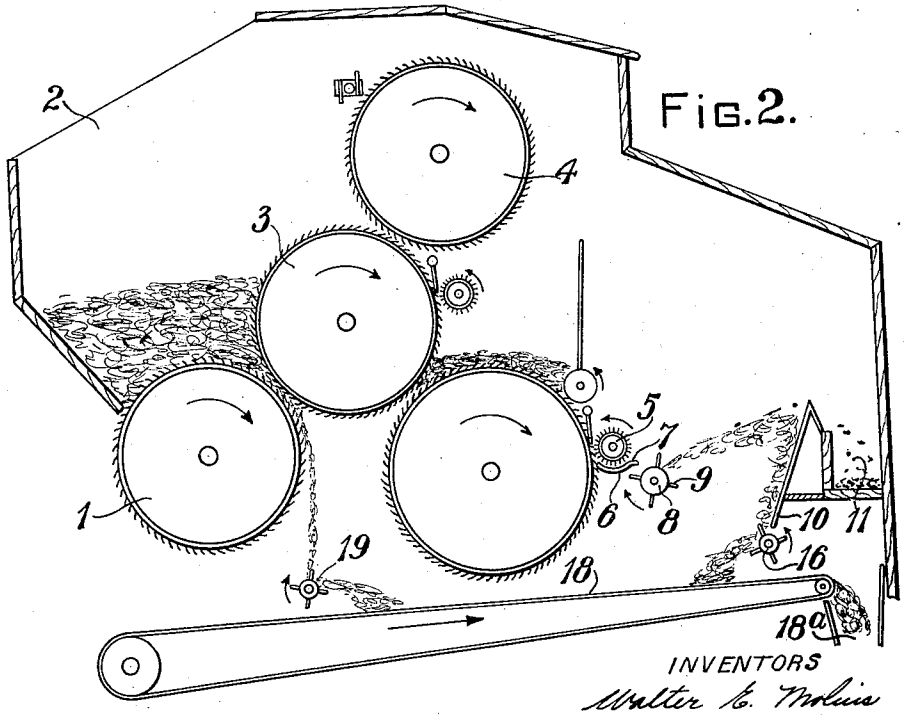


Fig.2.



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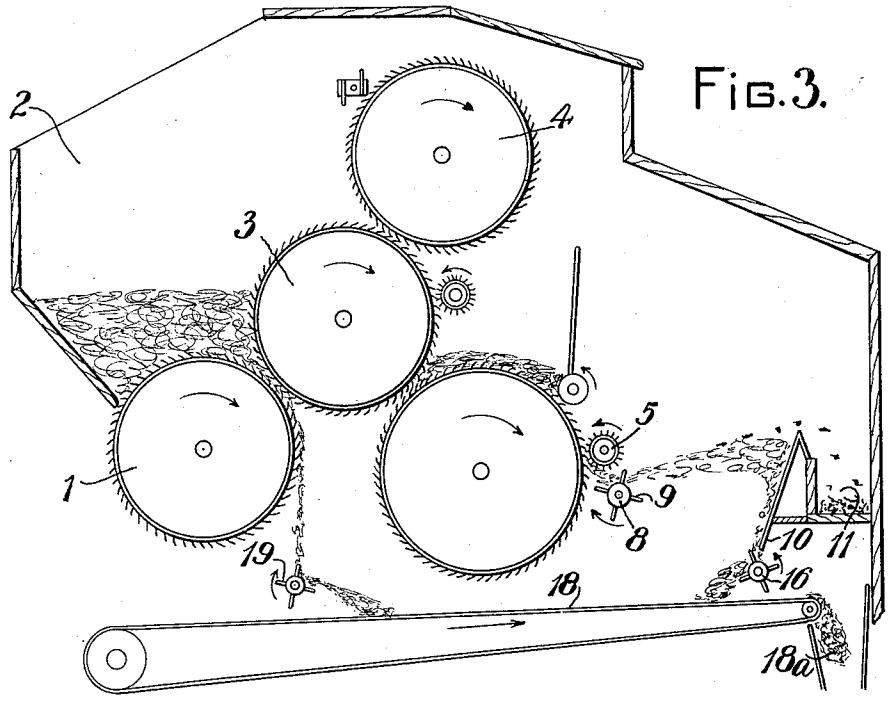


Fig. 3.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR SUPPLYING TOBACCO TO A CIGARETTE MAKING MACHINE

Application filed February 25, 1931, Serial No. 518,225, and in Great Britain March 18, 1930.

This invention relates to apparatus for supplying tobacco to a cigarette making machine, and has for its object to provide an improved form of winnowing or stalk separating device in such apparatus.

The invention comprises a winnowing device for use in the tobacco feeding apparatus of cigarette making machines, having means for projecting the tobacco in an upwardly directed shower at an angle to the horizontal, a baffle board disposed in the path of said shower arranged to separate the stalks and the like from the remainder of the shower, and means for evenly spreading the winnowed tobacco over the surface of a distributor of the tobacco hopper.

Further, the invention comprises a winnowing device as set forth in the preceding paragraph wherein the tobacco shower is subjected to an air blast arranged to issue upon the near side of the baffle board to check the motion of the light particles of tobacco, whilst permitting the stalks to pass to a chamber or the like disposed upon the far side of the baffle board relatively to the shower.

Again, the invention comprises a method of winnowing tobacco for use in a cigarette making machine consisting of projecting the tobacco in an upwardly directed shower at an angle to the horizontal, and if desired, subjecting the shower to an air blast to check the motion of the light particles of tobacco, separating the stalks from the shower and thereafter evenly spreading the winnowed tobacco over the surface of the distributor of the tobacco hopper.

The invention will be more particularly described with reference to the accompanying drawings, in which:—

Fig. 1 is a section of one type of tobacco feeding apparatus with the invention applied thereto, and

Figs. 2 and 3 are similar views of modified forms of the invention.

Referring to Fig. 1, a feed roller 1 at the base of the hopper 2 is arranged to feed tobacco to a carded combing roller 3, which in turn feeds the tobacco upwardly and beneath a carded brushing roller 4 which rotates in such a manner as to brush back the superfluous tobacco which is being fed by the combing roller 3, thus controlling the quantity of tobacco which is fed forwardly by the combing roller.

The tobacco is then picked from the combing roller 3 by a picker roller 5. The picker roller 5 has an arc shaped trough or "concave" 6 mounted beneath the same so as to closely shroud the teeth of the picker, and the edge of the concave has a horizontal lip 7, as shown.

A rotating roller 8 provided with vanes 9 is mounted in close proximity to the picker roller 5 so that the vanes of the roller 8 move almost in contact with the horizontal lip of the concave during the rotation of the roller.

As the tobacco is delivered by the picker roller from the concave, it is struck by the vanes 9 and thrown upwardly and away from the main combing roller.

A sloping baffle board 10 is mounted at a suitable distance from the picker roller 5 and the top edge of the baffle board is so positioned that stalks or similar heavy particles in the tobacco receive sufficient velocity from the vaned roller to pass over the top edge of the baffle board into a trough 11, from which they are removed by the operator. The baffle board is preferably mounted in an adjustable manner so that it may be set at the discretion of the operator, according to the nature of the tobacco in use, as in some cases a larger proportion of stalks is allowed to pass into the filler channel of the machine than in other cases. Any suitable method of adjustment may be employed.

In order to ensure that only the heavy particles are thus separated from the shower of tobacco, the shower may be subjected to the action of a cross-current or blast of air. For instance, a slit 12 may be made in the baffle board 10 near to its top edge, and extending for practically the whole length of the board, which is equal to the length of the various rollers. A strong current of air, which may be delivered by a conventional blower 22, enters the chamber 13 by the orifice 14, passes through the slit 12 across the upward shower of tobacco from the vaned

roller 8, and this causes all the lighter particles of tobacco to be blown back so that they fall on to the distributor, while the heavy stalks pass over into the waste trough, as previously mentioned.

Owing to the disposition of the baffle board 10 a considerable quantity of tobacco strikes the same and slides down to its base, whilst some of the lighter particles drop directly from the roller 8 on to the distributing roller 15. If the base of the baffle board is arranged in contact with the distributor, it is found that the tobacco which slides down the board forms in heaps at the junction of these two parts and causes irregular feeding.

In order to prevent the above defect a rotating roller 16 provided with vanes is mounted at the foot of the baffle board so that the rotation of the vanes throws the tobacco as it slides down the baffle board across the surface of the distributing roller 15, thus causing the tobacco to be evenly distributed on the said surface.

A guard board 17 may be mounted as shown to prevent any of the shower from striking the brushing roller 4.

The apparatus shown in Fig. 2 is, in general, similar to that shown in Fig. 1, but in this instance, the tobacco is spread by the roller 16 on to a distributor in the form of a belt 18 which carries it along to the filler channel 18^a, the tobacco dropping by gravity as the belt bends over on the pulley.

If desired, a preliminary separation of very short particles or dust may take place between the feeding roller and combing roller, the said dust being spread on to the distributor by a vaned roller 19, similar in construction and action to the roller 16.

This arrangement relieves the roller 8 from the very short tobacco which otherwise causes an undesirable amount of dust to be formed at the point where the winnowing action takes place; the dust causing the machine to become dirty besides being very unpleasant to the operators.

In Fig. 3 the arrangement is almost identical with that in Fig. 2, but the "concave" is dispensed with and the tobacco picked by the picker roller 6 falls immediately on to the vaned roller 8.

It will be seen, therefore, that a winnowing device constructed according to this invention not only effectively separates the stalks from the tobacco, but also ensures that the winnowed tobacco is evenly spread on the distributor, thus preventing the winnowing operation from interfering with the normal functions of the cigarette making machine.

What we claim as our invention and desire to secure by Letters Patent is:—

1. A method of winnowing tobacco for use in a cigarette making machine which comprises the following steps:—

(*a*) Projecting the tobacco in an upwardly directed shower at an angle to the horizontal.

(*b*) Subjecting the shower to an air blast to check the motion of the light particles of tobacco.

(*c*) Separating the stalks from the desired shreds in the shower.

(*d*) Projecting the desired shreds in a shower to evenly spread the tobacco over the surface of a distributor.

2. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, of means extending into the path of the projected tobacco for separating the desired shreds from the undesired stalks and foreign matter means including a distributor for effecting delivery of the tobacco to the cigarette paper, and means for receiving the separated desired shreds and projecting the same through space to spread the shreds uniformly over the distributor.

3. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, of means extending into the path of the projected tobacco for separating the desired shreds from the undesired stalks and foreign matter, and means for directing an air blast against the tobacco thus projected to retard the motion of the lighter desired shreds to facilitate separation of the same from the stalks.

4. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, of means extending into the path of the projected tobacco for separating the desired shreds from the undesired stalks and foreign matter, and means for directing an air blast against the tobacco thus projected and between the paths of motion of the lighter desired shreds and the heavier stalks to ensure separation thereof.

5. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, a baffle extending into the path of the projected tobacco and so positioned as to intercept the lighter desired shreds only, and means for directing a stream of air in a direction opposed to the direction of motion of the projected tobacco.

6. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, a baffle extending into the path of the projected tobacco and so positioned as to intercept the lighter desired shreds only, and means for directing a stream of air in a direction opposed to the direction of motion of the projected tobacco and outwardly of the baffle adjacent the upper portion thereof.

7. In a winnowing device for cigarette making machines, the combination with

means for projecting the tobacco forcibly through space, a baffle extending into the path of the projected tobacco and so positioned as to intercept the lighter desired shreds only, an opening in said baffle adjacent the upper portion thereof, and means for causing a stream of air to flow through said opening against the projected tobacco.

8. In a winnowing device for cigarette making machines, the combination with means for projecting the tobacco forcibly through space, of means extending into the path of the projected tobacco for separating the desired shreds from the undesired stalks and foreign matter, means including a distributor for effecting delivery of the tobacco to the cigarette paper, means for spreading the separated shreds uniformly on said distributor, and means for delivering a portion of the desired shreds to said distributor prior to the projection of the tobacco by said first named means.

In testimony whereof we hereunto affix our signatures.

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FÉLIX FRÉDÉRIC RUAU.