B. E. TEALE.

TOBACCO CLEANER.

APPLICATION FILED FEB. 23, 1918.

1,326,547.

Patented Dec. 30, 1919.

2 SHEETS—SHEET 1.

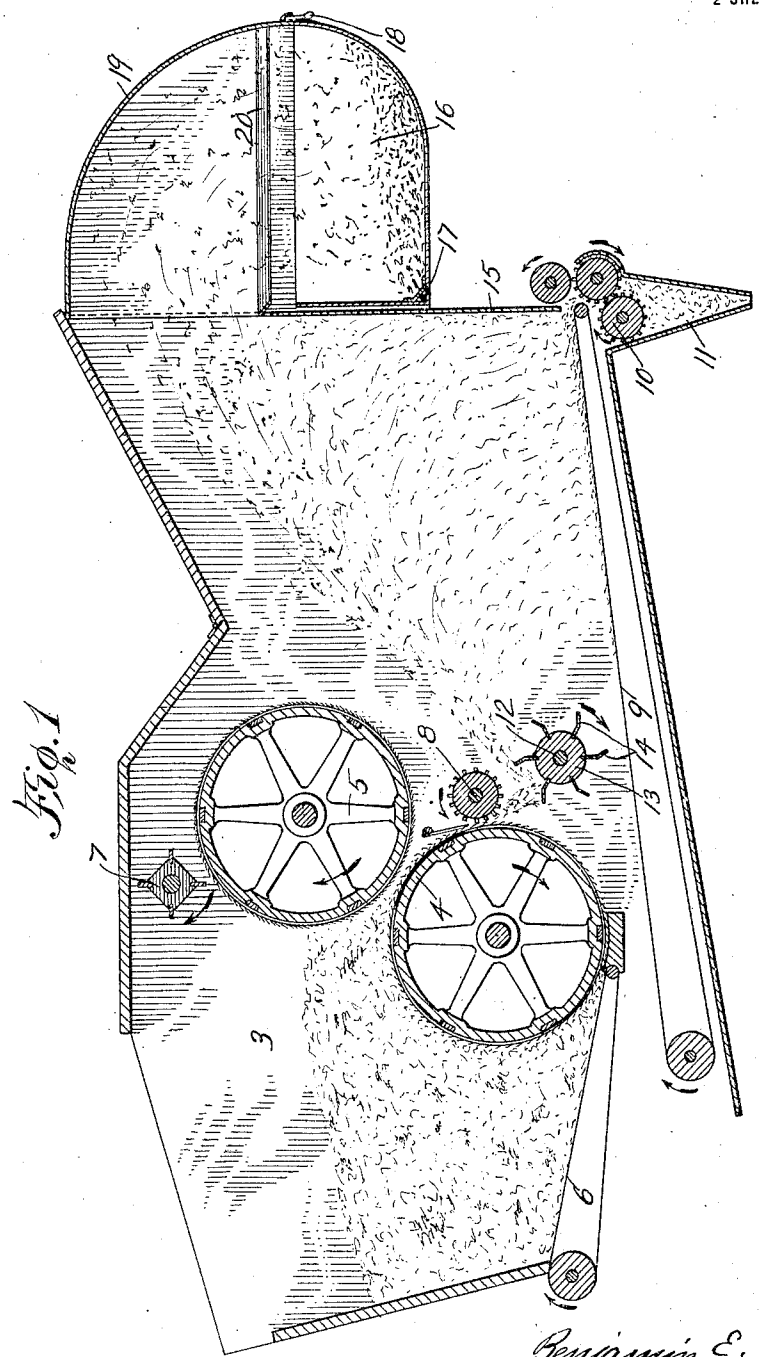


Fig. 1

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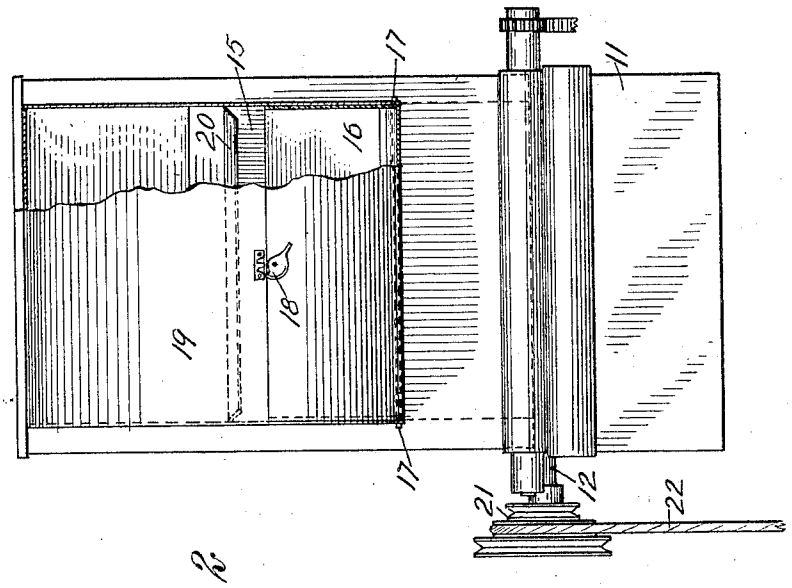


Fig. 2.

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BENJAMIN E. TEALE, OF RICHMOND, VIRGINIA, ASSIGNOR TO BRITISH-AMERICAN TOBACCO COMPANY, LTD., OF NEW YORK, N. Y., A CORPORATION OF GREAT BRITAIN.

TOBACCO-CLEANER.

1,326,547. Specification of Letters Patent. Patented Dec. 30, 1919.

Application filed February 23, 1918. Serial No. 218,639.

To all whom it may concern:

Be it known that I, BENJAMIN E. TEALE, a citizen of the United States, residing at Richmond, county of Henrico, and State of Virginia, have invented a new and useful Improvements in Tobacco-Cleaners, of which the following is a specification.

This invention relates to an improvement in tobacco cleaners for removing relatively heavy pieces of stem and foreign matter from cut or shredded tobacco, particularly adaptable for use in connection with automatic cigarette machine feeds.

In preparing certain kinds of tobacco for use in the manufacture of cigarettes, a considerable portion of the stem of a tobacco leaf is left therein, and when the leaf is sliced or shredded the stem is cut into pieces of varying size dependent upon the original size of the leaf and upon the particular part of the stem from which they are cut. The larger and heavier pieces of stem are objectionable in that they interfere with the proper functioning of the cigarette machine mechanisms in making the cigarettes and with the proper burning of the finished product. The main object of the present invention is the production of a device for cleaning the tobacco by driving its parts along different trajectories and thereby effecting the separation of the lighter parts suitable for cigarettes from the heavier parts and foreign matter unsuitable therefor. Another object is the production of a device of the above general character in-built or otherwise associated with a cigarette machine feed of the automatic type. With these and other objects not specifically mentioned in view, the invention consists in certain constructions, combinations and parts which will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, which form a part of this specification and in which like characters of reference indicate the same or like parts, Figure 1 is a diagrammatic sectional view of a device constructed in accordance with the invention; and Fig. 2 is an end elevation, partly broken away, of the structure shown in Fig. 1.

In carrying the invention into effect, there is provided means for producing a shower of tobacco, and cleaning means including propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation. In the best constructions, the tobacco shower producing means is the picker device of an automatic cigarette machine feed, and the latter is further provided with a delivery belt for delivering the lighter parts of the tobacco to the cigarette machine proper, and with means for collecting the heavier parts for removal from the machine at suitable intervals. In the best constructions also, rotary propelling mechanism is employed, and means are provided for varying the angular velocity of said mechanism to compensate for changes in the condition and action of the tobacco due to atmospheric changes or other causes. These mechanisms, means and devices may be varied in construction in many ways within the scope of the claims. The particular structure 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 precise details of the structure shown and described.

Referring to the drawings, 3 indicates the hopper of an automatic cigarette machine feed provided with a feed drum 4, a filling drum 5, a bottom belt 6, a brushing device 7, a picker device 8 co-acting with the feed drum 4, a delivery belt 9, a second picker device 10 co-acting with the delivery belt, and a delivery chute 11 adapted to guide the tobacco directly to the cigarette machine proper. The parts above referred to and the means ordinarily employed to operate them are all well known in the art and since their particular construction lies outside of the present invention and further description thereof is unnecessary to a full understanding of the present invention it is omitted in the interest of brevity and clearness.

It is to be understood that the tobacco mass confined within the hopper 3 and acted upon by the feed drum 4 and filling drum 5 is in the condition in which it comes from the slicing or shredding machines; that is to say, it is in part formed by light shreds of leaf web and in part by the objectionable and relatively heavy pieces of stem; and it frequently contains objectionable foreign matter also much heavier than the leaf web

shreds. For the purpose of cleaning the tobacco by removing its objectionable parts, the below mentioned cleaning means is employed. As shown, there is provided a shaft 12 extending across the machine at a point adjacent the picker device 8 and journaled in suitable bearings in the side walls of the hopper 3. Upon this shaft is secured a roll 13 provided with a plurality of radial vanes 14 the outer ends of which are bent rearwardly. By an inspection of Fig. 1, it will be understood that the roll 13 with its vanes 14 and rotating in the direction of the arrow constitutes a propelling mechanism positioned to intercept the shower of tobacco produced by the picker device 8 and to drive its heavier and lighter parts along different trajectories, the heavier parts being driven farther than the lighter parts because of their greater weight and lesser surface exposed to air resistance. The lightest parts of the tobacco acted upon by the propelling mechanism fall directly upon the delivery belt 9 and are delivered thereby to the cigarette machine proper. The parts that are a little heavier are propelled or thrown beyond the belt and for the purpose of intercepting them and causing them to fall upon the belt 9 there is provided a baffle wall 15 spaced a suitable distance from the propelling mechanism. As shown in Fig. 1, parts of the tobacco which strike this baffle wall fall upon the belt 9 and are delivered thereby to the cigarette machine proper with the lightest parts.

Means are provided for collecting the heavier parts of the tobacco, and any foreign matter, so that they may be removed from the machine at suitable intervals. As shown, this means includes a receptacle 16 hinged at 17 to the hopper 3. This receptacle is held in proper position beyond the baffle wall, or outside said wall, by means of an ordinary sash lock 18 one part of which is secured to the receptacle and the other to a deflecting hood 19 extending beyond the limits of the hopper 3 and adapted to deflect tobacco thrown against it down into the receptacle. The deflecting hood is further provided with a deflecting ledge 20 which covers the edge of the receptacle and prevents tobacco from lodging thereon. By an inspection of Fig. 1, it will be understood that the heavier parts of the tobacco are driven or thrown by the propelling mechanism over the baffle wall 15 against the deflecting hood 19 and thence into the receptacle 16, or directly into said receptacle. It will be further understood that by unlocking the receptacle and permitting the same to swing down on its hinges or pivots, the accumulated heavier parts of the tobacco therein may be readily removed therefrom, and without stopping the machine.

Tobacco is extremely hygroscopic and atmospheric changes to which it is exposed before or during the ordinary operation of the machines result in corresponding changes in its condition or order. Moreover, different lots of tobacco are frequently prepared in different order. To guard against possible and comparative inefficiency of the machines under changing conditions of this character, means are provided for adjusting the machine in accordance with changes in the condition of the tobacco. As shown, such adjustment is made by varying the angular velocity of the propelling mechanism. This is accomplished by means of a stepped pulley 21 fast upon a projecting end of the shaft 12 and driven by a suitable belt 22.

By an inspection of Fig. 1, it will be understood that the delivery belt 9 underruns the propelling mechanism and the baffle wall 15 and that all of the tobacco will be caught thereupon and delivered to a cigarette machine thereby, excepting the objectionable heavier parts, and foreign matter, thrown over the baffle wall into the receptacle 16.

In view of the foregoing, a detailed description of the operation of the device is deemed unnecessary and is therefore omitted in the interest of brevity.

What is claimed is:

1. The combination with means for producing a shower of tobacco, of cleaning means including rotary propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation.

2. The combination with means for producing a shower of tobacco, of cleaning means including rotary propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation, and means for varying the angular velocity of said mechanism.

3. The combination with means for producing a shower of tobacco, of cleaning means including a rotary propelling mechanism having a plurality of radial vanes the outer ends of which are bent rearwardly and positioned to intercept and adapted to act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation.

4. The combination with means for producing a shower of tobacco, of cleaning means including propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation, a

receptacle into which the heavier parts are thrown and collected, and a traveling belt upon which the lighter parts fall and are delivered at a definite point.

5. The combination with means for producing a shower of tobacco, of cleaning means including propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco, a baffle wall spaced from said mechanism, a receptacle beyond the baffle wall, and a traveling belt underrunning said mechanism and said wall.

6. The combination with means for producing a shower of tobacco, of cleaning means including propelling mechanism positioned to intercept and adapted to act upon the shower of tobacco, a baffle wall spaced from said mechanism, a receptacle hinged to the outer side of said wall, a deflecting hood overlying said wall and receptacle, and a traveling belt underrunning said mechanism and said wall.

7. In an automatic cigarette machine feed, the combination with a picker device, of propelling mechanism positioned to intercept and adapted to act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation, and means for collecting the heavier parts.

8. In an automatic cigarette machine feed, the combination with a picker device, of rotary propelling mechanism positioned to intercept and adapted to act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation, and means for collecting the heavier parts.

9. In an automatic cigarette machine feed, the combination with a picker device, of rotary propelling mechanism positioned to intercept and adapted to act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation, means for varying the angular velocity of said mechanism, and means for collecting the heavier parts.

10. In an automatic cigarette machine feed, the combination with a picker device, of rotary propelling mechanism having a plurality of vanes positioned to intercept and adapted to act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation, and means for collecting the heavier parts.

11. In an automatic cigarette machine feed, the combination with a picker device, of rotary propelling mechanism having a plurality of radial vanes the outer ends of which are bent rearwardly and positioned to intercept and adapted to act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation, and means for collecting the heavier parts.

12. In an automatic cigarette machine feed, the combination with a picker device, of propelling mechanism positioned to intercept and adapted to act upon a shower of tobacco produced by said device, a baffle wall spaced from said mechanism, a receptacle hinged to the outer side of said wall, a deflecting hood overlying said wall and said receptacle, and a traveling belt underrunning said mechanism and said wall.

13. In an automatic cigarette machine feed, the combination with a picker device, of a delivery belt, propelling mechanism between said device and said belt and adapted to act upon a shower of tobacco produced by said device, a baffle wall spaced from said mechanism and over said belt, a receptacle hinged to the outer side of said wall, and a deflecting hood overlying said wall and said receptacle.

14. The combination with means for producing a shower of tobacco, of cleaning means including a propelling mechanism provided with rearwardly inclined operating surfaces extending across and positioned to intercept and act upon the shower of tobacco to drive its heavier and lighter parts along different trajectories and thereby effect their separation.

15. In an automatic cigarette machine feed, the combination with a picker device, of propelling mechanism provided with rearwardly inclined operating surfaces extending across and positioned to intercept and act upon a shower of tobacco produced by said device to drive its heavier and lighter parts along different trajectories and thereby effect their separation.

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

BENJAMIN E. TEALE.