

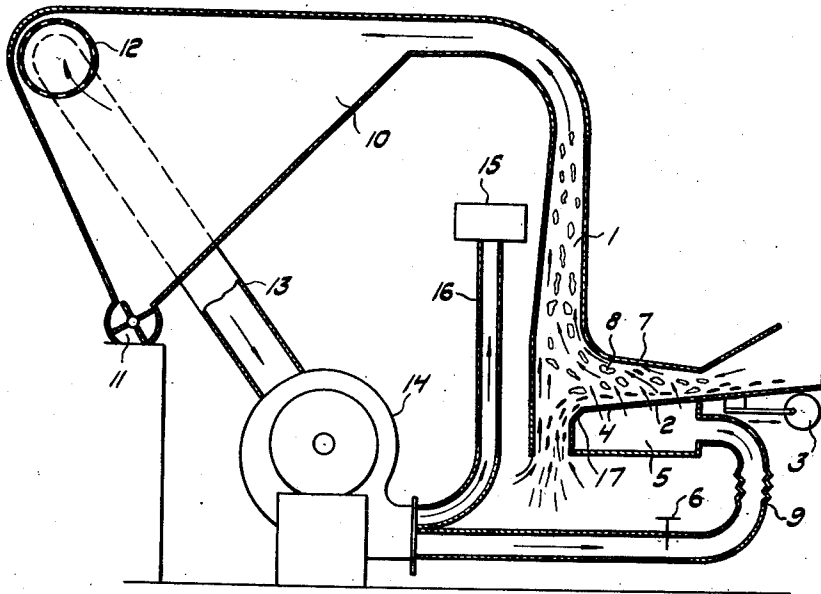
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METHOD AND APPARATUS FOR SEPARATING LEAF TOBACCO

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METHOD AND APPARATUS FOR SEPARATING LEAF TOBACCO

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4 Claims. (Cl. 209—466)

This invention relates to methods of and apparatus for separating leaf fragments and stem portions of a tobacco mass from each other. In conventional apparatus for performing such separating the tobacco mass is over a jigger supplied to a vertical air channel, in which the separation is carried out by means of an ascending air current which carries the lighter leaf fragments with it while the relatively heavy stem portions sink in a direction opposite to said air current. This mode of operation, i. e. the method of causing a portion of the tobacco mass to follow the ascending air current and permitting another portion of said mass to move in a direction opposite to the air current will not afford any effective separation. Furthermore, leaf fragments and stem parts have a tendency to form lumps which might still more impair the separation and cause breakdowns in operation.

It is a main object of the invention to remove said inconveniences.

The accompanying drawing is an elevational sectional view of an apparatus provided with means embodying the invention.

Referring to the drawing, disintegrated tobacco mass drops continually from a disintegrator onto a jigger 2 inclined against a vertical air channel 1 towards which the tobacco mass is conveyed by said jigger which is reciprocated by an eccentric 3. The front portion of the jigger 2 forms the top wall of a box 5 and has openings 4 directed obliquely upwardly and forwardly in the direction of movement of the tobacco mass. Above the box wall 2 there is another wall 7 which extends obliquely upwardly against the air channel 1 and forms the top wall of a separating chamber 8 divergent against the channel and having a bottom wall consisting of the front portion of the jigger 2. At its rear wall the box 5 is connected to a flexible air conduit 9 having a control valve 6.

At its upper end the channel 1 merges with an air chamber 10 which the leaf fragments enter whereafter they are removed through a rotary sluice 11. Dust is sucked off through a rotary screen 12 connected to a suction pipe 13. The pipe 13 is connected to a fan 14 the outlet of which is connected to the conduit 9 and to a branch pipe 16 having a filter 15.

The disintegrated tobacco mass advancing on the jigger 2 towards the channel 1 is subjected to blowing action by air currents projected obliquely upwardly and forwardly through the perforations 4 so that the lighter tobacco particles are whirled upwardly and forwardly in the chamber 8 while the heavier stem portions continue their travel towards the front end 17 of the jigger 2 at which end they sink into the lower portion of the channel 1 and drop into a receptacle or onto a conveyor. The air currents projected through the jigger perforations 4 carry the whirled up tobacco particles into the channel 1 in which they are subjected to the action of the ascending air current afforded by the suction created by the fan 14 which air current is relatively feeble so that it will not carry

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with it the stem portions dropping into the bottom portion of the channel 1. The primary separation, effected in the chamber 8, is completed by the secondary separation in the portion of the channel 1 located above the jigger end 17 whereby also lighter stem parts will sink in the channel 1 as the lighter leaf portions are sucked into the chamber 10.

We claim:

1. In an apparatus for separating disintegrated leaf tobacco from stem portions, a fan, a substantially vertical separating channel having a lateral tobacco inlet opening and a free bottom opening for entering air and discharging stem portions and an upper opening connected to the suction side of said fan, a substantially horizontal separating chamber communicating with and diverging in a direction towards said lateral opening and having a bottom with air inlet openings, means for jolting said bottom, and means for projecting air currents through said bottom into said chamber to pneumatically carry leaf particles into said lateral inlet opening.

2. In an apparatus for separating disintegrated leaf tobacco from stem portions, a fan, a substantially vertical separating channel having a lateral tobacco inlet opening and a free bottom opening for entering air and discharging stem portions and an upper opening connected to the suction side of said fan, a substantially horizontal separating chamber communicating with and diverging in a direction towards said lateral opening and having a bottom with air inlet openings, means for jolting said bottom, a conduit connecting the outlet of said fan with the air inlet openings in said bottom, and a branch air conduit connected with said fan outlet.

3. In an apparatus for separating disintegrated leaf tobacco from stem portions, a fan, a substantially vertical separating channel having a lateral tobacco inlet opening and a free bottom opening for entering air and discharging stem portions and an upper opening connected to the suction side of said fan, a substantially horizontal separating chamber communicating with and diverging towards said lateral opening and having a bottom with air inlet openings, means for jolting said bottom, a conduit connecting the outlet of said fan with the air inlet openings in said bottom and having air flow control means, and a branch air conduit connected with said fan outlet.

4. A method of separating disintegrated leaf tobacco from stem portions in a tobacco mass, consisting of the steps of subjecting said tobacco mass to a preliminary separation by shaking said mass and causing it to advance in a substantially horizontal direction, projecting air currents through said mass during said shaking, and causing said projected air currents to elevate lighter tobacco leaf particles from said mass and carry them in the same direction as same mass is advancing and causing the remainder of said mass to fractionate into an upper layer of relatively light tobacco particles and a lower layer of heavier tobacco particles, and subjecting said tobacco mass to a final separation by passing the lighter tobacco leaf particles, the lighter tobacco particles and the heavier tobacco particles separately into a stream of ascending air.

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