

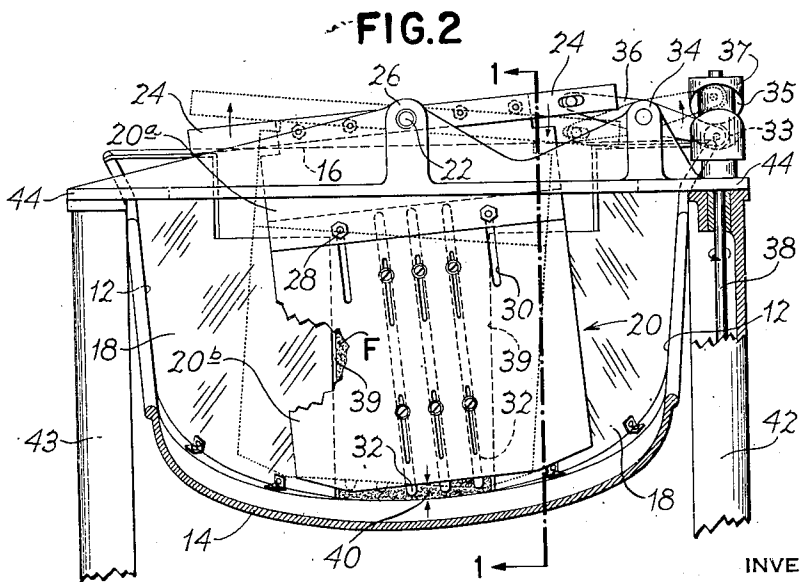
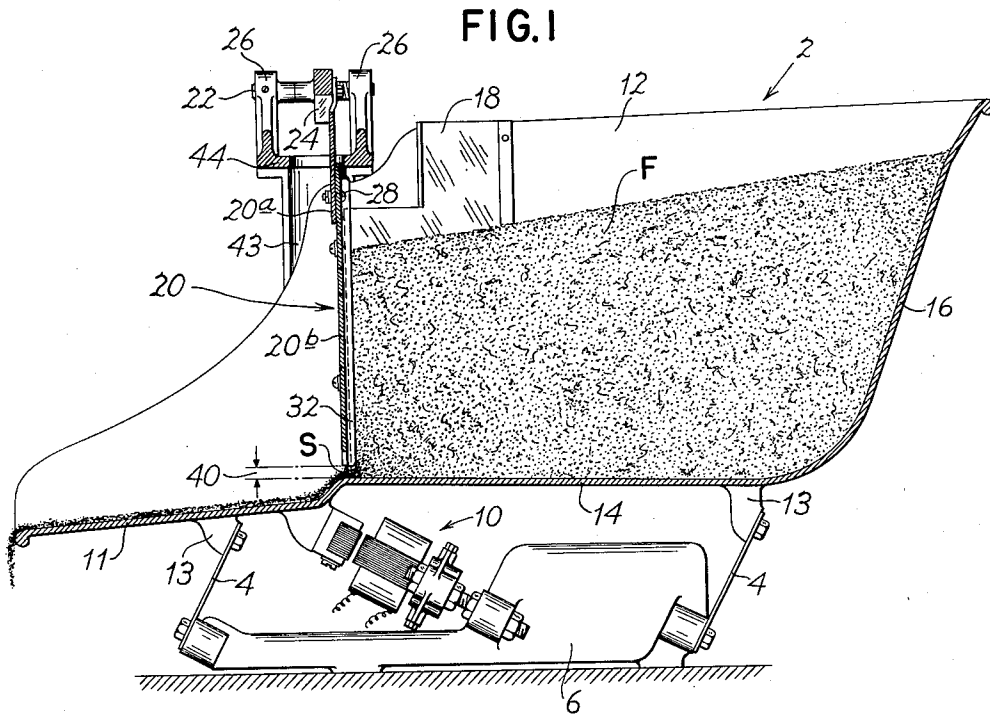
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2,619,090

FILLER FEED FOR CIGAR MACHINES

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FILLER FEED FOR CIGAR MACHINES

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5 Claims. (Cl. 131-108)

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This invention relates to tobacco feeding mechanism and more particularly to an improvement in devices for feeding short filler cigar tobacco of a very small size.

Vibrating hoppers which are provided with side and rear walls and a substantially horizontal bottom, such as is described in Durning 2,311,373, and alternately swinging rakes which control the delivery of the tobacco, have proven quite satisfactory in feeding medium and large size short filler tobacco. However, when very small short filler is used the rakes in themselves fail to sufficiently retain the tobacco and an uncontrolled flow sometimes results. In an effort to prevent this, use has been made of a stationary plate inserted behind the rakes to present a small aperture between the floor of the hopper and the lower edges of said stationary plate as shown in said Durning patent, thereby substantially limiting and controlling the flow. However, with very small short filler this stationary plate tends to result in the filler "bridging" between the stationary plate and the back of the hopper, thereby affecting unfavorably the even flow of filler.

It is, therefore, an object of my invention to provide mechanism for feeding very small short filler tobacco wherein means are furnished to prevent both an uncontrolled flow of tobacco and a "bridging" of the tobacco in the hopper.

My invention also consists in the provision of a hopper provided with a substantially horizontal tobacco supporting and feeding surface and converging side walls and a moving ribbed member which co-acts with said walls in controlling the feed of tobacco along the feeding surface.

These and other objects not specifically mentioned in my invention consist of certain combinations and constructions which will be hereinafter fully described and then set forth in the claims hereunto appended.

In the accompanying drawings which form a part of this specification and where the several reference characters designate the same or like elements,

Fig. 1 is a sectional side elevation showing the preferred form of my invention for feeding short filler tobacco, taken on line 1-1 of Fig. 2; and

Fig. 2 is an end elevation, partially sectional, of the same.

With reference to the drawings, the improved tobacco filler feed consists of a trough shaped hopper 2 similar in design and construction as the one disclosed in the Durning Patent No. 2,311,373, wherein said hopper is provided with vertical side walls 12, a rear wall 16 and a bot-

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tom tobacco supporting surface 14 having a discharge section 11 onto which the tobacco is fed from the supply during feeding operation of the hopper. As illustrated in Figs. 1 and 2 the bottom surface 14 and discharge section 11 are joined by a step or shoulder formed integrally therewith. Hopper 2 is resiliently supported by means of leaf springs 4 bolted to lugs 13 projecting from the bottom of the hopper (Fig. 1) and is intermittently vibrated by means of an electric vibrator 10 which is adjustably mounted on a base block 6 suitably attached to the frame of the cigar machine (not shown).

In order to provide a mechanism for feeding very small short filler tobacco, there is provided in said hopper, guide plates which substantially reduce the width of the mouth or open end of the hopper. Therefore, the mouth of the hopper 2 is reduced by two vertical tobacco guide plates 18 secured to the side and bottom walls of said hopper and converging toward the outlet of the hopper and to guide the tobacco through a relatively narrow aperture 39 on the mouth or discharge end of the hopper, with which the plate 20, which controls the delivery of tobacco, coacts.

Extending upwardly of the frame of the machine are pedestals 42 and 43 supporting at their upper ends a bridge 44. At the center of said bridge are vertical bosses 26, to which is rigidly secured a horizontal stud 22. The plate 20 is secured on rocker arm 24 pivoted on said stud 22 so that it will oscillate across said aperture 39. This plate 20 is composed of two parts 20a and 20b. Part 20b is adjustably mounted on part 20a by means of bolts 28 and slots 30. In this manner, a desired opening 40 may be obtained between the bottom of part 20b of plate 20 and horizontal bottom tobacco feeding surface 14. The lower edge of part 20b is suitably shaped to allow the pendulum-like swing of plate 20. On the inner surface of plate 20 there is adjustably mounted a plurality of rods or tines 32 which are preferably so adjusted as to extend beyond the bottom edge of plate 20 with only a slight tolerance between said rods 32 and the horizontal bottom tobacco feeding surface 14.

On bosses 34 of bridge 44 there is pivotally mounted a rocker 36. One end of rocker 36 is loosely secured at one end of arm 24. The other end of rocker 36 carries a cam roller 33 engaging a track 35 of a cam 37 secured to a vertical driving shaft 38 running through pedestal 42 and connected by suitable means to the main drive of the cigar machine.

In operation, hopper 2 is vibrated by vibrator

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10 to feed the small scraps of filler tobacco F in stream S through the mouth of the hopper. Simultaneously, tines 32 pass transversely to the stream S at the aperture 40 to break up small lumps and thereby secure an even flow of tobacco. The oscillating motion of plate 20, particularly in view of the ribbed effect of the tines 32 secured to it, agitates adjacent tobacco sufficiently to prevent "bridging."

I have found that this combination of plate and tines provide with very short filler tobacco an even flow superior to that heretofore possible with this type of tobacco.

I wish it understood that various changes in formation, proportion and manner of details and construction may be resorted to within the scope of the appended claims, and that I do not wish to limit myself to the specific design and construction above described. Having thus described my invention, what I claim is:

1. The combination with a vibratory feed hopper suitable for use in a short filler cigar machine; of converging guide plates constricting the discharge mouth of said hopper; a horizontal rocker support; a retaining plate attached thereto and co-acting with the edges of said guide plates so as to effectively seal the greater part of said mouth but allowing material to pass beneath said plate; a plurality of vertical tines adjustably attached to said plate, said tines extending from substantially the upper edge of said plate to below and adjacent the lower edge thereof and in spaced relation to each other; and means for reciprocating said rocker.

2. In a vibratory tobacco feed, the combination with a hopper open at one end and provided with an upstanding back, connecting side walls and a substantially horizontal bottom to support a supply of tobacco provided with a discharge section adjacent the open end, a substantially vertical tobacco retaining plate positioned in said tobacco section to confine the supply of tobacco in the hopper and spaced from said bottom to form an aperture through which tobacco may be fed from said supply; a plurality of tines attached to said retaining plate on the side adjacent the supply of tobacco and extending from a point thereon closely adjacent the upper edges of the adjacent side wall of the hopper to and below the lower edge of the plate; and means for oscillating said plate and tines to provide an even flow of tobacco.

3. In a vibratory hopper provided with an upstanding back, connecting side walls and a substantially horizontal bottom provided with a discharge section, a combination of guide plates angularly secured to the side walls near the discharge section of said hopper to form with said

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bottom a reduced mouth; an oscillating retaining plate suspended across said mouth thereby effectively sealing said mouth except at the lower edge of said retaining plate; and a plurality of tines attached to the inside face of said plate, said tines extending from substantially the upper edge of said plate to adjacent the lower edge thereof and in spaced relation to each other.

4. In a vibratory tobacco feed open at one end and having an upstanding back, connecting side walls and a substantially horizontal bottom provided with a discharge section adjacent the open end, an oscillating retaining plate suspended across said open end, the lower end of said plate being spaced from said bottom to form therewith a mouth for said hopper; projections of substantial length on the inside face of said plate extending substantially from top to bottom thereof to engage tobacco at the mouth of the hopper; and means for transversely oscillating said plate to provide an even flow of tobacco.

5. In a vibratory tobacco feed open at one end and having an upstanding back, connecting side walls and a substantially horizontal bottom provided with a discharge section adjacent the open end, an oscillating retaining plate suspended across said open end, the lower end of said plate being spaced from said bottom to form therewith a mouth for said hopper; the inner one of the faces of said plate having closely related thereto projections of substantial length extending along said face from substantially the top thereof to and beyond the bottom of said plate to engage tobacco at the mouth of said hopper; and means for transversely oscillating said plate and said projections to provide an even flow of tobacco.

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The following references are of record in the file of this patent:

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