Feb. 1, 1966 J. A. DREHER 3,232,296

CIGAR MANUFACTURE WITH TWO SEPARATE FILLERS

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FIG. 2

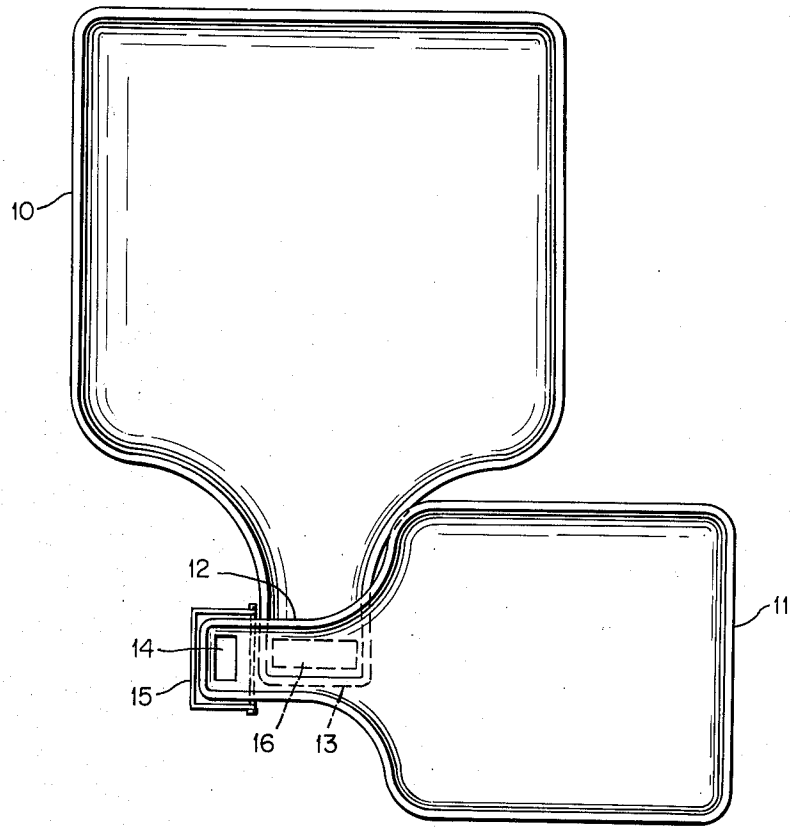


FIG. 1

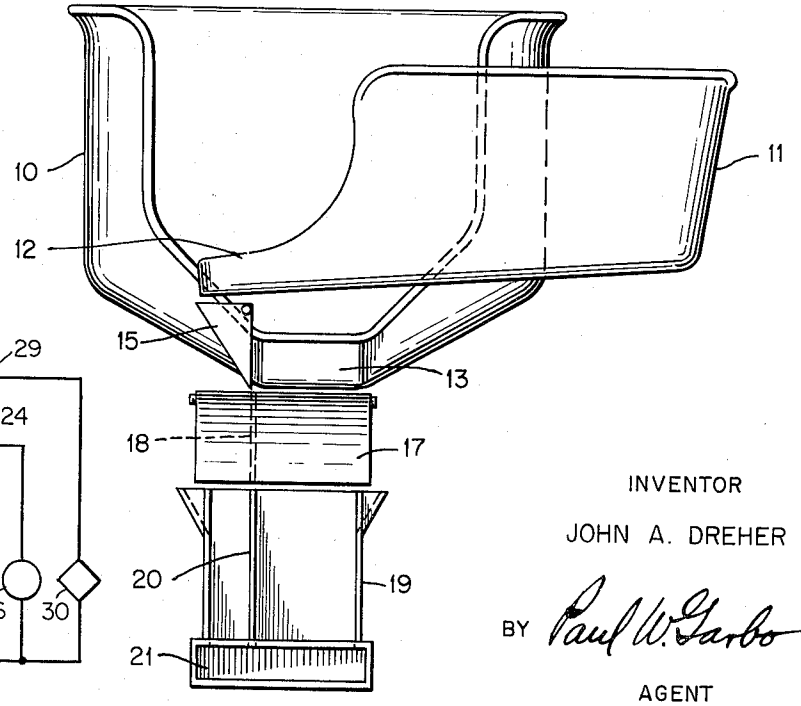
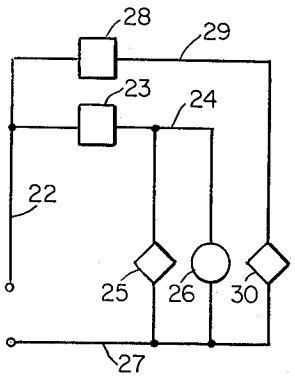


FIG. 3



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CIGAR MANUFACTURE WITH TWO SEPARATE FILLERS

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This invention relates to a method and apparatus for feeding filler tobacco to a cigar-making machine and more particularly for feeding two different filler tobaccos so that the cigars made therefrom will be filled with one filler tobacco from one end of each cigar to an intermediate point in the length thereof and with the other filler tobacco from the opposite end of each cigar to the intermediate point.

In the old art of cigar manufacture, it has long been proposed that cigars be made with different filler tobaccos in the opposite end portions of the cigars. Thus, U.S. Patent 190,849 of 1877 discloses a cigar made with Havana filler tobacco but in which the head end of the cigar contains cheaper Connecticut filler tobacco. This proposal was not difficult to carry out when cigars were made by hand but in recent decades the large bulk of cigar production has increasingly been shifted to cigar-making machines which can only handle one filler tobacco for the entire cigar made thereon.

The continuing desire for making cigars with different filler tobaccos in different portions of each cigar is evident in recent British Patent 908,439 wherein tobaccos of the basic group are proposed as cigar filler in the burning end portion of cigars while tobaccos of the acid group are suggested as preferable filler in the suction end portion. In spite of the long desire to make cigars with different filler tobaccos in the opposite end portions of cigars for reasons of economy or smoking quality or both, no method or apparatus for feeding simultaneously two different filler tobaccos to a cigar-making machine has been heretofore devised and found successful in commercial practice. Thus, U.S. Patent 2,329,169 discloses an apparatus for feeding two filler tobaccos to a cigar-making machine, which comprises an endless chain carrying fingers or pushers at spaced intervals to feed one filler tobacco through a chamber and a plunger moving through the chamber to push therethrough another filler tobacco. This proposal was never used successfully in commercial practice undoubtedly for several reasons including lack of simplicity and reliability.

A principal object of this invention is to achieve in a commercially practical way the feeding of different filler tobaccos to cigar-making machines for the production of cigars with the different filler tobaccos disposed in the opposite end portions of the cigars.

The objects and advantages of the invention will be evident from the detailed description which follows.

In accordance with this invention, the feeding of two different filler tobaccos to a cigar-making machine so as to form cigars with one filler tobacco in one end portion of each cigar and the other filler tobacco in the opposite end portion is simply accomplished by pouring one filler tobacco on to a weighing scale until the scale is tipped at a predetermined weight corresponding to the desired end portion of the cigar that is to be occupied by that filler tobacco, dumping the predetermined weight of that filler tobacco on to another scale and pouring the other filler tobacco on to said other scale substantially without causing mixing of the two filler tobaccos until said other scale is tipped at a predetermined weight corresponding to the desired total filler content of each cigar, transferring the total weight of the two filler tobaccos without substantial mixing from said other scale to the compression chamber for cigar filler in a cigar-making machine, and thence converting the cigar filler having the two different filler tobaccos disposed as contiguous masses into a cigar by the conventional operation of the cigar-making machine. In this simple way, each of the two filler tobaccos will occupy an opposite end portion of the finished cigar and the two filler tobaccos will abut one another at any desired point along the length of the cigar. The proportioning of the two filler tobaccos is clearly controlled by setting the weight of filler tobacco charged on the first scale in the desired relation to the total weight of both filler tobaccos charged on the second scale. Generally, the two filler tobaccos are used in unequal proportions and the filler tobacco selected for the minor part of the total cigar filler is preferably weighed on the first scale.

In discussing the use of two different filler tobaccos as contiguous masses forming the filler of a cigar, it is evident that each filler tobacco may be a single type of tobacco or a blend of two or more types of tobacco. For instance, Pennsylvania tobacco may be chosen as the filler tobacco to occupy a minor end portion of the cigar that enters the smoker's mouth while a fine blend of imported tobaccos may be used as the other filler tobacco in the major end portion of the cigar which is burned during smoking.

Since cigar-making machines are conventionally equipped with means for feeding a single filler tobacco, a more detailed description of the invention will for simplicity be set forth in terms of an existing cigar-making machine and the supplemental equipment required to obtained the desired results of this invention. As a specific example of a cigar-making machine, the well-known model No. 2–70 manufactured by American Machine & Foundry Company will be selected. For the purpose of this invention, the essential structure of model No. 2–70 is disclosed in U.S. Patent 2,306,381 showing a vibratable hopper for short filler tobacco and a weighing scale associated therewith. Details of these units as well as auxiliary units such as oscillating rakes in the hopper are also given in several other patents, e.g., U.S. Patent 2,311,373. For the purpose of this invention, it suffices to add to model No. 2–70 a duplicate or supplemental feeding apparatus for short filler tobacco comprising a vibratable hopper and weighing scale together with their usual auxiliaries, the supplemental feeding apparatus being so positioned that filler tobacco weighed on the supplemental scale discharges therefrom on to the main weighing scale of the cigar-making machine.

The operation of this illustrative embodiment of the invention will now be explained in relation to the accompanying drawings of which:

FIGURE 1 is a schematic elevational view of the two hoppers and associated mechanical units used to feed two different filler tobaccos to the cigar-making machine, looking into the discharge spout of the main hopper;

FIGURE 2 is a schematic plan view of the same two hoppers, the units below the unit numbered 15 in FIGURE 1 being omitted to simplify FIGURE 2 and make it clearer; and

FIGURE 3 is a wiring diagram of the electrical system associated with the mechanical units used in this invention.

In FIGURES 1 and 2, main vibratable hopper 10 is positioned as usual on the cigar-making machine (not shown) and supplemental vibratable hopper 11 is placed at right angles to hopper 10 and with its discharge spout 12 at a higher level than that of discharge spout 13 of hopper 10. Spout 12 of supplemental hopper 11 has slotted opening 14 through which filler tobacco falls into supplemental weighing scale 15 when hopper 11 is vibrated. Likewise, spout 13 of main hopper 10 has slotted

opening 16 through which another filler tobacco falls into main weighing scale 17. It is preferred to place a vertical baffle 18 in the pan of scale 17 at an intermediate point in the length of the scale pan corresponding to the desired intermediate point in the length of the cigar at which the two filler tobaccos come together. The major part of the cigar filler is supplied by main hopper 10 and the filler tobacco falling through opening 16 in spout 13 drops into the volumetrically larger space of scale 17 while the minor part of the cigar filler supplied by supplemental hopper 11 and first weighed on scale 15 is discharged into the volumetrically smaller space of scale 17. The two different filler tobaccos on opposite sides of baffle 18 are then dropped from scale 17 into vertical chute 19 which also, preferably, has a dividing baffle 20 aligned with baffle 18 in scale 17 to prevent mixing of the two different filler tobaccos while they are being dropped into compression chamber 21.

Once in chamber 21, the two masses of different filler tobaccos are brought together, fusing or meshing together at the interface between the two masses but not becoming materially admixed with one another. The thus meshed filler tobaccos are then moved to the rolling apron and all the other known parts of the cigar-making machine until a finished cigar has been formed therefrom. The minor portion of the filler tobacco supplied by supplemental hopper 11 and scale 15 occupies the head end portion of the finished cigar whereas the major portion of the other filler tobacco supplied by main hopper 10 and scale 17 fills the larger smoking end portion of the cigar.

The operation of the apparatus just described, after it has been in progress, will now be explained starting at the moment when compression chamber 21 calls for filler tobacco. Mechanical means of the cigar-making machine at that moment causes the weighed filler tobaccos in main scale 17 to drop into chute 19 which with baffle 20 separately guides the two different filler tobaccos to compression chamber 21. Empty main scale 17 moves upwardly and activates a main mercury switch 23 (see FIGURE 3 for electrical components) which controls a supplemental solenoid 26 that opens supplemental scale 15 thereby causing the weighed minor portion of filler tobacco therein to drop into the smaller space in main scale 17 and simultaneously places the main vibrator 25 of main hopper 10 in operation until the predetermined weight of the major portion of the other filler tobacco is fed by main hopper 10 to the larger space in main scale 17.

The electrical system for controlling the feeding of filler tobacco is not a part of this invention since it is well-known in the art as shown in FIGURE 16 of U.S. Patent 2,306,381. Supplemental solenoid 26 is a standard pull-type model that is mounted on the frame of the cigar-making machine with its arm vertically positioned near supplemental scale 15. When supplemental scale 15 contains its predetermined amount of filler tobacco, it comes to rest in a downward position. The arm of supplemental solenoid 26 is connected to a pivoted trip lever positioned to engage a pin on the inclined face of supplemental scale 15. When supplemental solenoid 26 is energized, its arm is pulled down and by the action of the pivoted trip lever supplemental scale 15 is emptied while it is in its lowered position. While those skilled in the art may alternatively select any of several known devices for emptying a scale, the solenoid-operated trip lever just described as an example is clearly illustrated by solenoid 68 and trip lever 66 in FIG. 1 of U.S. Patent 2,676,733.

As soon as the predetermined weight of filler tobacco trips main scale 17, the aforesaid main mercury switch 23 is deactivated and the supplemental solenoid 26 controlled thereby is deenergized and so permits empty supplemental scale 15 to move upwardly by the action of its counterweight while the main vibrator 25 of main hopper 10 stops operating. The upward movement of supplemental scale 15 actuates a supplemental microswitch 28 which operates the supplemental vibrator 30 of supplemental hopper 11. Supplemental microswitch 28 is attached to the frame of the cigar-making machine adjacent to one end of the scale shaft from which supplemental scale 15 is pivotally suspended. A mechanical linkage attached to this end of the scale shaft in a cam-like manner operates supplemental micro-switch 28. When supplemental scale 15 is empty, it moves upwardly by the action of its counterweight and this movement closes supplemental micro-switch 28. As soon as the predetermined weight of the minor portion of filler tobacco discharging from supplemental hopper 11 trips supplemental scale 15, the supplemental micro-switch 28 is opened by the downward movement of supplemental scale 15 and thereby the operation of the supplemental vibrator 30 of supplemental hopper 11 is stopped. The action of supplemental micro-switch 28 is analogous to the action of mercury switch 91 of U.S. Patent 2,306,381. At this point, both scales 15 and 17 hold their respective predetermined weights of filler tobaccos, and the whole cycle of operation is ready to be repeated as soon as compression chamber 21 again calls for filler tobaco.

The main mercury switch 23 and the main vibrator 25 of main hopper 10 are found on model No. 2–70. The supplemental solenoid 26 controlled by this main mercury switch 23 as well as the supplemental micro-switch 28 and its associated supplemental vibrator 30 are added to the cigar-making machine to modify it pursuant to this invention. The components of the electrical system which have been mentioned hereinbefore are schematically shown in the simplified wiring diagram of FIGURE 3. Electric current flows through wire 22 to main mercury switch 23 (when it is closed), wire 24, simultaneously through main vibrator 25 and supplemental solenoid 26, to wire 27. When this circuit is not operative (switch 23 being open), the electric current flows through wire 22 to supplemental micro-switch 28 (when it is closed), wire 29, through supplemental vibrator 30, to wire 27.

The view presented schematically in FIGURE 1 is as it would appear to a person laying wrappers at a so-called left-hand machine; in the left-hand machine, the finished cigars discharged in front of the person laying wrappers would have their head end portions on the left in FIGURE 1 and the filler tobacco in these head end portions will have been supplied by supplemental hopper 11. A mirror image of FIGURE 1 as well as FIGURE 2 corresponds to the schematic arrangement of the apparatus of this invention on a right-hand machine (model No. 2–70); in such machine, the cigars discharge with their heads on the right as observed by the person laying wrappers and, again, the cigar heads will contain the filler tobacco fed by supplemental hopper 11.

As is customary in the operation of cigar-making machines, main scale 17 may be set to be tripped when a low multiple, such as two, three or four, of the weight of filler tobacco for one cigar enters this scale. Accordingly, for this invention, the weight of filler tobacco discharged from supplemental scale 15 to main scale 17 may be set for a corresponding multiple so that the ratio of the total weight of filler tobacco that trips supplemental scale 15 to the total weight of filler tobacco from main hopper 10 is the same as the ratio of the weight of the first-mentioned filler tobacco in the head end portion of one cigar to the weight of the second-mentioned filler tobacco in the opposite end portion of the cigar.

Applying the invention in the manufacture of a specific perfecto-shape cigar measuring $4\frac{13}{16}$ inches in length and $\frac{41}{64}$ inch in diameter, the two filler tobaccos are weighed in the ratio of 1 weight part of filler tobacco from supplemental hopper 11 to 2.57 weight parts of filler tobacco from main hopper 10 to fill, respectively, a head end portion of $1\frac{1}{4}$ inches long and an opposite end portion of $3\frac{9}{16}$ inches long. The ratio of the lengths of the two

end portions of the cigar is somewhat different from the ratio of the weights of the two filler tobaccos in those two end portions because the two filler tobaccos do not have the same apparent density.

From the foregoing description of the invention it is apparent that by the simple addition of a supplemental hopper, a supplemental weighing scale and divider or baffle placed within the main weighing scale and chute of the cigar-making machine the manufacture of cigars with different filler tobaccos in contiguous end portions of the cigars has been made a commercial reality and success.

Those skilled in the art will readily visualize changes and modifications that may be made in the embodiment of the invention described and illustrated without departing from the spirit and scope of the invention as defined in the appended claims. Hence, the foregoing description and the drawings should be interpreted as illustrative only and not as limitative of the invention.

What is claimed is:

1. In the method of manufacturing cigars wherein a short filler tobacco is fed from a hopper into a weighing scale and the weighed short filler tobacco is thence transferred to the compression chamber of a cigar-making machine, the combination therewith of feeding a second short filler tobacco from a second hopper into a second weighing scale, transferring the weighed second short filler tobacco to an end portion of the first-mentioned weighing scale, feeding the first-mentioned short filler tobacco into the other end portion of the first-mentioned weighing scale, and transferring the weighed first-mentioned short filler tobacco and the weighed second short filler tobacco from the two said end portions of the first-mentioned weighing scale substantially without mixing to said compression chamber.

2. The method of claim 1 wherein the weighed amount of the second short filler tobacco is less than the weighed amount of the first-mentioned short filler tobacco.

3. The method of claim 2 wherein the weighed amount of the second short filler tobacco is transferred to the compression chamber so that said second short filler tobacco will occupy the head end portion of the cigars manufactured therewith.

4. In a cigar-making machine having a main hopper for feeding a short filler tobacco, a main weighing scale for said short filler tobacco fed thereto by said main hopper, and transfer means for conveying the weighed short filler tobacco from said main scale to a compression chamber, the combination therewith of a supplemental hopper for feeding another short filler tobacco, a supplemental weighing scale for said other short filler tobacco fed thereto by said supplemental hopper, said supplemental scale being arranged to discharge the weighed other short filler tobacco into one end portion of said main scale, a divider in said main scale separating said one end portion from the other end portion which is disposed to receive said short filler tobacco fed by said main hopper, and a baffle in said transfer means aligned with said divider so that the weighed short filler tobacco and the weighed other short filler tobacco may be separately conveyed from said main scale to said compression chamber.

5. The machine of claim 4 wherein the supplemental hopper and supplemental weighing scale are smaller than the main hopper and main weighing scale, respectively, the divider in said main scale separates one minor end portion from the other major end portion, and said supplemental scale is arranged to discharge into said minor end portion of said main scale.

References Cited by the Examiner

UNITED STATES PATENTS

391,976	10/1888	Kitzmiller	131—39
1,822,446	9/1931	Martin et al.	177—70 X
2,306,381	12/1942	Durning	131—22
2,329,169	9/1943	Wheeler	131—81
2,398,643	4/1946	Jerome	177—70
2,873,955	2/1959	Sauer	177—70 X

FOREIGN PATENTS

584,897	9/1933	Germany.

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