

July 24, 1934.

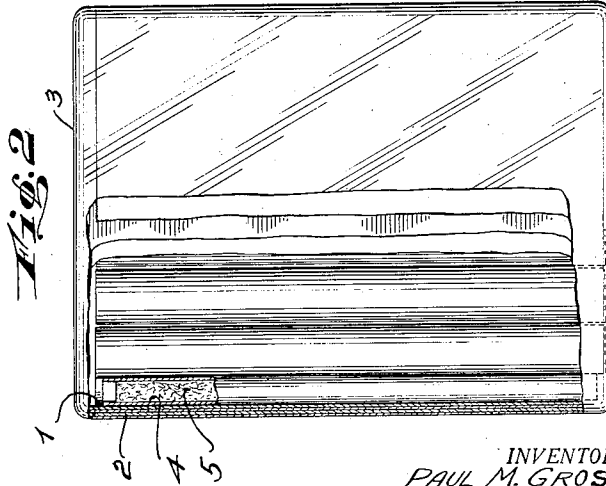
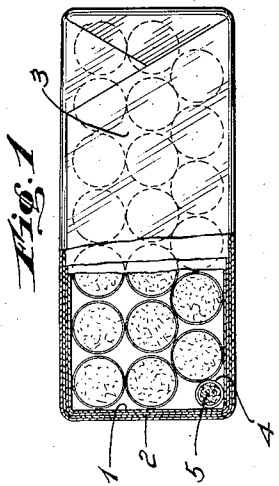
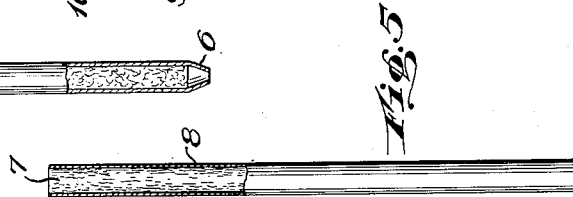
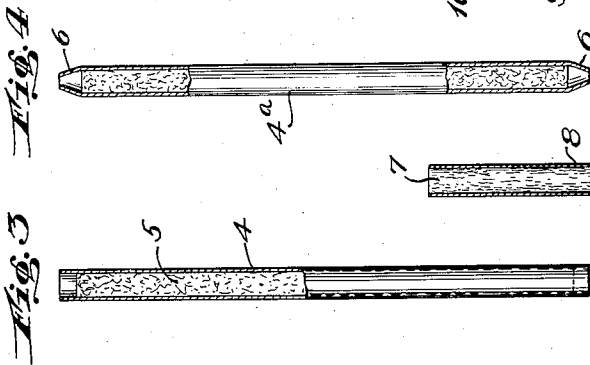
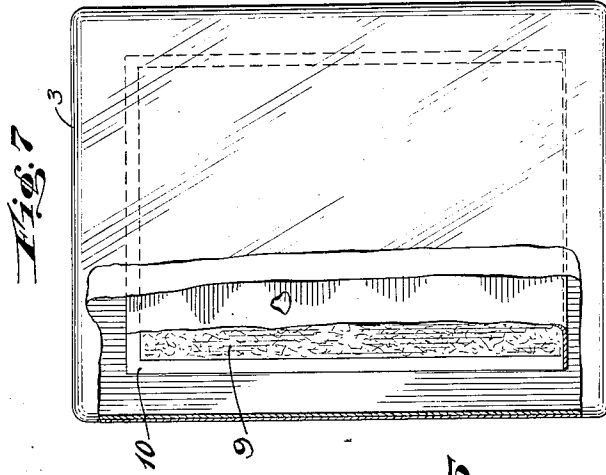
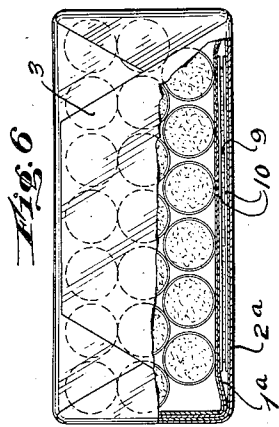
P. M. GROSS ET AL

1,967,554

METHOD OF MANUFACTURING AND PACKAGING CIGARETTES

Filed July 15, 1931

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 10

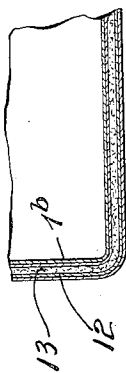


Fig. 11

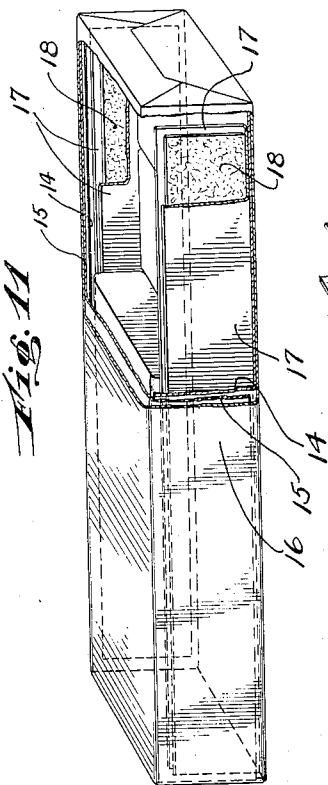


Fig. 12

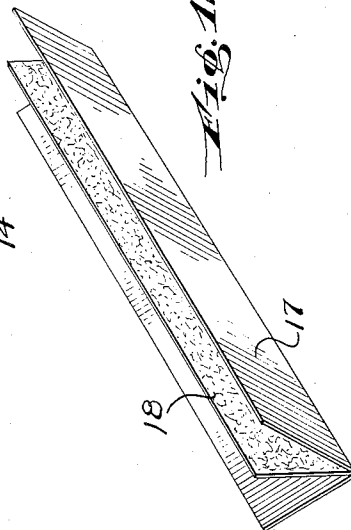


Fig. 8

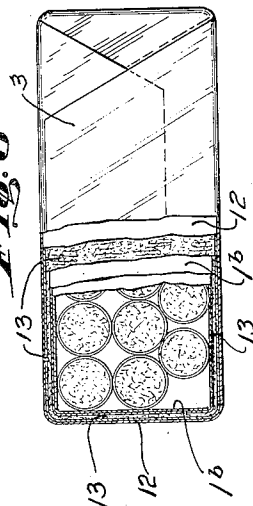
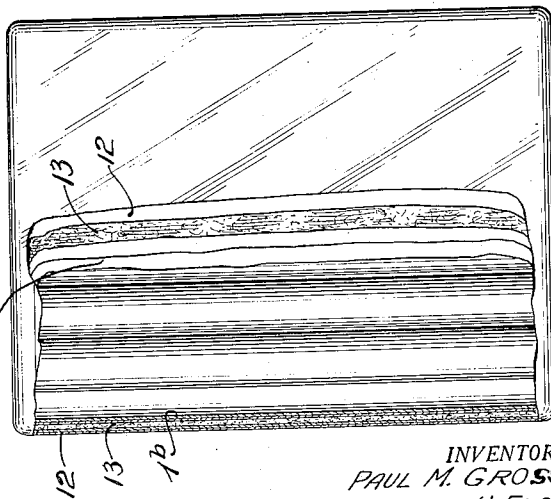


Fig. 9



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UNITED STATES PATENT OFFICE

1,967,554

METHOD OF MANUFACTURING AND PACKAGING CIGARETTES

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Application July 15, 1931, Serial No. 550,978

5 Claims. (Cl. 131—30)

Our present invention relates generally to the manufacture of cigarettes and more particularly to a method of increasing the moisture content of tobacco in manufactured and packaged cigarettes, and to an improved cigarette package and carton of cigarettes.

It is well known in the art that practically all of the popular brands of paper-wrapped cigarettes now upon the market are made by what are known as "continuous rod" cigarette machines. Such machines are usually equipped with an automatic tobacco feed mechanism embodying among other things one or more co-operating toothed drums or cylinders which operate to comb out the shredded tobacco and shower it in a stream-like formation onto the travelling paper wrapper which is then folded or rolled about the tobacco and its edges overlapped and pasted to form the finished cigarettes.

We have discovered that the automatic tobacco feed mechanisms referred to operate best and feed the tobacco more evenly when the tobacco has a relatively low moisture content, as, for instance, a moisture content of approximately 9 or 10% by weight, but cigarettes smoke, taste and keep better when the tobacco has a moisture content of approximately 12%.

For the best smoking results, cigarettes should be made firm and with a uniform distribution of tobacco containing about 3% more moisture than it is possible to operate efficiently through the modern cigarette-making machines.

At the moisture content which is ideal for the best smoking results, the prepared tobacco is more or less gummy and very difficult to run thru the modern cigarette-making machines. Cigarettes made from tobacco of the best moisture content for smoking, as, for instance, a moisture content of about 12%, are more or less irregular in tobacco distribution and weight, having alternate relatively hard lumps and soft spots through their length. This undesirable physical condition produces some cigarettes which are difficult to draw, whereas others allow so-called "channeling" of smoke, improper filtration and unsatisfactory combustion and smoking effects. Furthermore cigarette tobaccos of this raised moisture content are not fluffy and elastic as they should be and when made into cigarettes by modern methods are usually soggy, expand irregularly, and make unsatisfactory smoking cigarettes.

From the above it will be clear that for the most efficient operation and the best smoking cigarettes, the cigarette should be manufactured

from tobacco having a moisture content producing a physical condition promoting the utmost fluffiness and elasticity of tobacco, and the ideal uniformity of tobacco filling within the cigarettes.

It is the object of the present invention to provide a method or process of manufacturing and packing cigarettes whereby the cigarettes may be made from tobaccos having a moisture content best suited to machine manufacture, and wherein the moisture content may be appropriately raised or increased after the cigarettes have been made and packed for shipment and sale.

A further object of the invention is to provide a novel cigarette package having enclosed therein a novel humidifying element carrying just sufficient moisture quantitatively to raise to the proper degree for smoking purposes the moisture content of the tobacco in the packaged cigarettes and no more.

A still further object of the invention is to provide a novel carton of packaged cigarettes having enclosed therein a novel humidifying element carrying just sufficient moisture quantitatively, and no more, to properly condition all the tobacco contained in the cigarettes of the different packages enclosed within the carton.

With these and other objects in view, the invention comprises the novel methods or processes and method or process steps, and the novel cigarette packages and carton herein described in detail and then more particularly pointed out in the appended claims.

In order to enable others skilled in the art to understand, make and use our invention we will now proceed to describe the same in detail in connection with the accompanying drawings, wherein,—

Figure 1 is a top plan view of a known form of cigarette package embodying our invention;

Figure 2 is a side elevation of the package shown in Fig. 1, with a portion of the wrapper broken away to show the moisture carrying insert;

Figure 3 is a longitudinal section of one form of insert;

Figure 4 is a similar view of a slightly modified form of insert;

Figure 5 is a longitudinal section of another form of insert;

Figure 6 is a top plan view, partly in section, of a cigarette package embodying another form of the invention;

Figure 7 is a side elevation, partly in section, of the package shown in Fig. 6;

Figure 8 is a top plan view, partly in section, of another embodiment of the invention;

5 Figure 9 is a side elevation of the package shown in Fig. 8, with a part of the outer wrapper broken away to expose the moisture carrying element;

Figure 10 is an enlarged section of a portion of the wall of the package illustrated in Fig. 8.

10 Figure 11 is a perspective view of a carton of cigarette packages showing our invention incorporated therein;

Figure 12 is a perspective view showing one form of carton insert made according to our invention.

15 In practicing the invention the cigarette tobacco, which is usually in shredded form, is treated in any of the well-known or approved ways to bring its moisture content to approximately 9 or 10% by weight, and the tobacco in this form is conveyed into any approved so-called
20 "continuous rod cigarette machine" and made into cigarettes. Such cigarettes, because of the reduced moisture content of the tobacco, will be found to be firm and uniformly filled, but not so
25 pleasing to the taste, when smoked, as they would be if the moisture content of the tobacco was increased, to, say, approximately 12%.

After the cigarettes have been so manufactured, a selected number as, for instance, 20, are immediately packed into a suitable container, such as a container of the so-called "cup" or "pouch" type, although we do not wish to be limited to this particular type of package as the invention may be employed in connection with other types.

35 The so-called "cup" or "pouch" package as illustrated in Figures 1 and 2 of the accompanying drawings, usually consist of an inner wrapper 1 of foil or paper, or both combined, and an outer wrapper 2 of relatively stiff paper, which is
40 folded into the form of a cup or pouch, one end of which is closed, and the other end open, and through which open end a portion of the inner wrapper of foil or foil and paper projects, after which such projecting portions of the inner wrapper are folded and closed or sealed as at 3, Fig. 1,
45 so that such folded and sealed end may be readily opened or torn away to gain access to the cigarettes within the package. Sometimes the packages are enclosed in an outer wrapper of glassine paper or cellophane, and our improved package
50 may or may not have such outer covering, as desired.

At present cigarette packages of the kind referred to are made by automatic machinery, and
55 in such machines a suitable number of cigarettes, such as are required for the particular package, are collected and then packed into the cups or pouches which are also formed by the machine. Sometimes the machines form the empty pouches and the collected cigarettes are first compressed
60 and then inserted en masse within the cups or pouches; and sometimes the wrappers or pouches are formed around the collected mass of cigarettes, and the open end of the cup or pouch is then closed by folding and sometimes by sealing the material of the inner wrapper at one end of the package as shown in Fig. 1.

According to our method we propose to select and assemble with the collected group of cigarettes to be packaged, a suitable humidifying element which may take any one of a number of forms that will hereafter appear, and these humidifying elements are of such a size and construction that they may be included within a cup or pouch package as now constructed and with-

out increasing the size thereof. And furthermore the construction of the humidifying element is such that there will be no danger of staining or discoloring the delicate cigarette wrapper paper, which would be very undesirable.

80 In Fig. 3 of the accompanying drawings we have illustrated one form of humidifying element or insert, which consists of a tubular casing 4, which may be conveniently made of water and moisture-proof material, such as wax paper of the type now usually employed for drinking straws, the tube being preferably flexible or yieldable so that it may readily conform to the cigarettes when compressed and packed in the cup or pouch package and without injuring the same.
85 The tube 4 is almost completely filled with a mass of absorbent material 5, such as blotting paper, or absorbent cotton or other absorbent material, which almost completely fills the tube except at the extreme ends thereof. We prefer to make the tubes slightly shorter than the cigarettes and to leave the ends of the tube unfilled so as to avoid any danger of the moisture contained in the absorbent material making direct contact with the delicate paper wrappers, such as would stain and
90 discolor them.

The dimensions of the tube 4 and the quantity of absorbent material and moisture carried thereby are so calculated and measured with reference to the quantity of tobacco contained in the group
95 of cigarettes within the package that there will be just sufficient humidifying air or moisture given off quantitatively to raise the moisture content of the tobacco within the package about 3%. In other words, if the cigarettes are made from tobacco having a moisture content of about 9%, this moisture content, after the cigarettes have been packaged with the humidifier, will be raised to about 12%, which will place them in the best condition for smoking purposes.

100 In Figures 1 and 2 we have shown the tubular humidifier located in one corner of the package, adjacent one row of the cigarettes, where there is ample space left because in packing cigarettes in cup or pouch packages there is usually one less
105 cigarette in one of the outer rows than there are in the other rows. It will be obvious of course that more than one humidifier may be inserted in each package if so desired.

110 In Figure 4 we have shown a humidifier like that illustrated in Figure 3 except that the ends of the tube 4a are partially closed by flattening or collapsing said ends as at 6. By this construction the rate of flow of the humid air from the open ends of the tube may be regulated or retarded.

115 Instead of making the humidifier from a collapsible tube such as shown in Figures 3 and 4, we may make them from a rod or cylinder 7 of porous material such as wood or any other porous composition coated as at 8, except at its ends, with a substance which is impervious to moisture. Humidifiers of this type may be saturated with water and inserted into the packages of cigarettes and sealed therein during the process of wrapping as described.

120 Humidifiers made according to our invention may have any convenient diameter or length, dependent upon how much moisture is to be introduced into the cigarettes, although the length of the humidifier should not exceed the length of the cigarettes in order to maintain the form, shape and size of the present conventional package.

125 While we have shown and described three forms

of cylindrical humidifiers, we do not wish to be limited to these particular constructions, as obviously other forms will quickly suggest themselves.

5 In Figs. 6 and 7 of the drawings we have shown a humidifier consisting of a thin rectangular sheet of blotting paper 9 arranged between two sheets of water or moisture-proof paper 10. This form of humidifier may be located in the package of 10 cigarettes between the inner foil wrapper 1a and the outer wrapper 2a. Such humidifiers may be made relatively flat and thin so as to occupy a space between the inner and the outer wrappers of the cup or pouch without unduly altering the 15 shape of the package.

In Figures 8 and 9 we have shown a slightly different form of the invention. In these figures the humidifier is formed by making the cup or pouch of a blank or label composed of a relatively semi-impermeable outer layer 12 having its inner face 20 backed or coated with an absorbent material 13, such as thin blotting paper or the like. In these figures the numeral 1b indicates the inner wrapper of foil or paper or both.

25 In every form of humidifier employed it will be understood that the humid air or moisture coming off from the moisture carrying element, is circulated throughout the cigarettes so that it will be readily absorbed or taken up by the tobacco, 30 but is prevented from escaping from the package by reason of the fact that the package is otherwise closed by the inner and outer wrappers, and care is exercised at all times to provide just sufficient moisture quantitatively to bring the 35 quantity of tobacco within the package to just the proper condition, and no more.

As a further embodiment of our invention instead of inserting the humidifiers directly into the individual packages themselves, we may insert 40 the humidifiers in a carton containing a number of packages of cigarettes, which cartons are afterwards enclosed within a wrapper sheet of waxed or paraffined paper or other water repellent material.

45 We have illustrated this form of invention in Figures 11 and 12 wherein we have shown a carton of ordinary form consisting of two telescoping box members 14 and 15, which when closed 50 may be wrapped within an outer wrapper 16 of waxed or paraffined paper or other moisture repelling material. In this form of our invention the humidifier consists of a sheet 17, of water-proof material, such as waxed or paraffined or otherwise treated paper, folded in V-form, as 55 shown in Figure 12, between the folds of which is located a sheet of blotting paper or other absorbent material 18. One or more humidifiers of this construction may be inserted within the carton between the inner wall or walls thereof and 60 the ends of the cigarette packages. The humidifiers are preferably of slightly less length than the over-all length of the carton proper so that the moisture from the saturated absorbent strip 18 may escape not only from the ends of the water-proof covering, but from the top thereof, and 65 since the carton is otherwise sealed, such moisture or humid air will ultimately find its way into the tobacco in the cigarette packages and raise the moisture content of the tobacco to the proper 70 degree.

So far as we are aware, we are the first in the art to provide for raising the moisture content of manufactured and packaged cigarettes by incorporating a humidifying element within the cigarette package during the formation of such

package so that the closed and sealed package will carry its own moisture which will raise the moisture content of the tobacco in the cigarettes after they have been manufactured from tobacco which carries a relatively low moisture content 80 best suited to cigarette manufacture.

We have demonstrated by numerous experiments extending over a long period of time that we can successfully increase the moisture content of packaged cigarettes in the manner herein described, and the invention is made entirely practicable by reason of the fact that the humidifiers 85 will be enclosed within the packages by the same machinery employed to make the packages, so that the only additional cost of cigarettes packaged according to our invention is the cost of the humidifier itself, and as all of the various forms of humidifiers disclosed herein are extremely simple and can be manufactured at small cost, the 90 added cost of the completed package is practically negligible. This is of very great importance from an economical standpoint because it is well known that the popular brands of cigarettes are now selling at a price that will not permit of any appreciable increase in the cost of manufacture 100 thereof.

Another important result made possible by our invention resides in the fact that the manufactured and packaged cigarettes may be readily 105 flavored with any suitable flavoring extract or easily medicated by any appropriate medicament. This is accomplished by saturating the absorbent material of the humidifiers with a flavoring extract or by a medicament so that the humid atmosphere given off by the humidifier with its 110 flavor or medicament will be quickly absorbed by the tobacco in the cigarettes. This is important because by our process or method the flavoring extract or the medicament need not be added to the tobacco itself when the cigarettes are manufactured. By adding the flavoring or the medicament after the cigarettes have been manufactured and packaged it will be apparent that only 115 such quantity of the total number of cigarettes manufactured may be treated as desired, and they may be treated at any time after their manufacture. 120

While we have herein illustrated and described what we now consider to be the preferred embodiment of our invention, we do not wish to be 125 understood as limiting ourselves to the constructions shown except as we may be limited by the appended claims, because further modifications of the present disclosures will readily suggest themselves to those skilled in the art after they 130 have become acquainted with our objects and purposes and the different disclosed ways of accomplishing the stated results.

What we claim is:—

1. In cigarette manufacture, the method which 135 consists in manufacturing cigarettes from tobacco having a relatively low moisture content, then immediately enclosing a group of the freshly made cigarettes so manufactured within a container, and thereafter raising the moisture content 140 of the tobacco in the packaged cigarettes by including in the container a humidifying element.

2. The herein described method of manufacturing and packaging cigarettes, which consists 145 in making cigarettes from tobacco having a relatively low moisture content, selecting a group of the freshly made cigarettes so manufactured and associating therewith a humidifying element and then promptly enclosing the cigarettes and 150

humidifying element within a closed container.

3. The herein described method of manufacturing and packaging cigarettes, which consists in making cigarettes from tobacco having a moisture content of approximately 9%, and immediately enclosing a freshly made group of such cigarettes, along with a humidifying element, within a closed container to increase the moisture content of the tobacco in the packaged cigarettes to approximately 12%.

4. The herein described method of raising the moisture content of and imparting a flavor to the tobacco in cigarettes, which consists in manufacturing cigarettes from tobacco having a relatively low moisture content, then immediately enclosing a number of the freshly made cigarettes so manufactured within a wrapper along with a humidifying element carrying a flavoring substance and a predetermined amount of moisture propor-

tioned to the quantity of tobacco in the cigarettes, and finally closing or sealing the package.

5. The method of manufacturing and packaging cigarettes to increase the moisture content of the tobacco in the packaged cigarettes, which consists in manufacturing cigarettes from shredded tobacco having a relatively low moisture content best suited to machine manufacture, immediately enclosing a group of the freshly made cigarettes so manufactured within a container, and associating with such group of cigarettes a humidifying element containing a measured quantity of moisture proportioned to the quantity of tobacco in the package, and then promptly closing the package whereby the moisture from the humidifying element may be taken up by the tobacco in the package.

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