

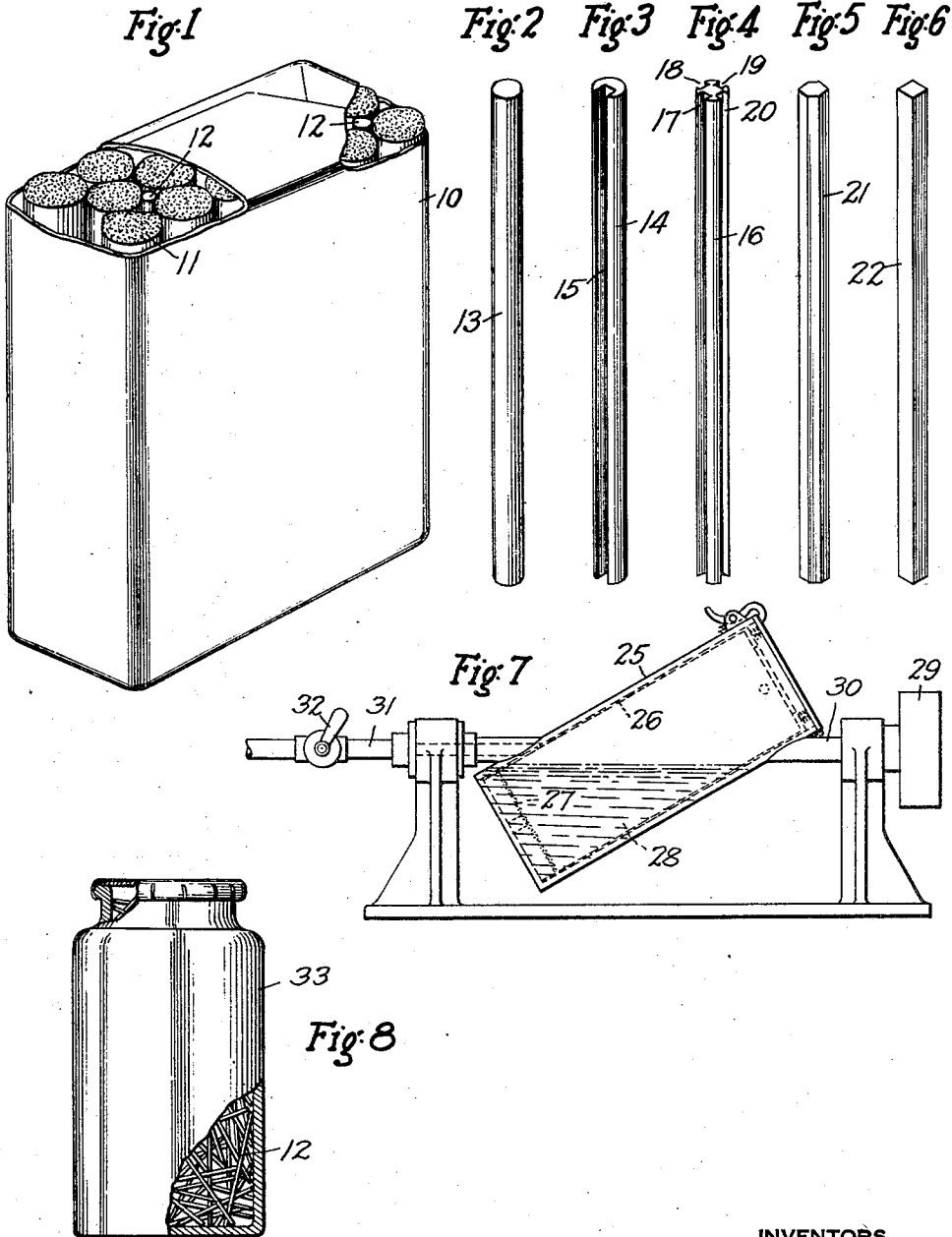
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CIGARETTE FLAVORING DEVICE AND PROCESS OF MAKING SAME

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CIGARETTE FLAVORING DEVICE AND PROCESS OF MAKING SAME

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This invention relates to articles for imparting desired flavors to cigarettes, and to the process of making such articles, and contemplates the provision of a member, in the form of a stick
5 made of absorbent material, and impregnated with a volatile flavoring material.

We have found that cigarettes while remaining in the usual packages in which they are sold, or when placed in cigarette cases, humidors or other
10 containers therefor, may be flavored by the user to the desired strength by inserting in the container "sticks" of suitable absorbent material such as wood, paper or the like, carrying flavoring ingredients, which are capable of sublimation, va-
15 porizing or evaporating at a predetermined rate.

Our invention therefore contemplates the production of such "sticks", and the impregnation thereof in such a manner that the flavoring material is prevented from crystallizing on the surface thereof, and is retained therein for a suffi-
20 ciently long period to effect the desired results while nevertheless imparting their flavor to the cigarettes by the sublimation or volatilization thereof.

The various objects of our invention will be clear from the description which follows, and from the drawing, in which,

Fig. 1 is a perspective view of a typical cigarette package, partly broken away to show the cigarettes therein, and to which our invention
30 has been applied.

Figs. 2 to 6 inclusive are perspective views of various forms of the flavoring "sticks".

Fig. 7 is an elevational view of an offset tumbler utilized in the step of impregnating the "sticks"
35 with the flavoring material.

Fig. 8 is a front view, partly in section, of an air-tight jar in which the moist "sticks", removed from the tumbler, are inserted for ageing
40 purposes.

In that practical embodiment of our invention which we have illustrated by way of example, the cigarette container may take the form of the usual paper package 10, in which cigarettes as 11
45 are customarily packed and sold. It will be understood, however, that the container may take the form of any well known cigarette container such as a cigarette box or case, humidor, or the like and which, therefore, need not be shown nor further described. In order to impart the desired flavor to the cigarettes 11, we prefer to insert therebetween suitable "sticks" as 12 which
50 have been impregnated with the volatile flavoring ingredients.

By the word "stick" as used herein, we mean an

elongated member of small diameter as compared to its length, and which is sufficiently rigid to permit the handling thereof and the insertion thereof into a package in which cigarettes are comparatively closely packed. We prefer to make
5 such sticks of medium or comparatively porous wood such as birch wood, bass wood or the like, and which wood is adapted to be given a smooth, finished surface. It will be understood, however, that we do not intend to limit our invention to
10 the particular kind of wood specified, since other woods and other materials, such as suitable cardboard or paper of sufficient rigidity and sufficiently absorbent may be substituted therefor. The sticks are made small enough to fit readily
15 into a cigarette package between the cigarettes, though it will be understood that for use in humidors or the like, the sticks may be made as large as may be found convenient or desirable.

As illustrated in Fig. 2, the stick 13 is made in
20 the form of a cylinder, preferably of somewhat less length than the height of the package into which it is to be inserted, and preferably of much smaller diameter than that of a cigarette. The stick 14 illustrated in Fig. 3 is provided with a
25 suitable rectangular groove 15 throughout the length thereof, in order to provide a greater area for penetration of the flavoring material than would be provided by the stick 13 in which there is no groove.

As shown in Fig. 4, the generally cylindrical stick 16 is provided with a plurality of grooves 17,
30 18, 19 and 20 to provide a maximum surface or lateral area on the stick, whereby a maximum quantity of the flavoring material may be absorbed thereby, and a maximum evaporating surface is provided. The stick 21 of Fig. 5 is shown in the form of a hexagonal prism, while the stick
35 22 of Fig. 6 is shown in the form of a square prism.

It will be understood, however, that the sticks may be made in a great variety of different forms and that we therefore do not intend to be understood as limiting ourselves to the specific forms
40 thereof shown and described.

After the sticks 12 have been given the desired form and finish, they are impregnated to the desired extent with the flavoring material. Toward this end, we prefer to employ a suitable
45 agitating device, such as the offset rotary tumbler as 25, into which the cylinder 26 is removably inserted. Said cylinder is provided with a perforated bottom 27, through which the liquid inserted into the tumbler may enter the cylinder. A quantity of un-impregnated sticks 12 are in-
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serted in the cylinder 26, and said cylinder in turn inserted into the tumbler 25 holding the liquid 28. On rotation of the tumbler through the pulley 29 and the shaft 30, the mass of sticks 5 is agitated in the liquid, and all parts thereof thoroughly coated and impregnated to some extent by the liquid.

If desired, the impregnation may be carried out under low pressure up to about five pounds per square inch, in order to hasten the process. In such cases, the pressure pipe 31, communicating with the interior of the tumbler 25, is utilized. The pressure may be supplied by compressed air or the like and is controlled by the valve 32. 15

The sticks need be agitated within the tumbler 25 only for a sufficient time to thoroughly coat the sticks and to begin the impregnating action. We have found that when no pressure is used, 20 agitation for about thirty to sixty minutes is sufficient. Where pressure is used, however, the time for impregnation may be materially reduced, that is, to about five to ten minutes, depending on the depth of the penetration or impregnation 25 desired.

After the tumbling step, the coated and partly impregnated sticks are removed from the tumbler in their moist condition and inserted into the air-tight jar 33. The jar is sealed with its content of moist sticks against the entrance or leakage of air thereinto or therefrom, and the sticks allowed to remain in the jar until all the excess liquid has been absorbed thereby and the sticks become dry. This may take from two 30 hours to twenty-four hours, depending on the absorptive properties of the sticks or the porosity thereof, and the type of impregnating liquid employed.

The sticks, when removed from the jar, are free of surface crystals, and present a smooth and dry surface from which the impregnating material cannot be removed by rubbing, manipulation or handling, though the impregnating material sublimates or evaporates therefrom with 45 sufficient rapidity to thoroughly flavor the cigarettes with which the sticks are surrounded, after they have been inserted into a cigarette container.

We prefer to use menthol as the principal flavoring ingredient. Any of the usual solvents for menthol cannot be used satisfactorily, however, since such solvents permit the menthol to crystallize on the surfaces of the sticks. The crystallized menthol falls off the sticks and is lost, so 55 that the sticks rapidly deteriorate and become ineffective. We have found that even adhesives of any kind, such as shellac or the like do not prevent the objectionable crystallization. However, if suitable oil is used in connection with the solvent, a stable solution of menthol is formed, and the undesirable crystallization of the menthol is prevented. 60

We have found that the impregnating material may consist of a comparatively small quantity of essential oils such as flavoring oils, aromatic oils, perfume oils and the like, but that the best type of flavoring material consists in the greater part of menthol crystals in a suitable solution, which solution is properly stabilized against too rapid 70 evaporation and against the crystallization of the menthol out of the solution. The essential oils in the impregnating solution may range from 1% to 5% by weight, the menthol crystals from 30% to 50%, and the solvents from 40% to 60%. 75 We also prefer to use a small quantity of dye,

sufficient to color the sticks with a light color during the impregnation process. For this purpose, any suitable dye may be used, such as for example, a certified anilin green. We have found the following proportions and ingredients effective for impregnating sticks to the desired extent to properly flavor cigarettes: 5

	Percent by weight	
Oil of lemon.....	1.25	10
Oil of lavender.....	0.9	
Oil of orange.....	0.45	
Oil of spearmint.....	0.45	
Menthol crystals.....	40.00	
Grain alcohol.....	36.50	15
Non-odorous fixed oil.....	20.00	
	100.00	

The menthol crystals are dissolved in either the alcohol or the fixed oil and dissolves perfectly therewith to form a perfect solution. The essential oils to the desired amount and the dye are then added, and the mass stirred to form the impregnating mixture. 20

Any type of oil may be used for the fixed oil above-mentioned such as linseed oil, cottonseed oil, castor oil or the like, but since said oils have an odor somewhat objectionable to some persons, we prefer to use a non-odorous oil such as liquid petrolatum or other mineral oil for the purpose 30 mentioned. The oil maintains the menthol in the desired stable solution and prevents the crystallization thereof on the surface of the stick, so as to permit proper and permanent impregnation of the sticks and not a mere coating of the surface alone. The oil has the further property of controlling the sublimation or evaporation of the menthol, a larger quantity increasing the time of evaporation, and hence prolongs the useful life of the sticks. The essential oils while 40 aiding toward these ends, also modifies the flavor of the menthol and removes the otherwise musty odor thereof, while the alcohol aids in maintaining the menthol solution in the oil and at the same time permits evaporation thereof to the desired extent to impart the flavor to the surrounding cigarettes. The proper balance between rapid and slow evaporation, without crystallization, is obtained by adjusting the proportions of alcohol and oil. 50

It will be seen that we have provided a simple, inexpensive and efficient article convenient and readily useful for imparting desired flavors to cigarettes while the cigarettes remain in the containers provided therefor. 55

It will further be seen that the user may permit the flavoring sticks to remain in the container for just sufficient time to impart the desired strength of flavor to the cigarettes and may then remove the sticks for later and repeated use. 60

It will further be seen that we have provided an improved method for impregnating the sticks in such a way that the flavoring materials do not crystallize out of the solution and are thereby retained in the interior of the stick for a sufficiently long time to permit repeated use thereof. Finally, it will be understood that we have provided an efficient article for the purposes described, and a simple and efficient process for producing the article, both well adapted to meet the severe requirements of practical use. 70

While we have shown and described certain specific embodiments of our invention, we do not wish to be understood as limiting ourselves 75

thereto, but desire to claim our invention as broadly as may be permitted by the state of the prior art and the scope of the appended claims.

We claim:

- 5 1. The combination with a cigarette package including cigarettes, of a wooden stick impregnated with a volatile tobacco flavoring ingredient and arranged among the cigarettes of the package.
- 10 2. A cigarette flavoring article comprising an elongated member of absorbent material of vegetable origin sufficiently rigid to permit the insertion thereof among and in contact with the cigarettes of a closely packed package of cigarettes, and a volatile flavoring ingredient with which the member is impregnated interiorly of the surface thereof.
- 15 3. A cigarette flavoring article comprising a stick of absorbent material impregnated with a solution of menthol, alcohol, a fixed oil, and an essential oil.
- 20 4. A cigarette flavoring article comprising a rigid member of absorbent material impregnated with a solution of menthol about 40%, alcohol about 36½%, a fixed oil about 20%, and essential oils about 3½%.
- 25 5. A cigarette flavoring article comprising a wooden stick impregnated with a solution of menthol in alcohol and oil.
- 30 6. A cigarette flavoring article comprising a dyed wooden stick impregnated with a solution of menthol in alcohol and a fixed oil, and about 35% of aromatic oils in said solution.
- 35 7. The process of making cigarette flavoring sticks comprising agitating said sticks in a solution of menthol, alcohol, a fixed oil, essential oils and a dye for a sufficient period to coat said sticks with the solution and to permit shallow impregnation of said sticks with the solution, then inserting the sticks while still moist into an
- air-tight container until said sticks become dry to the touch.
8. The process of making flavoring cigarette sticks comprising agitating a mass of said sticks in a solution of flavoring material, and ageing the moist sticks in an air-tight container until the unabsorbed solution thereon has been absorbed by the sticks.
9. The process of making cigarette flavoring sticks comprising agitating the sticks in a flavoring solution under pressure, removing the sticks from the solution, and ageing said sticks while moist in an air-tight container until the moist solution thereon has been absorbed by the sticks and said sticks have been impregnated with the solution.
- 10 10. The process of making cigarette flavoring sticks comprising agitating a quantity of said sticks in a solution of menthol 40%, grain alcohol 36½%, a non-odorous fixed oil 20%, and aromatic oils 3½%, removing the sticks while moist with the solution from the solution, and ageing said sticks while excluding air until the sticks become impregnated with the solution remaining thereon.
- 15 11. The process of stabilizing menthol against crystallization on the surface of an article impregnated thereby comprising dissolving the menthol in a fixed oil and alcohol before using the menthol for impregnation purposes.
- 20 12. The combination with a cigarette container including cigarettes of a rigid and substantially cylindrical member of vegetable origin, arranged among the cigarettes of the package and in contact with adjacent cigarettes and carrying a volatile tobacco flavoring ingredient including menthol.
- 25 30 35 40

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