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TOBACCO BLEACHING MEANS AND METHOD

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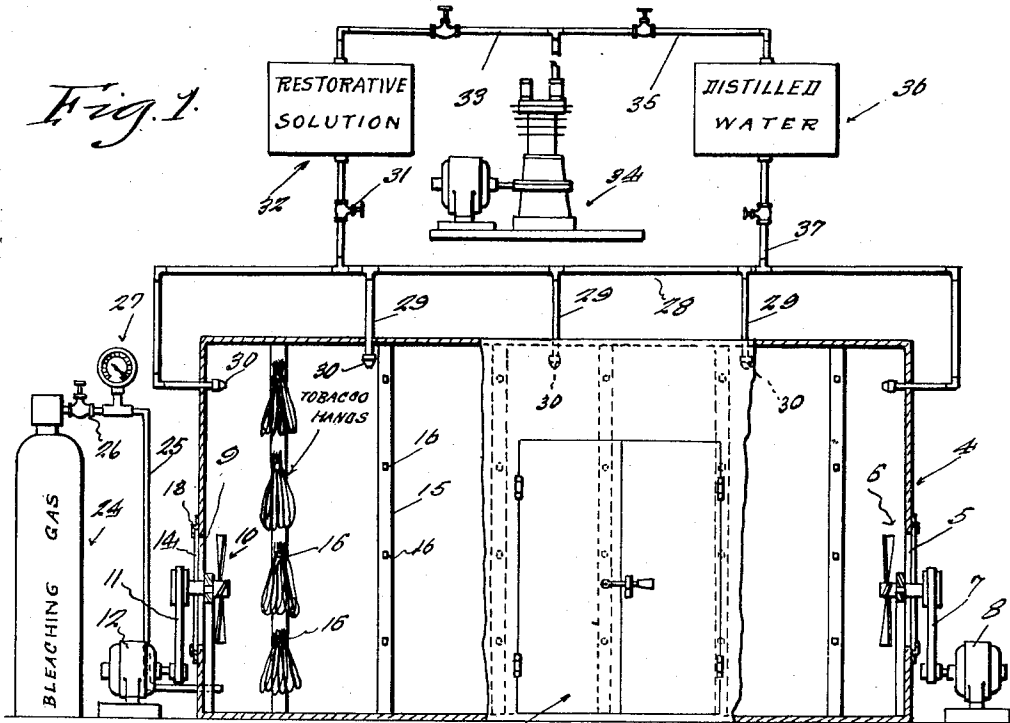


Fig. 1.

Fig. 2.

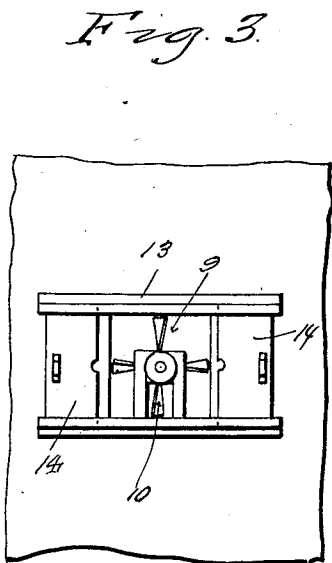
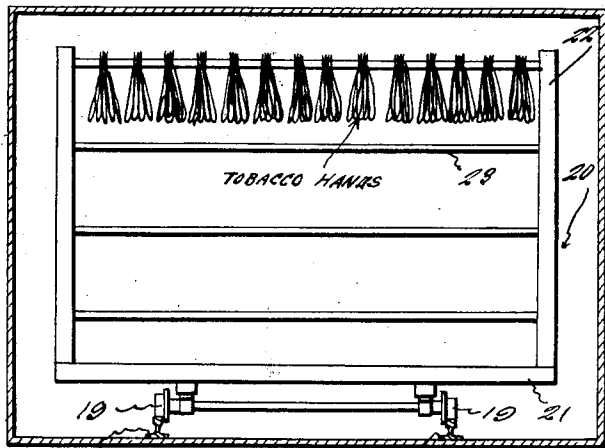


Fig. 3.



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TOBACCO BLEACHING MEANS AND METHOD

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This invention comprehends a novel physical means and accompanying method for conditioning and treating commercial tobacco, especially natural leaf tobacco, in order to provide a resultant product susceptible of ready sale and commercial success due to its capacity to serve more effectively in the development of wrappers for cigars.

It is a matter of common knowledge to persons skilled in the tobacco industry that many varieties and brands of tobacco are especially undesirable and sometimes unfit for usage in the trade as wrappers for cigars and the like.

Popular demand and discretionary taste of habitual cigar smokers calls for the usage of wrappers of a light hue such as is thought to be susceptible of imparting mildness and other desirable smoking properties and aroma to the light colored cigar.

I am aware of the fact that it is not broadly new in the art to cure and treat tobacco leaves by diversified bleaching processes and method. So far as I have been able to ascertain from a study of the prior art, the known methods embody the use of agents and means which lacks the desired degree of permanency. Then too, many of the methods known to me are such as to remove from the tobacco certain desirable combustion properties, thus impeding the free burning qualities regarded as most desirable by discreet smokers.

With the foregoing in mind, I have evolved and produced a special process and properly co-ordinated physical structure which enables me to subject natural tobacco in leaf or other form to an especially devised treatment which it is believed, will better fulfill the requirements necessary in bleaching and subsequent restoration of said tobacco products.

In carrying the inventive conception into actual practice, considerable experimental work was necessary and in order to enable the reader to acquire a clear understanding of the discovery and invention, I have illustrated a simple mechanical structure to aid in fulfilling the requirements and the system-

atic steps constituting the novelty of this disclosure.

In the accompanying drawings:

Figure 1 is a diagrammatic complete ensemble view illustrating the preferred structure permitting the development of practical results.

Figure 2 is a view in section or elevation showing, in a somewhat diagrammatic manner, a portable carrier truck such as is used under certain conditions.

Figure 3 is a fragmentary end view disclosing sliding shutters for use at each end of the enclosure or housing.

Briefly, and broadly stated, my preferred method of treating tobacco consists in subjecting the natural tobacco products to the following procedure: First, the tobacco in leaf or other form is placed in an air and gas tight enclosure, housing, casing, or equivalent structure. Secondly, the tobacco in this enclosure is sensitized by moistening the tobacco so as to render it susceptible of more readily adapting itself to the action of a bleaching constituent. Third, this bleaching constituent, in the nature of a chemical bleaching or blanching agent is introduced into the enclosure to impregnate the sensitized tobacco. Fourth, the sensitized chemically treated tobacco is now dried by expelling the moisture and chemical agent by appropriate aeration of said enclosure. Fifth, inasmuch as the chemical reaction is sometimes severe, it is now necessary, as a general rule, to restore certain of the combustible properties to the aforesaid treated tobacco by permeating the tobacco while in the enclosure, with a volatile vapor. Finally, the tobacco thus treated is again aerated for removal of superfluous vapors and final drying, preparatory to bodily removal from the enclosure to make it ready for commercial shipment.

The structure illustrated in Figure 1 is characterized by an air, fluid, and gas tight enclosure generally designated by the numeral 4. This is of suitable material, size, and proportion. In practice, it has been found advisable to construct it from an appropriate metal not likely to readily deteriorate from

the presence of chemical constituents circulated therein.

In the right hand end wall in the window opening 5 adjacent to which is an internal suction and circulating fan 6. The shaft of this is mounted in suitable bearings and provided with a pulley operable through the medium of a belt 7 trained over an associated pulley of an electric motor 8. Atmospheric air is introduced into the enclosure by way of this opening for drying and aerating purposes.

At the opposite end is an analogous opening 9 through which the used gases and chemicals are expelled. This is the exhaust opening. Thus, at one end is an air intake opening and at the opposite end an exhaust opening for scavenging the gases and promoting appropriate uniform circulation.

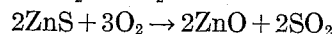
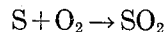
A suitable fan 10 is provided for exhaust purposes, this being driven by the belt 11 in turn operated through the medium of the motor 12. Both of the openings 5 and 9 are provided on the exterior with appropriate horizontal guides 13 to accommodate the slide shutters 14 providing appropriate fluid-tight closures. In practice, these details are of course augmented and appropriately constructed to fulfill the requirements of the airtight features of the structure.

Arranged at longitudinally spaced points and confined within the interior of the housing are the supports or racks for the tobacco. These comprise suitable uprights 15 having horizontally vertically spaced rails or rungs 16 on which the hands of tobacco are suspended, somewhat as diagrammatically illustrated in the drawings.

Incidentally, these rungs 16 may be removably mounted to expedite the hanging and transportation of tobacco hands. The numeral 17 merely designates suitable entrance doors to permit access to be had to the interior of the housing or enclosure.

In some instances, instead of using a permanent rack for hanging the hands of tobacco in the enclosure, I find it expedient and practical to resort to the idea illustrated diagrammatically in Figure 2. Under this arrangement I provide rails or tracks 18 to accommodate casters or wheels 19 on a transportation truck or carrier 20. This comprises a platform 21 on a suitable chassis provided with longitudinal vertical racks including uprights 22 and horizontal suspension rungs or rails 23 to accommodate the tobacco. Under this arrangement, the rails 18 extend to the exterior of the enclosure and one side wall may be removable so that it is possible to load the trucks on the exterior and to have them in readiness for movement into the enclosure when the treatment of one batch of tobacco has been completed. This permits work to be carried on in an unhampered and systematic time-saving manner.

Referring again to Figure 1, it will be observed that the numeral 24 designates a suitable tank or container for the bleaching chemicals. This is generally in the form of a gas. The specific chemical utilized is sulphur-dioxide. One formula for this agent is as follows:



Sulphur dioxide is, to my knowledge, the best known chemical agent for proper decoloring, bleaching, or blanching as the case may be. Usable in combination with this sulphur dioxide and injected simultaneously into the enclosure by appropriate means is a subordinate element which is preferably benzoyl-peroxide. Thus, these two agents are used either collectively or separately; that is, the sulphur dioxide may be used alone, but by preference is combined with the benzoyl-peroxide.

Referring again to Figure 1, it is observed that the gas is introduced into the container by way of a delivery pipe 25 having a suitable control valve 26 and an appropriate pressure gage 27.

The numeral 28 designates a circulating pipe for fluid having a multiplicity of equalizing and distributing branches 29 projecting into the interior of the enclosure and terminating near the top thereof and provided with spray nozzles 30. These nozzles are of such form as to convert the liquid into a vapor or mist designed to be absorbed by the hanging tobacco products.

The valved line 31 connects a tank 32 to the main line 28 for conveying a restorative solution into the enclosure. This tank is connected by way of a valved pressure pipe 33 with a suitable compressor 34. The adjacent valve line 35 leads from the compressor and is connected with a distilled water tank 36 having a valved pipe 37 in turn connected with the pipe 28. Thus, these solutions or liquid tanks are selectively employed in the different stages in the method of treatment to accomplish the desired results in an expeditious and practical manner.

The method may be better understood by considering the following steps and not placing particular emphasis on the physical means for carrying these steps into practice. In getting the device ready for operation, the hands of tobacco are suspended on the rungs 16 of the various racks inside of the housing 4. The shutters or slides at the ends constituting the circulation windows are closed. Then when the attendant leaves the building, the doors are closed. Consequently, the enclosure is fluid and airtight for the time being.

The first step is to inject distilled water by way of the compressor 34 and pipes 35 and 37 into the enclosure 4. This is accomplished

in an even and uniform manner by the circulation pipe 28 and its nozzle equipped branches 29. Thus, a mist or vaporous agent is provided for moistening the leaves of the various tobacco hands to complete the sensitizing step. The texture of the tobacco determines the length of time required for accomplishing this particular step.

The next step consists in injecting the chemical bleaching gas composed of the companion components sulphur dioxide mixed in proper proportion with benzoyl peroxide. The treatment of this agent may last twenty minutes to four hours, depending on the texture of the tobacco and the thickness of the leaves. Incidentally, the sulphur dioxide is preferably a commercial product which may be derived from metallic sulphide, from pyrites or shales or other decomposed organic bodies. It is likewise understood that these leaves are moistened to the proper order.

Having subjected the moistened tobacco to the effects of the chemical constituents, the closures 5 and 9 are open and the fans started for aerating the chamber within the building 4 to expel the gas and simultaneously dry the bleached tobacco. Under this process it is next necessary to provide a proper commercial product, to subject the dried tobacco to the action of a restorative or rejuvenating agent. This is preferably in the form of a restorative solution which may be and preferably is, a weak solution of potassium nitrate.

This solution is introduced when the enclosure is airtight and it permeates the dried leaves in vapor form and not only restores the combustible properties, but provides a desirable finish of a radiant becoming shade which is bright and characterized by an appropriate glazed luster. Having treated tobacco with the potassium nitrate it is generally necessary to again aerate the tobacco to render it fresh.

This final aerified treatment liberates the trace of the denaturing agent of chemical gas and potassium nitrate in the enclosure. It is submitted also that the choice of the specific agents mentioned herein has the capacity of affording the desired fixative properties necessary to avoid otherwise ruinous results.

The inventive conception involves primarily the method of treating tobacco for brightening and decoloring it and rendering it a better commercial product and further comprehends a suitable mechanical structure to permit the process to be completed in a practical manner.

I claim:

1. A method of treating tobacco consisting in subjecting the natural tobacco products to the following procedure; first placing the tobacco in an air and gas tight enclosure; secondly, sensitizing said tobacco by moistening the tobacco; third, introducing a chem-

ical bleaching agent into said enclosure to impregnate and blanch said tobacco; fourth, drying the tobacco and expelling the chemical agents by aerating the enclosure; fifth, restoring the combustion properties to said tobacco by permeating the tobacco with a volatile vapor, and finally, aerating the enclosure again to remove superfluous vapor.

2. A method of treating tobacco consisting in subjecting the natural tobacco product to the following procedure; first hanging the tobacco on supports or racks in a suitable air, fluid and gas tight enclosure; secondly, sensitizing said tobacco by moistening it with distilled water vapors; third, introducing a chemical bleaching agent into said enclosure to impregnate and blanch said tobacco, said agent comprising a mixture of sulphur dioxide and benzoyl peroxide; fourth, drying the moistened chemically treated tobacco by circulating air through said enclosure and expelling moisture and gases from the enclosure; fifth, restoring the combustion properties to said tobacco.

3. A method of treating tobacco consisting in subjecting the natural tobacco product to the following procedure; first hanging the tobacco on supports or racks in a suitable air, fluid and gas tight enclosure; secondly, sensitizing said tobacco by moistening it with distilled water vapors; third, introducing a chemical bleaching agent into said enclosure to impregnate and blanch said tobacco, said agent comprising a mixture of sulphur dioxide and benzoyl peroxide; fourth, drying the moistened chemically treated tobacco by circulating air through said enclosure and expelling moisture and gases from the enclosure; fifth, restoring the combustion properties to said tobacco by introducing a restorative solution mist into the enclosure, said mist being developed from a comparatively weak solution of potassium nitrate.

4. A method of treating tobacco consisting in subjecting the natural tobacco product to the following procedure; first, hanging the tobacco on supports or racks in a suitable air, fluid and gas tight enclosure; secondly, sensitizing said tobacco by moistening it by absorption with distilled water vapors; third, introducing a chemical bleaching agent into said enclosure to impregnate and blanch said tobacco, said agent comprising a mixture of sulphur dioxide and benzoyl peroxide; fourth, drying the moistened chemically treated tobacco by circulating air through said enclosure and expelling moisture and gases from the enclosure; fifth, restoring the combustion properties to said tobacco, by introducing a restorative solution mist into the enclosure, said mist being developed from a comparatively weak solution of potassium nitrate, aerating the enclosure to complete the treatment, to remove superfluous vapor, and

to condition the tobacco for removal from the enclosure.

5 An apparatus for bleaching natural leaf tobacco in the manner specified comprising
an air, gas, and fluid tight container, a plu-
rality of racks in said container designed for
suspension of hands of tobacco, a fluid cir-
culation pipe, a plurality of branches leading
therefrom into the interior of said container
and provided with terminal spray nozzles, a
distilled water tank, a valved line connecting
said tank with said pipe, and a compressor
connected by a valved pipe with said distilled
water tank, a second tank designed to contain
15 a restorative solution, said second tank being
connected with said compressor and having
valved connection with said first named cir-
culating pipe, the opposite ends of said con-
tainer being provided with air circulating
20 openings, closures associated with said open-
ings, intake and exhaust fans associated with
said openings, operating means for said fan,
and a chemical bleaching gas receptacle hav-
ing valved pipe connection with the lower
25 portion of said casing adjacent the exhaust
end thereof.

In testimony whereof I affix my signature.

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