

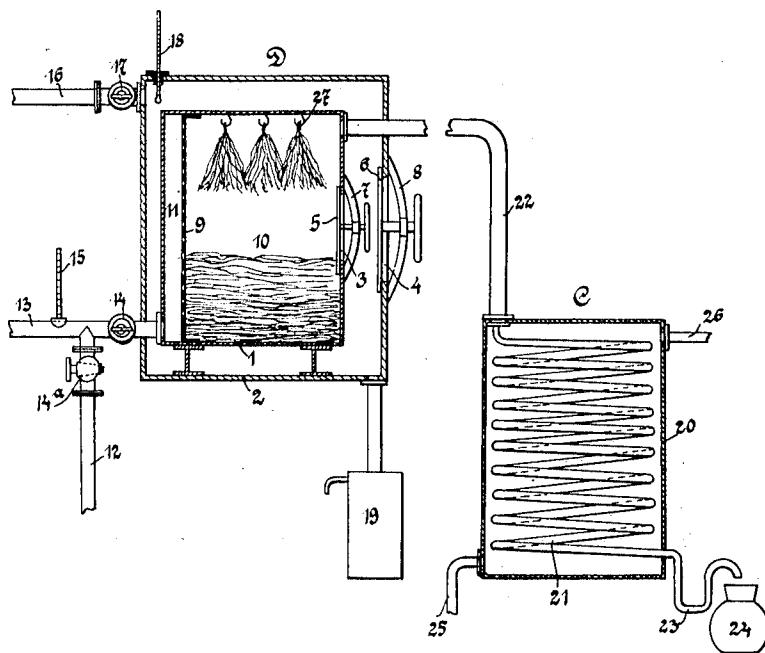
J. SARTIG.

METHOD OF FREEING TOBACCO FROM NICOTIN.

APPLICATION FILED NOV. 22, 1906. RENEWED JULY 24, 1912.

1,055,360.

Patented Mar. 11, 1913.



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UNITED STATES PATENT OFFICE.

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METHOD OF FREEING TOBACCO FROM NICOTIN.

1,055,360.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHANNES SARTIG, a citizen of the Empire of Germany, residing at Nikolassee, near Berlin, in the Empire of Germany, have invented a new and useful Method of Freeing Tobacco from Nicotin, of which the following is a specification.

My invention relates to a new method of producing as rapidly as possible tobacco free from nicotin.

The known methods of freeing tobacco from nicotin by means of a current of air present the defect, that an oxidation of the substances contained in the tobacco will result.

My invention consists in a new method of freeing tobacco from nicotin, in which air or oxygen is excluded from the tobacco, so that any oxidation of the substances contained in the tobacco is prevented and more particularly any defilement of the treated tobacco with products of the oxidation of the substances and with so-called resinified matters is rendered impossible, while at the same time the valuable nicotin can be recovered in its pure and undecomposed condition.

I will now proceed to describe my invention with reference to the accompanying drawing, which represents a vertical section through an apparatus that may be used for carrying into effect the new method.

My new method is as follows: Tobacco of any kind, either prepared or fermented or unprepared, is introduced into a suitable vessel, where it may be placed in a loose heap or in layers or it may be suspended in clusters from suitable hooks, rods or the like. Superheated steam of more than 100° and less than 150° centigrade is then passed through the tobacco, care being taken to prevent the superheated steam from cooling and condensing. Thereby the tobacco is heated up to a corresponding temperature and the nicotin contained in it will volatilize and will be carried away with the superheated steam to a convenient condenser. The aqueous distillate will then contain the undecomposed nicotin.

A suitable apparatus is shown in the drawing and may comprise a distilling apparatus D and a condenser C. The distilling apparatus D preferably comprises an internal vessel 1 of any suitable shape and an external vessel 2 inclosing the former

and forming a steam jacket. Both vessels 1 and 2 may be provided with charging openings 3 and 4, which can be closed by means of lids 5 and 6, bows 7 and 8 and bolts or the like. A false bottom 9 is preferably disposed in the internal vessel 1, which divides the latter into the tobacco chamber 10 and the steam sheet 11. The superheated steam may be conducted from the respective source through a suitable pipe 13 to the steam chest 11, a branch 12, two suitable stop valves 14, 14^a and a thermometer 15 being preferably provided. The internal vessel 1 is heated with superheated steam supplied from the same source to the external vessel 2 through a pipe 16 and a stop valve 17. A thermometer 18 is preferably disposed in the top of the external vessel 2 and serves for measuring the temperature of the steam in the jacket. A steam trap 19 of any known construction is preferably disposed for collecting and separating the condensed water from the steam jacket.

The condenser C may consist of a box of suitable size and shape and of a coil therein, which is to be connected at its upper end with the internal vessel 1 of the distilling apparatus by means of a suitable pipe 22. The lower end of the coil 21 preferably terminates in a siphon 23, beneath the mouth of which some pot 24 or other vessel can be placed for collecting the distillate. Cold water is supplied to the box 20 at the bottom through a pipe 25 and the warm water is to be led off from the box 20 at the top through a pipe 26.

The tobacco is introduced into the chamber 10 in the internal vessel 1 of the distilling apparatus D through the charging openings 3 and 4 and may be placed in a loose heap or may be suspended in clusters from nails 27 as shown or otherwise. Superheated steam is then turned on to the external vessel 2 by opening the stop valve 17 to heat the internal vessel 1 and the tobacco therein. The stop valve 14^a is opened for allowing the superheated steam to blow off and for draining off any condensed water that may be formed. The moment the thermometer 15 shows, that the superheated steam has the proper temperature, the stop valve 14^a is closed and the other stop valve 14 is opened for admitting the superheated

steam to the internal vessel 1. This may be done at the proper moment, say if the thermometer 18 shows that the superheated steam in the steam jacket has the correct temperature, which would indicate, that the internal vessel 1 with its contents has been brought to a sufficiently high temperature.

It is easy to so regulate the temperature within the internal vessel 1 by means of the thermometers 15 and 18, that the temperature of both the superheated steam and the tobacco be maintained on a temperature as near as possible to 150° centigrade. Care should be taken, that this temperature never rises up to 150° centigrade, since at this point the woody fibers of the tobacco would already commence to be decomposed which must be avoided. By means of the steam jacket every cooling and condensation of the superheated steam within the internal vessel 1 is prevented. The free nicotine contained in the tobacco will then volatilize and will be carried away with the superheated steam, it remaining undecomposed. These steams pass from the distilling apparatus D to the condenser C through the pipe 22 and will be cooled and condensed in the coil 21, which is externally in contact with the cold water circulating in the box 20. The distillate will collect in the siphon 23 and will pass over into any pot 24 or the like. The nicotine dissolved in the condensed water can be easily recovered in any known manner and forms a valuable article of commerce.

Preferably the superheated steam is passed through the tobacco until no trace of nicotine can be found in a sample of the distillate, when the tobacco will be free of nicotine. All the nicotine separated from the tobacco will be contained in the condensed water. The tobacco so treated can be in

any known manner turned into smoking- or quid-tobacco or snuff.

Evidently the apparatus shown in the drawing and described above may be varied in many respects, while the result of the method will remain the same.

Analysis has ascertained that finally cut up tobacco, handled in accordance with the present method, is entirely freed from nicotine, and it is to be especially noticed that the nicotine which is found in combination with plant acids, is completely distilled away through the use of the superheated steam, so that a previous handling of the tobacco with alkali as in known procedures, is not necessary. The union of the nicotine with the plant acids is the easier destroyed the higher the temperature of the steam.

I claim:

1. The process of recovering nicotine from tobacco material, which consists in passing superheated steam of more than 100° centigrade and less than 150° centigrade in a continuous stream through the tobacco material while excluding therefrom the air and maintaining such a temperature as to prevent condensation in the material, and condensing the steam charged with nicotine after passage through the material.

2. The process of recovering nicotine from tobacco material, which consists in passing steam at a temperature less than 150° centigrade in a continuous stream through the tobacco material while excluding therefrom the air and maintaining such a temperature as to prevent condensation in the material, and condensing the steam charged with nicotine after passage through the material.

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Witnesses:

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