

UNITED STATES PATENT OFFICE.

HERMANN FRIEDRICH MARIA THOMS, OF STEGLITZ, GERMANY, ASSIGNOR
TO HERMANN OTTO WENDT, OF BREMEN, GERMANY.

PROCESS OF PROVIDING CIGARS WITH SMOKE-IMPROVING PORTIONS AT THE POINTED ENDS.

SPECIFICATION forming part of Letters Patent No. 757,514, dated April 19, 1904.

Application filed July 30, 1903. Serial No. 187,655. (No specimens.)

To all whom it may concern:

Be it known that I, HERMANN FRIEDRICH MARIA THOMS, professor and doctor of philosophy, a subject of the King of Prussia, German Emperor, whose post-office address is No. 3 Hohenzollernstrasse, Steglitz, near Berlin, Kingdom of Prussia, German Empire, have invented a new and useful Process of Providing Cigars with Smoke-Improving Portions at the Pointed Ends; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates in general to the art of improving the smoke of tobacco by chemically binding or otherwise rendering innocuous its poisonous constituents.

As is well known, the smoke of tobacco contains as poisonous constituents nicotin in the chemically-unaltered state, decomposition products thereof—as, for instance, pyridin, picoline, and other similar basic compounds, ammonia, sulfureted hydrogen, and even hydrocyanic acid in larger or smaller traces. In order to get rid of those poisonous constituents, it has been proposed to subject the smoke to the combined action of organic acids, such as tannic, tartaric, and citric acids, and of compounds of palladium and platinum. The use of certain molybdates has also been proposed. By these means a satisfactory solution of the problem cannot be obtained for the reason that the said platinum or palladium salts have not a sufficiently strong precipitating action upon the poisonous bases to compensate the eliminated action of said acids. Moreover, the sulfureted hydrogen, hydrocyanic acid, and other constituents are left unaltered, all as is well known to those familiar with the chemistry of the tobacco-smoke constituents. The molybdates also are only weak precipitants with regard to the bases in question. Now I have discovered that the poisonous basic constituents of the tobacco-smoke can in a very sufficient manner be bound into stable salts and the sulfureted hydrogen and hydrocyanic acid eliminated from the smoke by acting upon the latter with single or double

salts formed by metals of the iron group—that is to say, iron, manganese, nickel, and cobalt, with suitable mineral acids, such as sulfuric and hydrochloric acids or with organic acids, preferably citric and tartaric acids. By causing said compounds to react with tobacco-smoke they are split up by the basic constituents of the smoke, which combine with the sulfuric or other acid to form salts, and the metal set free in the form of hydroxid reacts with the sulfureted hydrogen, decomposing the same and combining with the sulfur, and, moreover, decomposes hydrocyanic acid, if present. Very good results will in general be obtained by the sulfates of the metals of the iron group—for instance, ferrous sulfate; but still better results are obtained by the use of the double sulfate of ferrous oxid and ammonia or ferric chlorid or ferrous tartrate and the corresponding salts of the other metals of said group.

The efficiency of my improved means and the by far greater beneficial result obtainable thereby may be seen from the results of the following comparative experiments. A cigar weighing 5.2 grams and having 2.78 per cent. or 0.14456 gram of nicotin was artificially smoked and the smoke first led through a tube filled with cotton wad that had been previously impregnated with a solution of the double sulfate of ferrous oxid and ammonia and perfectly dried and then absorbed by a suitable liquid. After the cigar had been smoked and all of the smoke treated and absorbed the liquor was precipitated with potassium bismuth iodid. The analysis of the precipitate obtained show that only 0.057824 gram or 16.1 per cent. of the nicotin present in the cigar were left in the smoke, whereas 83.9 per cent. were retained by the reaction with the said double sulfate. Operating in a similar manner upon the smoke by means of tannic acid and platinum and palladium salts, the best effect attainable amounted only to the elimination of about sixty-five per cent. of the nicotin present; but in most cases the effect obtained did not reach that optimum result.

Based upon my said new discovery the pres-

ent invention substantially consists in utilizing the same for improving the smoke of cigars in such a manner that the cigar is provided in its pointed portion and below the wrapper with a sufficient quantity of a salt or salts of metals of the iron group, the salt or salts being intimately incorporated in the tobacco composing said end portion, so that this portion itself constitutes a retainer for and destroyer of the poisonous constituents of the cigar-smoke.

In carrying out my invention I, for instance, proceed as follows: I prepare a solution of one kilogram of ferrous sulfate in four kilograms distilled water. In this solution, to which may be added some glycerin to act as a binder for securing the adherence of the said salt to the tobacco after drying, I dip the unwrapped fillers with a sufficient length of their pointed end portion and allow said end portion to remain in contact with the liquor until they are sufficiently impregnated with the liquor. In general I prefer to have the said end portion impregnated with from thirty to fifty per cent. of the selected salt. In order to facilitate the penetration of the liquor into the tobacco, the pointed end portion of the cigar may be perforated by small holes or slits extending inwardly toward the center line of the cigar. After impregnation the fillers are removed from the liquor and allowed to perfectly dry, when they are provided with the usual wrapper.

I wish it to be understood that the above composition is not intended to limit my invention to the proportions described, which can be varied within wide limits, as they depend upon the amount of nicotin present in the tobacco, which is also determinative for the length of the end portion to be dipped into the liquor and the period of time required for the contact of the fillers with the liquor, as will be easily understood by those skilled in the art.

What I claim as my invention is—

1. The process of providing cigars with a

smoke-improving portion at the pointed end which essentially consists in making the fillers, impregnating the pointed end portion of same with a solution of a salt composed of a metal of the iron group, drying, and wrapping, substantially as and for the purpose specified.

2. The process of providing cigars with a smoke-improving portion at the pointed end portion which essentially consists in making the fillers, impregnating the pointed end portion of same with a solution of ferrous sulfate, drying and wrapping, substantially as and for the purpose specified.

3. The process of providing cigars with a smoke-improving portion at the pointed end which essentially consists in making the fillers, providing the same at the zone of the pointed end with small holes extending inwardly, dipping the fillers with said ends into a solution of ferrous sulfate, allowing the said end portions to remain for a time in contact with said liquor, removing the fillers from the liquor, causing them to dry and then applying the wrapper, substantially as and for the purpose specified.

4. As a new article of manufacture a cigar made with a filler a portion of the pointed end of which is impregnated with salts of metals of the iron group, and a wrapper which is not impregnated with such salt, substantially as and for the purpose specified.

5. As a new article of manufacture a cigar made with a filler a portion of the pointed end of which is impregnated with ferrous sulfate, and a wrapper which is not impregnated with salts of the iron group, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HERMANN FRIEDRICH MARIA THOMS.

Witnesses:

HENRY HASPER,

WILLIAM MAYNER.