

UNITED STATES PATENT OFFICE.

OSCAR LIEBREICH AND HUGO MICHAELIS, OF BERLIN, GERMANY, ASSIGNORS
TO FRIEDRICH CARL GLASER, OF SAME PLACE.

PREPARING EXTRACTS OF TOBACCO.

SPECIFICATION forming part of Letters Patent No. 283,622, dated August 21, 1933.

Application filed March 17, 1883. (No specimens.)

To all whom it may concern:

Be it known that we, OSCAR LIEBREICH and HUGO MICHAELIS, subjects of the King of Prussia, residing at the city of Berlin, in the Kingdom of Prussia and Empire of Germany, have invented new and useful Improvements in Processes for Treating Tobacco, of which the following is a specification.

This invention relates to a mode of preparing an extract of tobacco, which consists in subjecting the tobacco to the action of volatile fat, resin, and wax dissolving substances and of alkaline reacting liquids, as hereinafter more fully set forth.

A fixed dosing of the nicotine contained may be attained by treating the extract with acidulated water, as hereinafter more fully set forth.

In carrying out the method the tobacco is subjected to extraction by any substance which is volatile and which dissolves fats—as, for example, by chloroform, ether, ethylidene-chloride, ethylene-chloride, sulphide of carbon, and the like. The extracting material, which after extraction is retained by the tobacco, is removed therefrom by being forced out by air, carbonic acid or other gases, or by heating and the production of a vacuum in the vessel in which the extraction is carried on, and in this way the extracting material is again obtained. From the extract thus obtained the extracting material is distilled off, and the last traces of the same are removed by heating, which may be done in a vacuum. The extract now contains, in addition to other ingredients, a part of the nicotine, coloring-matters, waxy and fatty components, and, joined to the latter, the aroma of the tobacco. After this the extract is for a considerable period agitated, in the presence of heat, with an alkaline reacting aqueous liquid, most suitably a solution containing about one-half per cent. of ammonia. The aromatic components are taken up by the alkaline reacting liquid, while a smeary, colored, and sticky mass remains behind. Coloring-matters and a part of the nicotine are also taken up by the alkaline liquid. The alkaline liquid charged with the mentioned materials is separated from the waxy components by filtration or centrifuga-

tion, or other similar process. With the alkaline liquid thus obtained the tobacco is impregnated by sprinkling, immersion, or similar treatment. The tobacco is then dried, while the aroma, color, and the like remain behind.

If a fixed amount of the nicotine contents is to be attained, the extract which has been freed from the extracting material is agitated with slightly acidulated water, (most suitably water containing about one-half per cent. of hydrochloric acid,) and the resulting solution in which the nicotine is contained is separated from the undissolved remaining substances by filtration or similar treatment. The sediment is washed out with water. By a greater or less addition of acid, and by regarding the amount of nicotine already present or still remaining in the tobacco to be impregnated, the exact dosing or proportioning of the amount of nicotine required to be contained in the final product can be attained.

Under circumstances it may be advantageous, in place of raw tobacco, to subject tobacco in any degree of manufacture to the process described; also, the several steps of the process may be divided among the different steps of manufacture, so that, for example, the extraction may take place after fermentation, and the addition of the extract may take place only when the manufacture is complete.

In the above-described process nothing prevents the application of sauce, which is occasionally employed to generate a certain taste in the smoking of the tobacco.

In the following it is intended, in addition to the process already set forth, to describe some examples whereby the chosen extractions, as also the materials eventually used for the acid solutions, are varied, and it is to be noticed that these variations may also be effected in different manners.

Example 1. One kilogram of tobacco is subjected to extraction by about four kilograms of ethylidene-chloride, until the extractive flowing off is no longer colored. The tobacco thus treated is dried in order to drive out the extractive which may yet be contained therein. This drying is done in a closed ves-

sel through which air is forced, so as to cause the ethylidene-chloride which is forced out by the air to be caught in suitable condensers and be regained for use. The ethylidene-chloride is distilled off from the extract obtained. The remaining liquor is warmed and agitated with one-fourth of a liter of ammonia solution containing one-half per cent. of ammonia, and after continued agitation for about one-half of an hour the liquor is allowed to stand and cool, when waxy substances separate. The latter are taken from the liquor, and the tobacco, treated and dried as above set forth, has uniformly poured over it the extract, which has been cleaned and freed from waxy substances, after which the whole is dried.

Example 2. In this example ethylidene-chloride is to be used as an extracting material. The proportionate quantities, as also the operation of extracting and distilling, are the same as just described. If in this case the nicotine contained in the extract is to be removed, the extract is agitated, while being warmed, with one liter of acid solution containing about one-half per cent. of hydrochloric acid. After cooling and filtering, the precipitate, which is now freed from nicotine, is washed with water. This extract is now, as in the first example, agitated, while being warmed, with one liter of ammonia solution containing one-half per cent. of ammonia, and filtered after cooling. The separation of the waxy substances again takes place, so that the tobacco which has been subjected to extraction and dried can then have uniformly poured over it the filtrate, after the same has cooled, after which the tobacco is dried. By these means the desired result is attained of a tobacco of an agreeable taste, and free from waxy, fatty, and resinous substances.

Example 3. In this third example is to be shown how an improvement of the tobacco can be undertaken with simultaneous dosing

of the nicotine contents, and in this case chloroform is to be used as extracting material. The tobacco here used as raw material is first examined by analysis in regard to its nicotine contents, and as an example the same will be assumed as being three per cent. One kilogram of extract is then subjected to extraction by about four kilograms of chloroform. In the same manner as before the tobacco is subjected to air-drying to remove the absorbed chloroform, the extract is freed from chloroform by distillation, the precipitate is agitated, while being warmed, with one liter of acid solution containing one-half per cent. of nitric acid, and the solution is filtered. The precipitate obtained is agitated with one liter of potash lye containing one-half per cent. of potash, and again filtered.

From the acid solution, which contains all the nicotine, the nicotine is obtained by distillation with caustic lime. Thirty grams of nicotine are obtained, corresponding to the above-named contents of this material in the tobacco, and if, for example, these contents are to be reduced to one per cent., ten grams of the nicotine obtained are added to the alkaline solution, with which latter the tobacco is uniformly impregnated and then dried, as before stated.

What we claim is—

The method of preparing an extract of tobacco, which consists in subjecting the tobacco to the action of volatile fat, resin, and wax dissolving substances, and of alkaline reacting liquids, substantially as set forth.

In testimony whereof we have hereunto set our hands and seals in the presence of two subscribing witnesses.

OSCAR LIEBREICH. [L. S.]
HUGO MICHAELIS. [L. S.]

Witnesses:

MARC M. RUSSEN,
C. L. THEODOR MÜLLER.