

UNITED STATES PATENT OFFICE.

EMIL SUCHSLAND, OF HALLE-ON-THE-SAALE, GERMANY.

PROCESS OF FERMENTING OR CURING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 516,778, dated March 20, 1894.

Application filed June 11, 1892; Serial No. 436,335. (No specimens.) Patented in Germany July 8, 1890, No. 56,539.

To all whom it may concern:

Be it known that I, EMIL SUCHSLAND, a subject of the King of Prussia, and a resident of Halle-on-the-Saale, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Processes of Fermenting or Curing Tobacco, (for which I have obtained Letters Patent of the Empire of Germany, No. 56,539, dated July 8, 1890,) of which the following is a specification.

Tobacco before being ready for use has to be fermented. For this purpose the leaves, after they are dried, are collected in large piles in which they undergo a gradual rise of temperature and form those aromatic products and new properties by which the peculiar taste, smell, &c., are imparted to the tobacco. The principal defect of the ordinary fermentation process, especially when used for producing a good quality of tobacco, consists in the absolute uncertainty of the resultant product. Tobacco of the same condition and quality at the beginning of the process may produce cured tobaccos of entirely different conditions and qualities, even when fermented in the same pile, one portion being fair and the other inferior or badly fermented. Many efforts have heretofore been made to overcome this annoying and expensive defect by adding to the tobacco substances designed to intensify and prolong the fermentation period. But none of these processes attained a successful degree of certainty or uniformity in the product and consequently they failed to gain a firm foothold in the tobacco industry.

My improved process which is based on the true nature of the fermenting process, has the following advantages: first, that it supplies a uniform process of fermentation which is entirely independent of extraneous influences; secondly that it avoids absolutely the bad-smelling fermentation; and thirdly, that it improves the quality of inferior kinds of tobacco by imparting thereto the taste, flavor and other characteristics of the better grades. These results are of the greatest importance in the manufacture of tobacco.

The invention consists principally in subjecting the tobacco to the action of a solution containing artificially generated ferments, as hereinafter described and claimed. The artificial ferments are obtained from well

fermented and superior kinds of tobacco, and access from the air to the leaves of the ferments of lactic and butyric acids which are the cause of the badly-smelling fermentation, is prevented by a careful sterilization of the water used in the solution and the spraying apparatus or their effect counteracted by a preponderating addition of the better ferments.

On practically carrying out my invention it is accomplished in two steps, in the generation of pure growths of exciting ferments and in the transmission thereof to the tobacco to be fermented.

The exciting ferments can be obtained from well fermented tobacco by the methods well known to all experts in bacteriology. A piece of well fermented tobacco is placed, by carefully observing the ordinary precautions followed in all bacteriological experiments, into a testing tube containing food-gelatine which is then according to the method of Professor Koch, poured onto a glass plate. In a few days the germs contained in the sample have grown into colonies, which are transferred to inclosed plates coated with agar-gelatine in which the same ingredients are contained as in tobacco. The tubes containing the agar-plates, are finally placed into a hatching apparatus by the heat of which the bacteria are quickly developed. The so obtained micro-organisms are tested before using them so as to determine their quality. This is determined to some extent by the smell of the tube in which they are generated, mainly however by transferring them to a small quantity of tobacco. The bacteria have to produce first, the flavor peculiar to the tobacco on which they are raised; secondly, to remove the acrid taste of the tobacco by decomposing the albumen in the same; thirdly, to impart a mild taste to the tobacco by fermenting the cellulose in the same, and fourthly, to generate a healthy acid the presence of which can be directly tested on the gelatine plates by litmus. Each of these characteristics is produced by a special kind of micro-organism. When the test shows that all the required characteristics are present in the sample, the ferment is used as the starting growth which by transfer or inoculation on new gelatine plates can be multiplied *ad infinitum*. The ferments are

transferred to the tobacco to be fermented when the same is air-dried and ready to be packed in large piles. The ferments are transmitted by sprinkling the tobacco with a solution in which they are suspended. They are placed, for instance in sterilized water and sprayed by a carefully sterilized syringe over the tobacco to be fermented. The so sprayed tobacco remains in moist condition for a few days, so as to permit the proper development of the bacteria. Special chemical reactions are not observed by this treatment. The rotting of the tobacco is prevented as pure sterilized water is used and as all foreign bacteria which might induce putractive fermentation are carefully excluded. The tobacco is finally dried and stored and afterward fermented in the well known manner, when required for use.

In place of air-dried tobacco, old and badly-fermented tobacco can be improved by spraying it with a solution of the pure ferments whereby the tobacco is considerably improved.

I claim as my invention—

1. The process of fermenting and curing tobacco of an inferior grade, which consists in spraying it with a solution containing artificially-generated ferments obtained from a superior grade of tobacco, then permitting the so sprayed leaves to undergo a fermenting operation under the action of said ferments, substantially as set forth.

2. The process of fermenting and curing tobacco of an inferior grade, which consists in spraying it with a solution containing artificially-generated ferments obtained from a superior grade of tobacco, then permitting the so-sprayed leaves to undergo a fermenting operation under the action of said ferments, then drying said tobacco, and then subjecting it to fermentation in the usual manner, substantially as set forth.

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

EMIL SUCHSLAND.

Witnesses:

CARL BORNGRAEBER,
FRANZ HAMMERSCHMIDT.