UNITED STATES PATENT OFFICE.

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PROCESS OF PREPARING NICOTIN.

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To all whom it may concern:

Be it known that I, WALTER HALLE, a subject of the Emperor of Austria-Hungary, residing at Budapest, Austria-Hungary, have invented new and useful Improvements in Processes of Preparing Nicotin, of which the following is a specification.

This invention relates to a process of preparing nicotin and has for its object to extract nicotin from the tobacco directly, that is to say without any preliminary preparation or processes such as have heretofore been necessary.

Nicotin, as is well known, is almost exclusively combined with organic acids in tobacco, that is, in the form of salts and not as free base. In order to obtain the base by extraction with an easily volatile solvent, it is therefore necessary to free it from the salts by means of alkalis. From the solutions obtained in this manner nicotin according to processes hitherto in use was obtained in a very troublesome way. In most cases the base had to be precipitated as oxalate by shaking the solution with oxalic acid. This salt had to be purified by means of several operations, and after this the nicotin was liberated and eventually purified by distillation in a current of hydrogen. Almost all other known processes and also those which start from aqueous tobacco extracts proceed on the same lines, the nicotin being in all these processes, obtained in the form of the oxalate or another salt. The step from the crude nicotin salt to pure nicotin is, however, a very considerable one, with which is associated a loss in yield exceeding 50 per cent. In contra-distinction to these known processes according to the present invention the nicotin is extracted from tobacco by means of suitable organic solvents, in the form of its salts without previous liberation of the base. After evaporating the solvent the residue is subjected to distillation in vacuum. The nicotin salts are thereby decomposed into their components and the nicotin is distilled in an almost pure state into the receiver. In this manner nicotin can be isolated by means of simple distillation from the extract in which it is contained besides an abundant quantity of other substances such as resin-like bodies, wax, and the like; and this can be done directly without the round-about way of preparing first the oxalate or similar complicated methods of purification. For carrying out the process, as starting material, preferably solid tobacco waste is used which is extracted after suitable comminution by means of organic solvents such as petroleum, ether, benzin, benzene, toluene, xylene, trichloro-ethylene, and carbon-tetra-chlorid (perchloromethane). Very good results are obtained by extracting with a mixture of benzin and benzene. The residue remaining after evaporation of the solvent is fractionated in a suitable distillation vessel under reduced pressure (for example 12 to 15 mm.). After a small first running the temperature of the vapor rises to about 140°. The main fraction which passes over contains 80 to 98 per cent. of nicotin, which can be obtained quite pure by re-distillation in a current of hydrogen in a high vacuum. The variable content in nicotin is a result of the variable composition of the different kinds of tobacco.

The present process is considerably simpler as compared with the hitherto used processes. Only by this process the problem of manufacturing nicotin on an industrial scale in a satisfactory manner is solved, and the possibility of utilizing tobacco waste on a commercial scale for the production of nicotin is made practicable by the present invention.

I claim:

1. A process of preparing nicotin which consists in extracting tobacco by means of an organic solvent, without decomposition of the nicotin salts by alkalis, evaporating the solvent, and subjecting the obtained extract to distillation in vacuum.

2. A process of obtaining nicotin comprising treating tobacco to directly extract the nicotin salts contained therein, and subjecting the obtained extract to distillation in vacuum.

3. A process of obtaining nicotin comprising treating tobacco with an organic solvent to directly extract the nicotin salts contained therein, evaporating the solvent, treating the residue to decompose the nicotin salts into their components, and collecting the nicotin.

4. A process of obtaining nicotin comprising treating tobacco with an organic solvent to extract therefrom nicotin salts in undecomposed form, evaporating the solvent, and treating the residue to separate the nicotin therefrom.

5. A process of preparing nicotin from tobacco waste having its nicotin salts un-

decomposed by alkalis, comprising comminuting said tobacco waste, extracting said comminuted tobacco waste by means of an organic solvent, evaporating the solvent, and distilling in vacuum the extract thus obtained.

6. A process of preparing nicotin which consists in extracting dry tobacco by means of a solvent comprising a mixture of benzin and benzene, without previous decomposition of the nicotin salts by alkalis, evaporating the solvent, and subjecting the extract thus obtained to distillation in vacuum.

7. A process of preparing nicotin comprising treating tobacco with a solvent containing benzene, evaporating the solvent, treating the residue to decompose the nicotin salts into their components, and collecting the nicotin.

8. A process of preparing nicotin comprising treating tobacco with a benzene solvent, evaporating the solvent, and subjecting the residue to distillation in vacuum.

9. A process of extracting tobacco waste which comprises comminuting said tobacco waste while retaining its nicotin salts undecomposed by alkalis, treating said comminuted tobacco waste in the said state by means of an organic solvent, and distilling the extract thus obtained in vacuum.

10. A process of extracting tobacco waste in which said tobacco waste is comminuted while still in a condition in which it retains its nicotin salts undecomposed by alkali salts, treating said comminuted tobacco waste in this condition with a mixture of benzin and benzene, evaporating said mixture of benzin and benzene, and subjecting the extract thus obtained to distillation in vacuum.

11. A process of utilizing tobacco waste which comprises comminuting said tobacco waste while still in a condition in which it retains its nicotin salts undecomposed by alkalis, extracting said comminuted tobacco waste in said condition by means of an organic solvent, evaporating said solvent, and subjecting the extract thus obtained to distillation.

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Witnesses:
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