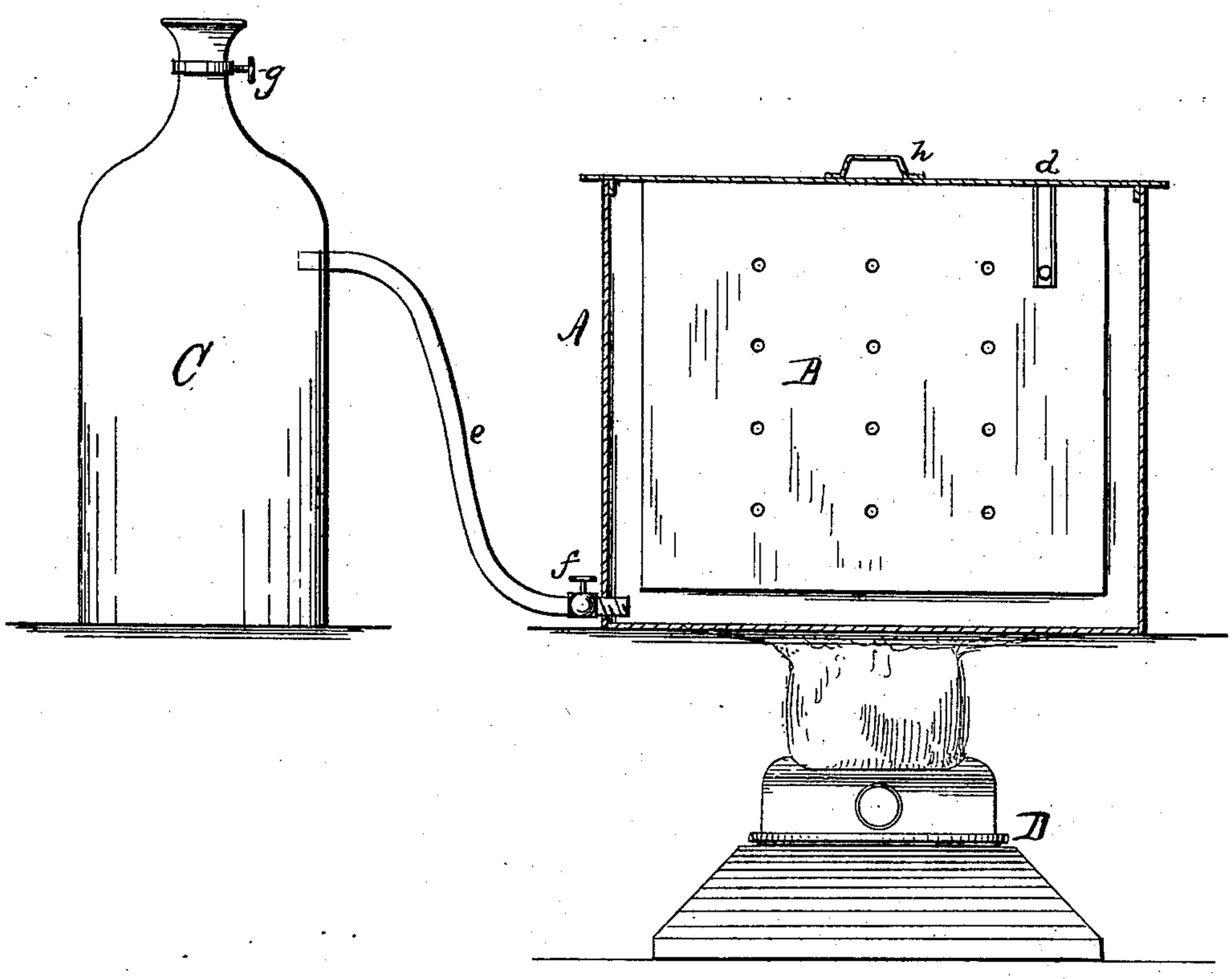
(No Model.)

E. HOWARD.

METHOD OF TREATING TOBACCO.

No. 273,362. Patented Mar. 6, 1883.



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UNITED STATES PATENT OFFICE.

EDWARD HOWARD, OF GASPORT, NEW YORK.

METHOD OF TREATING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 273,362, dated March 6, 1883.

Application filed July 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HOWARD, a subject of the Queen of England, residing at Gasport, in the county of Niagara, in the State of New York, have invented a Process for the Removal of Nicotine, Ammonia, and Bitter Extractine from Tobacco, of which the following is a specification.

The invention relates to a process for treating tobacco by heat, whereby the noxious qualities are removed—such as nicotine, ammonia, bitter extractine, &c.; and the process will serve the end for which it is designed, whether the treatment is before, during, or after the tobacco is made into plug, cigars, &c. Nicotine in composition is $H_{20}C_{14}N_2$, with no oxygen, and therefore boils and decomposes at a much lower temperature than some writers have stated. In my experiments with pure nicotine I find that it begins to boil by exposure to a degree of heat from 375° to 380° Fahrenheit. At this point the alkaloid begins to boil and turns black, and on the heat being continued it becomes a thick black residuum, like pasty lampblack. The fragrancy of tobacco does not depend on this poisonous nicotine, but on substances which require for their decomposition above 400° Fahrenheit, they being oxygenized hydrocarbons. The other noxious qualities will be destroyed as readily as the nicotine. A quantity of nicotine is carried off with the superheated steam when the temperature is but a few degrees above 212° Fahrenheit, and continues to be removed as the heat is increased; but only the surface nicotine is thus removed. To destroy the whole of the nicotine, the heat must be carried to 376° Fahrenheit, or more.

The accompanying drawing forms a part of this specification, and illustrates the apparatus with which the process is preferably practiced.

The figure shows an elevation of a steam-generator and a section of a chest or vat, in which the tobacco is to be placed.

In carrying out the invention I prefer to use the device shown in the drawing, which is a steam-generator combined with a chest, in which the tobacco is placed.

A is a sheet-iron air-tight case; B, a perforated box or chest for holding the tobacco, somewhat smaller than case A. The lid of the chest overlaps the case A, as shown, and has a lip on the inside of the case for making a tight joint.

C is the generator, provided with a valve, *g*, to allow the introduction of water or the exit of steam.

e is a pipe, provided with the cock *f*, conveying steam to the chest. The pipe enters the chest between the inner box, B, and the outer case, A.

d is a sheath in which to let down a thermometer to try the temperature. The sheath *d* is provided with an aperture near the bottom, so as to insure the same temperature both in it and outside of it in the box.

h is a handle to lift the box B out of the case A. The box B is provided with a slide on one side, which allows of removal and replacement to permit the tobacco to be put in.

Having placed the tobacco or cigars into the box B and set the box in position in the case A, the whole being set upon a stove or over a lamp, D, as shown, to superheat the steam, the generator is started, and when the thermometer in case *d* indicates 385° or 390° Fahrenheit I continue at this heat for ten or fifteen minutes. I then cut off the steam and allow the heat to moderate until it reaches about 212° Fahrenheit. Then I fill the box with steam at the temperature of 212° Fahrenheit, and let it remain until cold, in order to impart a slight moisture to the contained tobacco. The process is now completed, and when the tobacco is removed it will be ready for use, having all the noxious qualities removed, as heretofore stated. Some of the nicotine is carried off in vapor, as before stated, as soon as the temperature exceeds 212° Fahrenheit, while to completely destroy the nicotine it is necessary to run the heat up to the high degrees named.

It is practicable to practice the process with other means. I may with good effect use a jar partially filled with lard, and when it has been brought to about 200° Fahrenheit I place in it a lead-sealed jar or can having tobacco or cigars in it, and then bring the temperature up to 380° or 385° Fahrenheit. I hold it at this temperature for ten or fifteen minutes, as

before. I have in my experiments used this mode of procedure some; but I prefer that described in connection with the drawing. I believe it is practicable to attain a much better result with the steam process. The temperature should always be intense in practicing the process herein set forth, and the degrees named are found to be the best. It is, however, always essential to the complete treatment to bring the heat up to at least 360° Fahrenheit, and in some instances to 390° Fahrenheit.

What I claim is—

The process of removing nicotine and the bitter extractine from tobacco, which consists in subjecting the tobacco to heat and increasing the heat to a degree between 360° Fahrenheit and 390° Fahrenheit while the tobacco remains subjected to it, as herein set forth.

EDWARD HOWARD.

Witnesses:

EDITH A. HOWARD,

EMILY M. HOWARD.