(No Model.)

W. E. JOHNS.

PROCESS OF TREATING TOBACCO LEAVES.

No. 457,029. Patented Aug. 4, 1891.

Fig. 1.

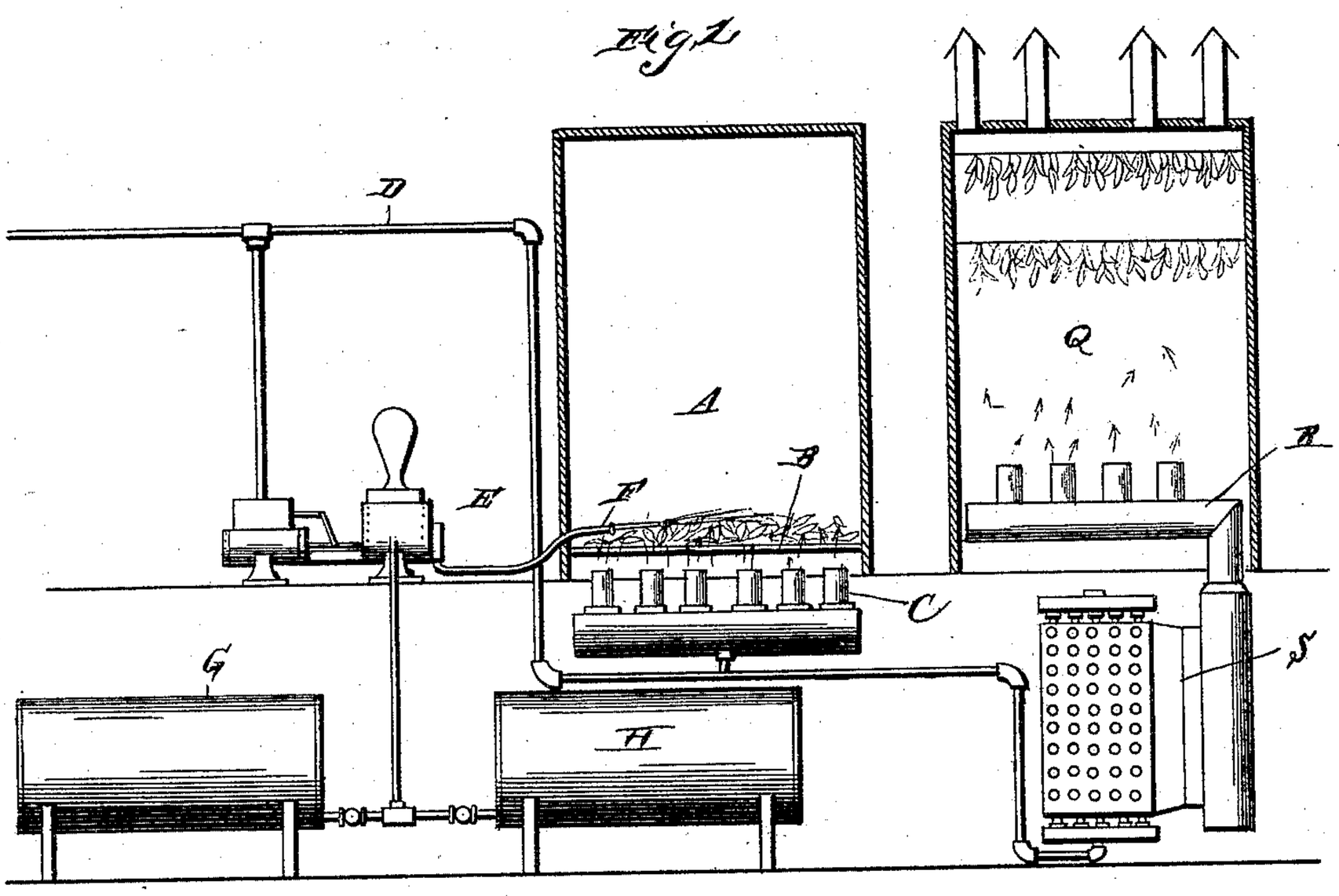
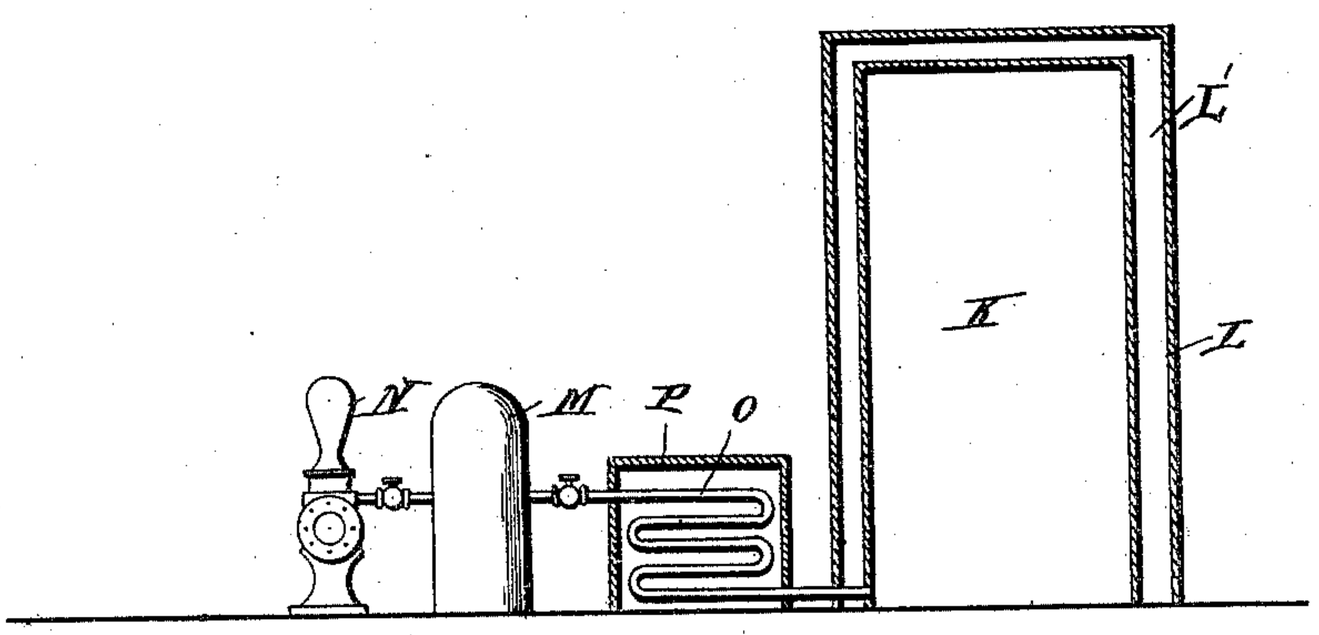


Fig. 2.



WITNESSES

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WILLIAM E. JOHNS, OF HIGH POINT, NORTH CAROLINA, ASSIGNOR TO HARRY B. TILDEN, OF SAME PLACE.

PROCESS OF TREATING TOBACCO-LEAVES.

SPECIFICATION forming part of Letters Patent No. 457,029, dated August 4, 1891.

Application filed September 14, 1889. Renewed June 18, 1891. Serial No. 396,666. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM E. JOHNS, of High Point, Guilford county, North Carolina, have invented certain new and useful Improvements in Processes of Treating Tobacco-Leaves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a new process for the treatment of the tobacco-leaf after the same has been first sun or air cured in the ordinary manner; and it has for its object to extract the acrid, pungent, biting taste which is caused by the presence of nicotianine, chlorophyl, albuminoids, malic acid, molate of lime, &c.

Heretofore in the manufacture of tobacco it has been the practice to treat the leaves after they have been subjected to the action of steam with sulphurous-acid gas in connection with carbonic-acid gas for the purpose of removing the sap and deleterious substances; also, it has been the practice to treat the leaves with sulphuric and sulphurous acid gases alternately. These gases are usually produced in the chamber containing the tobacco by burning the sulphur and other substances therein, thereby causing the leaves to be darkened or discolored by the action of the smoke, and, furthermore, when thus applied the sulphur combines with the substances in the tobacco to form insoluble compounds which it is difficult or impossible to extract.

In my improved process a sufficient quantity of tobacco is placed in a chamber having an open-work bottom and closed sides and top, where it is subjected to the action of steam for about thirty minutes, the temperature of the said chamber being kept at from 90° to 110° Fahrenheit. This steaming moistens or exhausts the tobacco and renders it soft and pliable and more susceptible to further treatment. The tobacco is then thoroughly sprinkled with an admixture of two parts of alcohol, two of sulphuric ether, and one of camelina-oil, which solution is a solvent for extracting the nicotia and other volatile alkaloids. After having been sprinkled with the above solution the tobacco is again steamed from one to two hours, the duration depending upon the quality of the leaf, thus imparting to the same a much lighter and at the same time a uniform color and freeing it from that acrid, burning, and bitter taste by eliminating a large per cent. of the nicotine, nicotianine, chlorophyl, and nitrates. The leaf is now removed to a refrigerating-chamber, where from three to six hours it is subjected to a temperature of from 32° to 22° Fahrenheit, thus drawing to the surface and crystallizing the salts and acids contained in the said leaf. After the cooling process has been completed the leaf is again placed in the steaming-chamber and sprinkled with a strong solution of bicarbonate of soda to neutralize the acidity and salts of ammonia it contains, and is again steamed for about thirty to sixty minutes. The leaves are then hung on wires in a drying-room, where by means of a hot-blast heater (or any other suitable drying apparatus) the tobacco is subjected to a mean temperature of 90° for from twenty-four to forty-eight hours, thus driving off all traces of the solvents and producing a bright-yellow tobacco, and after being bulked in the usual way to condition it or put in order can be manufactured into twist, plug, or smoking tobacco.

A′ represents the steaming-chamber, having a slatted bottom B, and C represents a series of steam-jets arranged beneath the slatted bottom and adapted to project the steam vertically through the tobacco, which is arranged on said slatted bottom. The steam-jets are connected to a steam-supply pipe D, which is connected to a reservoir. (Not shown.)

A pump E, having a spray-nozzle F, (which projects through the side of the steaming-chamber,) is connected to the tanks G H, which contain the solvent consisting of a mixture of two parts of alcohol, two parts of sulphuric ether, and one part of camelina-oil. At the proper time during the process—namely, after the tobacco has been subjected for a sufficient length of time to the action of the steam—this mixture is forced into the chamber A by means of the pump and sprayed on the tobacco.

The refrigerating-chamber K, which is surrounded, as shown, by a non-conducting jacket

L, leaving an air-space L′ between the chamber and the jacket, is connected to an air-compressor M and pump N by the service-pipe O, which at an intermediate point, passes through a reservoir P, containing a suitable refrigerating agent.

The drying-room Q is of the ordinary or any preferred form, in which are arranged the hot-air pipes R, connected to a suitable heater S.

The tobacco-leaves are first put in the chamber or steaming-room A on the open-work floor of the same, where they are steamed for thirty minutes, the steaming-room being kept at a temperature of 90° to 110° Fahrenheit. This moistens the tobacco, rendering it soft and pliable and more susceptible to its further treatment. The leaves are then thoroughly sprinkled with an admixture of two parts of alcohol, two of sulphuric ether, to one of camelina-oil, which solution is a solvent for extracting the nicotia and other volatile alkaloids. After being sprinkled with the above solvent the tobacco is again steamed one to two hours, imparting to it a much lighter and uniform color and freed from that acrid, burning, and bitter taste and containing less nicotine, chlorophyl, and nitrates. The tobacco is now removed to the refrigerating-chamber K, where from three to six hours it is subjected to a temperature of from 32° to 22° Fahrenheit, drawing to the surface and crystallizing the salts and acids therein contained. The tobacco is conveyed again to chamber A and sprinkled with a strong solution of bicarbonate of soda to neutralize the acidity and salts of ammonia it contains and again steamed for thirty to sixty minutes. The leaves are now hung on wires in drying-chamber Q, where by means of a hot-blast heater (or any tobacco-dryer) the tobacco is subjected to a mean temperature of 90° for twenty-four to forty-eight hours, driving off all traces of the solvents and producing a mild bright-yellow tobacco, which after being bulked to condition it or put it in order can be manufactured into plug, twist, or smoking tobacco.

The tobacco undergoes a fermentation only in the last step in the drying-room, as by the use of solvents (instead of many months of natural sweat or fermentation) those gummy and juicy properties contained in the tobacco are extracted.

Having thus described my invention, I claim—

1. The method of treating tobacco in closed chambers, consisting in subjecting the same to the action of steam at a temperature of 90° to 110° Fahrenheit for about thirty minutes and a chemical solvent alternately, then cooling the same in a refrigerating-chamber, then treating the same by a solution of bicarbonate of soda, and again steaming for about one to two hours, and finally drying and evaporating the same, substantially as specified.

2. The method of treating tobacco in closed chambers, consisting in subjecting it to the action of steam at a temperature of 90° to 110° Fahrenheit for about thirty minutes, then spraying the same with a chemical solvent, again exposing the same to the action of steam for about one to two hours, then exposing the same to the influence of a refrigerating agent at a temperature of 32° to 22° Fahrenheit for about three to six hours, then applying a solution of bicarbonate of soda, then steaming for about thirty to sixty minutes, and finally drying, substantially as specified.

3. The improvement in the art of treating tobacco in closed chambers, consisting in alternately subjecting the same to the action of steam and a chemical solvent composed of alcohol, sulphuric ether, and camelina-oil, substantially as specified.

4. The improvement in the art of treating tobacco in closed chambers, consisting in subjecting the same to the action of steam and a chemical solvent and subsequently cooling, then subjecting it to the action of an acid neutralizing agent, then resteaming, and drying, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. JOHNS.

Witnesses:
WILLIAM PARTRIDGE,
P. H. JOHNSON.