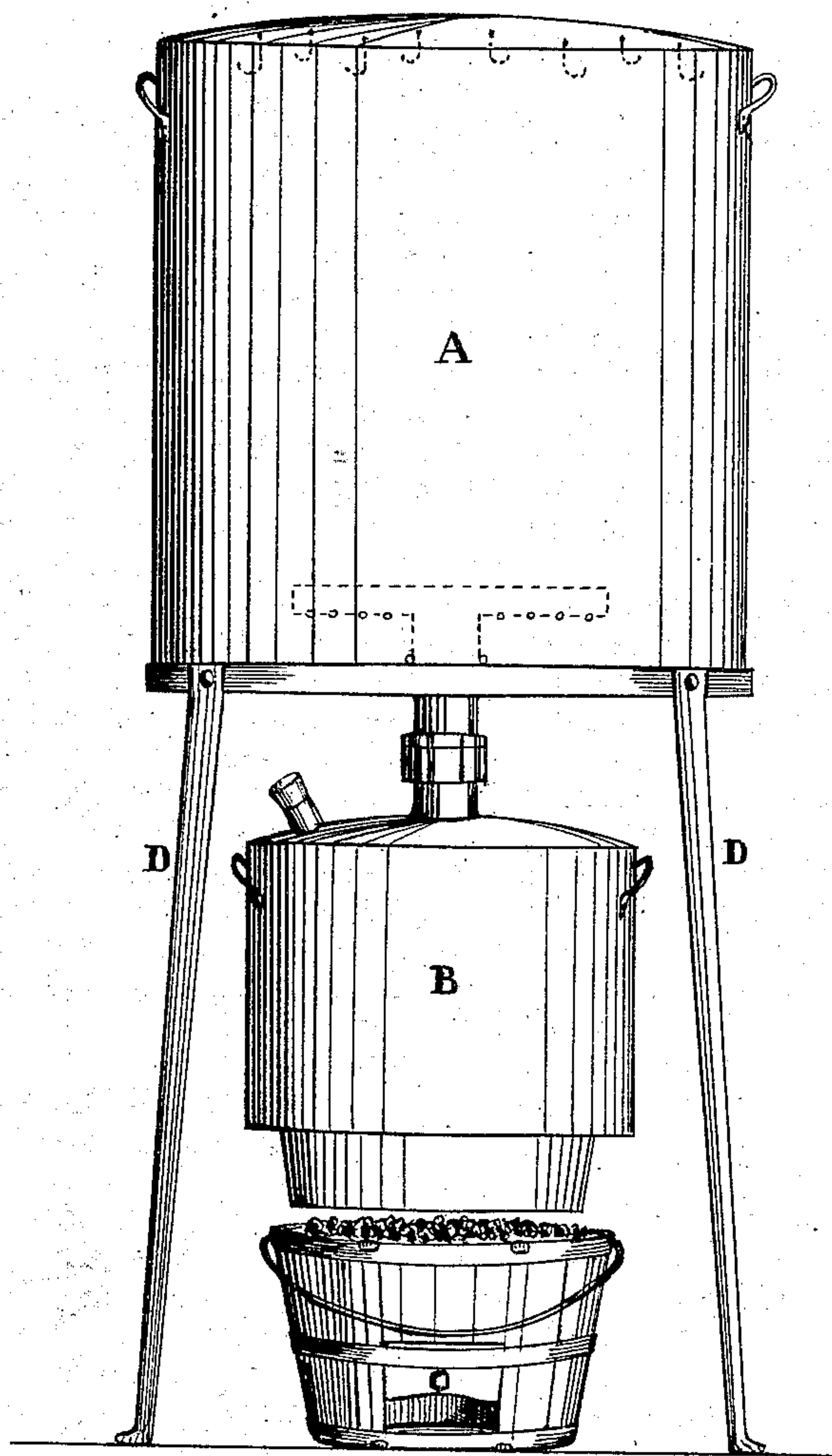


M. R. PEARSALL.  
Treating Tobacco.

No. 156,305.

Patented Oct. 27, 1874.



WITNESSES,

*Chas. G. Muncie*  
*L. O. Greenwood*

INVENTOR,

*M. R. Pearsall*

# UNITED STATES PATENT OFFICE.

MARVIN R. PEARSALL, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO  
THE NEW YORK TOBACCO COMPANY.

## IMPROVEMENT IN TREATING TOBACCO.

Specification forming part of Letters Patent No. 156,305, dated October 27, 1874; application filed April 24, 1873.

*To all whom it may concern:*

Be it known that I, MARVIN R. PEARSALL, of the city and county of New York, have invented an Improved Method or Process of Treating Tobacco, of which the following is a specification:

This invention relates to improving defective stocks of the ordinary tobacco-leaf of commerce, and to hastening the maturity of "new" tobacco; and consists in the vaporization of the chemical constituents of perfect leaf-tobacco and the forcing of such vapor into the leaves under treatment.

It is well known that crops of tobacco, wherever raised, vary in quality, immense quantities being so poor as to be unsalable, and on this account accumulating in the various markets. This inferiority consists in certain defects, (such as lack of proper color, fragrance, or the capacity to hold fire,) many of which do not manifest themselves until after the leaf is grown and housed. These defects arise from the absence of one or more of certain chemical ingredients always found in perfect leaf-tobacco, and which I introduce into the imperfect leaf by my process herein described. It is also customary to buy tobacco while yet too green for use. It is then called in the trade "new" tobacco, and requires to be kept on hand a long time, so that it may mature. By my process I hasten its maturity, and so obviate the expense and inconvenience attendant upon this delay. There is yet another class of cases where the leaf is fully matured and the ingredients essential to its value are present, yet its qualities lie dormant, because such ingredients, owing to climatic and other influences during the season of growth, have been unequally and improperly distributed throughout the leaf. My process effectually cures this inequality of distribution by agitating the said ingredients and setting them free to unite with their chemical affinities, which at the same time are forced into close proximity with them.

In carrying out this invention I mix one pound of healthy stems, of the variety or growth of tobacco as that to be treated, with one and a half ounce unslaked lime, four gills

of alcohol, and one gallon of water. Allow this mixture to stand three or four days.

Make, also, the following mixture, but keep separate until required for use: Three ounces aqua "stronger" ammonia; two drams spirits camphor; five drams sulphuric acid; two drams bicarbonate soda; three drams sulphate magnesia; one dram chloride of soda; six drams rock candy; three drams carbonate potash; two drams phosphoric acid; four drams silicic acid; two drams potash, pure; one dram nitric acid; two drams gum-arabic.

These proportions are suited to the treatment of totally defective leaf-tobacco. They must be suitably varied in cases where the defects are only partial. The degree of variation necessary may be determined by analysis or careful examination of specimens of the leaves to be treated. The quantity of material in these mixtures already given is intended for the treatment of one hundred pounds of leaf.

At the end of three days reduce both these mixtures to vapor by the action of heat, and cause said vapor to ascend into (or force it into) an air-tight chamber, in which the leaves to be treated are hung.

The accompanying drawing shows one form of apparatus used by me in the application of this process.

A is a chamber, provided with hooks for suspending the tobacco-leaves, an air-tight door at the side for inserting and removing them, and a perforated depression at the bottom for the ingress and distribution of steam. B is a boiler, connected with chamber A by a removable attachment. A projection is formed upon its top. D D are legs of supporting-frame.

The operation is, preferably, as follows: Chamber A being properly supplied with tobacco-leaves, take the first mixture (stems, lime, &c.,) and place in boiler B. Allow the vapor to pass thence into chamber A, regulating the pressure by the degree of heat applied. Infuse a flavor, if desired, at the same time. At the end of an hour place a part of the second mixture (aqua ammonia, &c.,) in the chamber A, the remainder in boiler B. At the end of another hour boiler B is disconnected, chamber A is opened, and the tobacco is allowed



to cool. It may afterward be piled and pressed to produce a darker color. Fermentation can readily be made to cease by exposure to the air. In a short time the tobacco is fit for use, when it will be found to have all the properties and value of fine growth.

I am aware that it has been attempted to improve the quality of tobacco-leaves by impregnating them with decoctions or solutions of different ingredients, both cold and hot; but the results have not been satisfactory. It is obvious that when decoctions are used the tobacco must absorb all the ingredients in them, and a large amount of water must saturate the leaf; but when the decoction is vaporized a very different molecular condition is induced, the water being in the state of steam, while the molecules of the solid substances are not considerably changed, and are carried by the steam into the leaves. This may account for the great difference in the results produced by the two processes; but whatever may be the explanation, the fact, which I claim to have discovered, is, that steam, when used as the vehicle, will convey the molecules of substances which are needed to supply defects in

tobacco-leaves, and will deposit them in the leaves when solutions will fail to do it.

It may be desirable to add to tobacco-leaves ingredients which are not found in natural tobacco, or it may be useful only to supply to some tobacco ingredients which nature has in particular cases failed to supply, and this must be left to the judgment of the operator; but whatever may be desired to be added, if it can be vaporized with steam, will be more effectually added by my process than by any other.

I have shown a form of apparatus, but it is obvious that it may be varied to suit the convenience of the operator without altering or departing from the process I have invented.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of treating tobacco-leaves by impregnating them with the ingredients conveyed to them by the pressure of steam, substantially as described, for the purpose described.

M. R. PEARSALL.

Witnesses:

CHAS. L. SPENCER,  
L. O. ROCKWOOD.