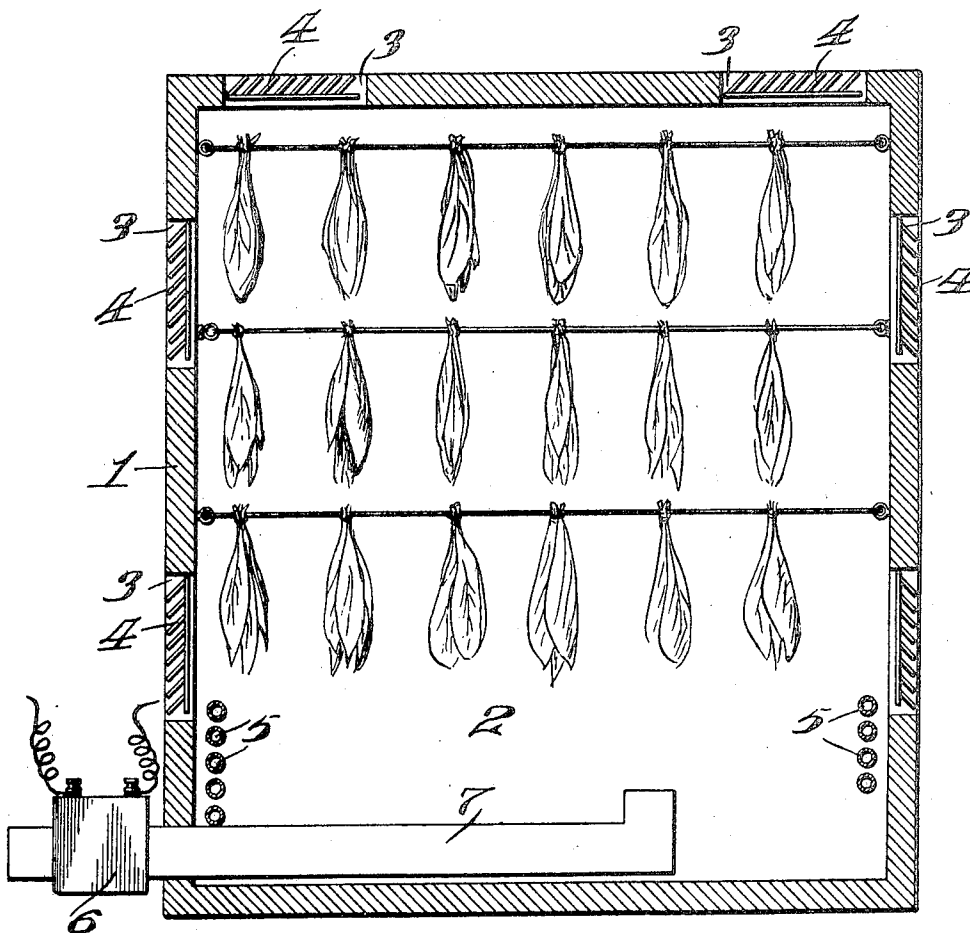


PROCESS OF AGING AND CURING TOBACCO.

942,838.



Attest.
A. C. Fletcher.
M. Smith.

Inventors.
 Stephen G. Martine.
 William O. Bartholomew.
 Edward Schaaf.
 By Widow Jangam.
 Attys.

UNITED STATES PATENT OFFICE.

STEPHEN G. MARTIN, OF CHICAGO, ILLINOIS, AND WILLIAM O. BARTHOLOMEW, OF ST. LOUIS, AND EDWARD SCHAAF, OF ST. MARYS, MISSOURI.

PROCESS OF AGING AND CURING TOBACCO.

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To all whom it may concern:

Be it known that we, STEPHEN G. MARTIN, WILLIAM O. BARTHOLOMEW, and EDWARD SCHAAF, citizens of the United States, and residents of Chicago, Illinois, St. Louis, Missouri, and St. Marys, Missouri, respectively, have invented certain new and useful Improvements in Processes of Curing and Aging Tobacco, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to a process of curing and aging tobacco, the object of our invention being to render the process more expeditious and considerably cheaper than the process now in general use.

Before proceeding with a description of our improved process, we will briefly describe the usual method or process carried out by packers in the maturing of tobacco, and which process is as follows: The leaf is received by the packer in a partially cured state, and by him it is subjected to a sweating or fermenting process in the presence of atmospheric air; this air is ever changing as to its condition of humidity, and is necessarily always of uncertain temperature. Under these conditions the packer's work becomes largely a matter of routine, rather than one of method, dependent upon nicety of skill for its successful execution, and as no exact or proven rule is laid down for the arbitrary guidance of the workman, it necessarily follows that too great a share of operation is left to chance, and much too little of said operation left to predetermined and scientific procedure to insure a high standard product of practically unvarying quality.

In the process or method to which this application refers, the essential agent employed in treating and converting the green or partially cured tobacco into the condition of maturity necessary to its marketable and industrial usefulness is modified air, such as is produced by passing currents of atmospheric air through the flame of an electric discharge. The modified air which we employ, as above stated, may be produced by passing ordinary atmospheric air through, or into the zone of, a flaming electric discharge. The gaseous body thus formed, which is found to consist of a mixture of pure air and nitrogen peroxid, is the me-

dium which we preferably employ in carrying out our process, though such medium may be produced by other methods than that suggested, as will be hereinafter set forth. In applying this modified air for the purpose above described, we utilize a suitable structure 1, inclosing a chamber 2, and in the walls and top of said structure are provided openings 3, in which are located shutters 4, by means of which the chamber 2 may be rendered practically air-tight at will. Suitable means, such as heating coils 5, are located on the interior of the housing, by means of which the temperature therein may be regulated and controlled. It has been found that a temperature approximating 100° F. is well suited to the treatment herein described though there can be considerable variation on either side of this temperature without interfering with the successful working of the process.

6 designates a suitable housing, in which a flaming electric discharge is produced, and leading therefrom into the housing or structure 1 is a discharge pipe 7 for the modified air. If desired, fans or like devices may be located on the interior of the housing for agitating and causing circulation of the modified air delivered into the chamber 2.

The tobacco to be treated is arranged upon racks or otherwise, located within the chamber 2, in such a manner as to permit each leaf to be acted upon by currents of the modified air, the duration of the treatment depending on the character of the tobacco being treated, its physical condition when first subjected to the action of the maturing agent, and the industrial uses to which it is to be employed. In practice we have demonstrated that various grades of tobacco can be properly cured in periods of time varying from 24 to 96 hours.

The modified air as employed in our process is approximately absolutely dry, and of a nature differing materially from that of atmospheric air. In our experiments and practice with the modified air we have found that it produces a substantial, marked, rapid and desirable change in the substance of the tobacco plant, and the latter is very rapidly and perfectly aged and matured. By the use of our improved process, the naturally slow process of fermentation in the plant becomes unnecessary and is actually prevented, thus promoting or hastening the

aging of the tobacco, and converting it without any loss whatever of quality, or of any desirable features into a marketable product.

- 5 While we prefer to use air modified by passing it through a flaming electric discharge as the maturing agent used in carrying out our process of aging tobacco, as air thus modified has been found to be the most
10 economical and satisfactory agent available, we do not wish to confine ourselves to the use of air thus modified, or modified by the process stated, as we may, and have, employed a gaseous medium consisting of air
15 mixed with a small proportion of peroxid of nitrogen resulting from the action of nitric acid upon ferrous sulfate, or we may employ any other gaseous product or vapor containing the oxids of nitrogen and having
20 substantially the effect herein described as being incident to air modified by a flaming electric discharge.

By employing our improved process a standard color may be obtained in the aged
25 and ripened product, and the same may be made very light or dark by varying the length of time of treatment of the product.

In some instances we may find it advantageous to enrich the air modified by a flaming electric discharge by injecting into or
30 mixing therewith certain gaseous nitrogenous oxids, liberated by the action of nitric acid or its compounds upon ferrous sulfate.

By our improved process of treating
35 green or raw tobacco, the tobacco is cured and matured without the intervention of induced or artificial fermentation of the leaf, and the physical condition of the tobacco is greatly improved and enhanced.

40 Our process expedites the maturing of green or raw and partially ripened tobacco into properly finished manufacturing products, prevents waste of refuse leaf, renders the finished product immune from mold, and
45 materially lessens the cost of treatment.

We claim:

1. The herein described process of treat-

ing tobacco, which consists in taking the
50 tobacco to be treated and placing it in a suitably inclosed chamber, and there exposing it to a gaseous medium produced by subjecting atmospheric air to the action of an electric flaming discharge.

2. The herein described process of treating tobacco, which consists in taking the tobacco and placing it in a chamber, warming said chamber in which the tobacco is located to a temperature approximating
60 100° F., and passing into said chamber a gaseous medium of pure air and peroxid of nitrogen.

3. The herein described process of treating tobacco, which consists in taking the
65 tobacco and placing it in a tight chamber, warming said chamber in which the tobacco is located to a temperature approximating 100° F., passing into said chamber a gaseous medium of pure air and peroxid of nitrogen and causing such gaseous medium to circulate within the chamber.

4. The process of treating tobacco to age it herein described, which consists in subjecting the partly or improperly aged tobacco leaves to the action of a gaseous medium consisting of a mixture of air and peroxid of nitrogen.

5. The process of treating tobacco, which consists in placing the tobacco in a suitable
80 chamber and bringing into intimate contact with the tobacco a gaseous medium containing peroxid of nitrogen, whereby the tobacco is matured and ripened without the intervention of induced or artificial fermentation of the leaf.

In testimony whereof, we have signed our names to this specification, in presence of two subscribing witnesses.

STEPHEN G. MARTIN.
WILLIAM O. BARTHOLOMEW.
EDWARD SCHAAF.

Witnesses:

M. P. SMITH,
E. P. WALLACE.