(No Model.)

E. A. BURDICK.

APPARATUS FOR CURING TOBACCO.

No. 252,926. Patented Jan. 31, 1882.

Fig 1

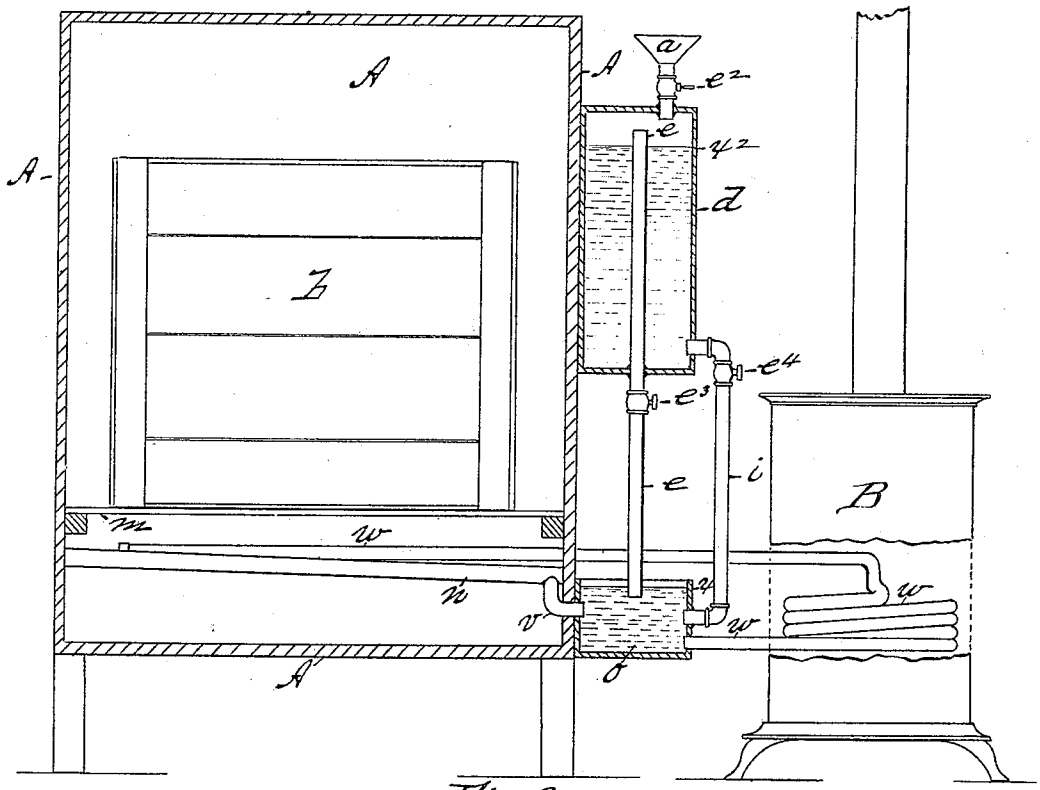
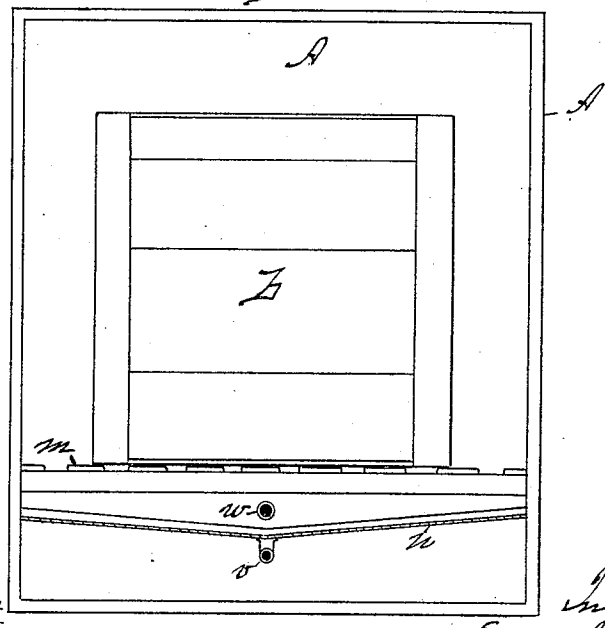


Fig 2



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR CURING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 252,926, dated January 31, 1882.

Application filed November 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, EDWIN A. BURDICK, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Apparatus for Curing Tobacco, of which the following is a specification.

This invention relates to improvements in steam-generating devices for tobacco-curing apparatus, and in devices for automatically providing an adequate and constant water-supply therefor, the object being to obviate the necessity of using an evaporating-pan in such apparatus, to provide a constant supply of water automatically supplied to the evaporating devices, and for conducting the water of condensation from the steam-chamber to a proper receptacle, from which it again passes to the steam-generating apparatus.

In the drawings, forming part of this specification, Figure 1 illustrates a tobacco-curing apparatus embodying my improvements. Fig. 2 is a view of one side of the steam-box with its outer wall removed.

In the drawings, A is the steam-box or curing-chamber. *m* indicates a slat floor therein. *n* is an inclined bottom. *b* indicates a case of tobacco. *v* is a drain-pipe. *o* is a water-receptacle. *d* is a reservoir. *e* is an air pipe. *i* is a water-pipe, leading from reservoir *d* to receptacle *o*. *w* is a pipe-coil, one end leading from said receptacle and the other terminating in the curing-chamber A. B is a stove.

The curing-chamber A is constructed of proper form and materials to constitute a suitable receptacle for the reception of one or more cases, *b*, containing tobacco, or for otherwise placing leaf-tobacco therein, and is made to retain steam, which is discharged into it, with little or no loss, having a proper door or doors through which access is conveniently had with its interior, and is provided with a slat or open floor, *m*, upon which the case *b* rests. An inclined interior bottom or floor is constructed in chamber A, which pitches from one side to the other, and each side thereof is higher than its center, thus presenting an upper surface, upon which water will be conducted to its center at one end, and at this point the drain-pipe *v* is connected to said bottom to convey water therefrom through the side of said chamber to the receptacle *o*.

A water-reservoir, *d*, constructed to be hermetically closed after having been partially filled with water, is placed by the side of the chamber A and above the receptacle *o*. Said reservoir is supplied with water through a short pipe, which is supplied with a stop-cock, e^2, and has the funnel *a* thereon, or by any other suitable means, and is filled nearly full, as shown, to about line x^2.

An air-pipe, *e*, is fixed in the bottom of reservoir *d*, and from thence one end reaches nearly to the top thereof and above the surface of the water-supply therein, and its lower end runs down into the receptacle *o*, below a fixed water-line therein, a cock, e^3, being placed in said pipe below said reservoir, whereby the passage through said pipe may be closed.

A pipe, *i*, provided with a stop-cock, e^4, connects the lower part of reservoir *d* with the water-receptacle *o*, entering the latter below the water-line *x* thereof. A coiled pipe, *w*, is placed in the stove B, the end thereof from its lower side being connected with the water-receptacle *o* just above its bottom, and the end from its upper side passing through the side of chamber A, and extending nearly across the latter over and just above the inclined floor *n*, said part of pipe *w* within said chamber having its sides perforated, as shown, and its end capped.

The operation of my apparatus in curing tobacco by exposing it to the action of steam, heat, and moisture, while inclosed in a case, *b*, is as follows: The reservoir *d* is filled with water about to line x^2, or to a height below the end of pipe *e* therein, the stop-cocks e^3 and e^4 in pipes *e* and *i* having been first closed, and the water-receptacle *o* is filled with water up to its water-line *x*. In so filling said receptacle the pipe-coil *w* in the stove B will be also filled with water through the end thereof connecting with said receptacle, the water-line *x* in the latter being somewhat higher than the upper side of said coil; also, the water in receptacle *o*, when supplied thereto as aforesaid, will seal the end of the drain-pipe *v* leading from the lowest part of floor *n* within chamber A, through the side of said receptacle,

and the ends of pipes *e* and *i* leading from reservoir *d*. The stop-cocks e^3 and e^4 in pipes *e* and *i* are now opened; but since the cock e^2 in the funnel-pipe on the top of the reservoir is closed, and the lower end of pipe *e* is closed by its being immersed in the water in receptacle *o*, the water in said reservoir cannot run through pipe *i* into said receptacle, because no air is admitted into the reservoir. The apparatus is now in a state of readiness to have a fire started in stove B, and to have a case of tobacco, *b*, placed within chamber A, to have steam applied thereto, as above described, and these having been done, it will be found that almost immediately steam will be generated rapidly in coil *w*, and discharged into chamber A through the perforated portion of said coil-pipe therein, filling said chamber and surrounding said case *b* with a dense body of steam. Much of the steam so discharged into chamber A will be condensed, and the water of condensation, falling upon the inclined bottom *n*, will be carried through pipe *v* into the receptacle *o*, whence it will again pass to the steam-generating devices, as before. When, however, through a lack of sufficient water running from said chamber, as just described, to keep up a supply in said receptacle equal to the amount drawn therefrom for evaporation, the water therein falls below the end of the pipe *e*, air is thereby admitted to reservoir *d*, and so venting the latter as to permit water to flow from it through pipe *i* into receptacle *o* until the water in the latter rises and again covers the lower end of pipe *e*, when said flowage will cease. Thus, so long as there is a supply of water in said reservoir, the steam-generating apparatus will be constantly and automatically supplied therefrom to replace any loss from supplying chamber A with steam, as above described.

It is obvious that if pipe *e* should terminate just above the bottom of said reservoir and within the body of water therein, and pipe *i* be dispensed with, that whenever the water in receptacle *o* should be drawn below the end of pipe *e* air would rush up through it and permit water to pass slowly down through it; but the fullest and most prompt supply is obtained by having the separate pipe *i* for water only. The end of the drain-pipe *v* being sealed by entering receptacle *o* below its water-line, no steam from chamber A can escape through it.

What I claim as my invention is—

The steam-chamber A, to receive within it the case *b* of tobacco, and having the inclined floor *n* and the drain-pipe *v*, leading from the latter through the side of said chamber, the water-receptacle *o*, located outside of said chamber, the pipe-coil *w*, passing from said receptacle through a suitable stove and thence into chamber A over said inclined floor *n*, and having perforations therein for the escape of steam therefrom into said chamber, and the reservoir *d*, connected with the water-supply of said receptacle by pipes, whereby the lowering of the water in the latter admits air into said reservoir and allows water to flow therefrom, all combined and operating substantially as set forth.

EDWIN A. BURDICK.

Witnesses:
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