

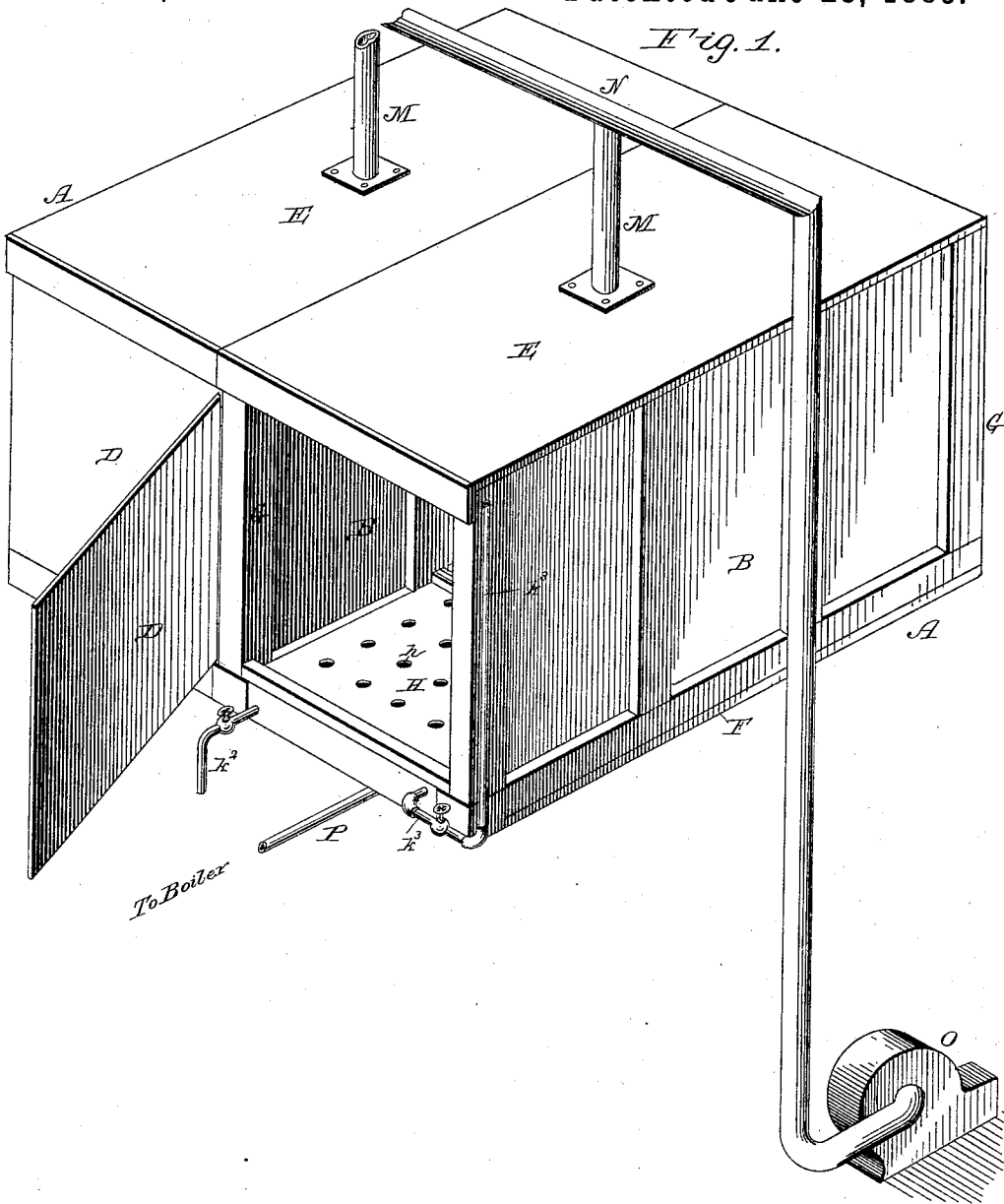
(No Model.)

2 Sheets—Sheet 1.

R. W. COFFEE.
TOBACCO DRIER.

No. 320,459.

Patented June 23, 1885.



WITNESSES

J. W. Gamm
E. Y. Tiggers

Robert W. Coffee
INVENTOR

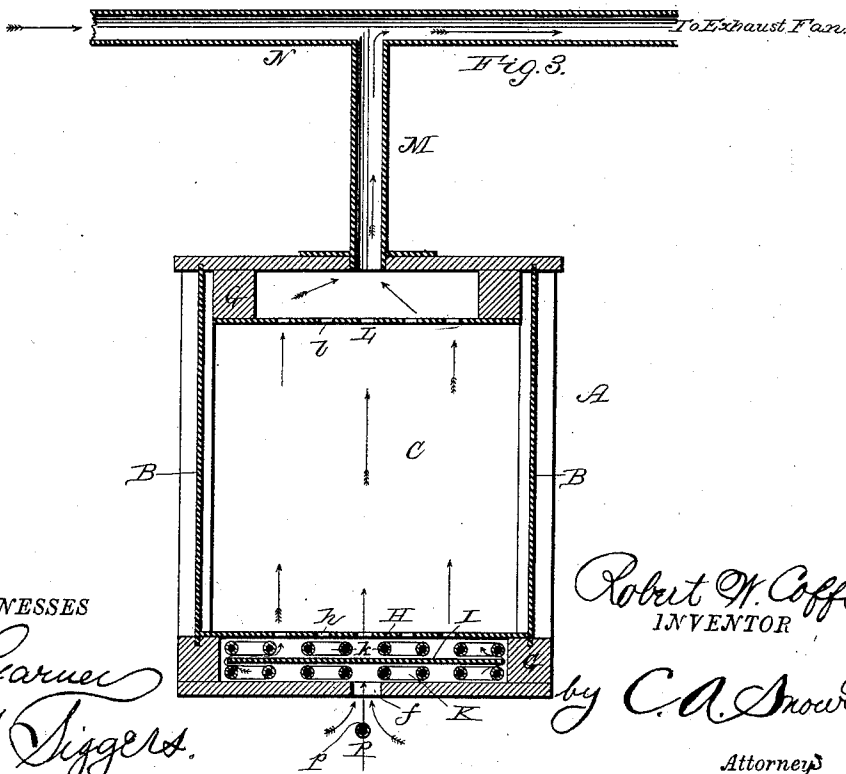
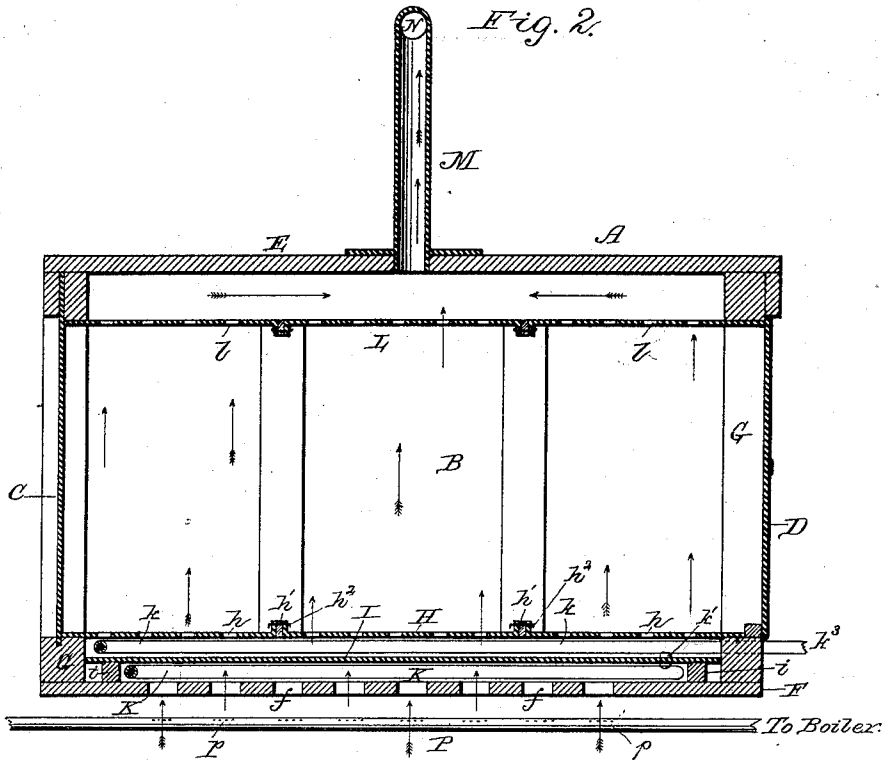
by *C. A. Snow & Co.*

Attorneys

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J. W. Garner
E. G. Tiggers

Robert W. Coffee
INVENTOR

by *C. A. Snow*
Attorney

UNITED STATES PATENT OFFICE.

ROBERT W. COFFEE, OF LIBERTY, VIRGINIA, ASSIGNOR OF ONE-HALF TO
GEORGE T. CAUTHORN, OF SAME PLACE.

TOBACCO-DRIER.

SPECIFICATION forming part of Letters Patent No. 320,459, dated June 23, 1885.

Application filed December 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. COFFEE, a citizen of the United States, residing at Liberty, in the county of Bedford and State of Virginia, have invented a new and useful Improvement in Tobacco-Driers, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in tobacco-driers; and it consists in the peculiar construction and arrangement of parts, that will be more fully set forth hereinafter.

In the accompanying drawings, Figure 1 is a perspective of my drier as ready for use. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a vertical cross-section.

A represents an apartment or drier, which consists of the sides B, the end C, door D, top E, and bottom F, and a suitable frame, G. This drying-chamber is preferably constructed rectangular in shape, but may be shaped differently, if preferred. The bottom is provided with a series of perforations, *f*, and at a suitable distance above the bottom is located a sheet-metal false bottom, H, which is perforated, as at *h*. Midway between the bottom and the false bottom is located a sheet-metal plate, I, which is equal in length to the length of the space in which it is located, so as to close said space at the ends, as shown in Fig. 2; but said plate is not so wide as the space in which it is located, as shown in Fig. 3, so as to allow the air which enters the perforations *f* to pass under the plate, around its edges, and up through the perforations *h* into the drying-chamber. This plate I is supported in place upon transverse studs *i*. Between the lower side of the plate and the upper side of the bottom is located a steam-coil pipe, K, and between the upper side of said plate and the lower side of the false bottom is located a second similar steam-coil pipe, *k*, which is connected to the lower coil, as at *k'*. The lower coil has its protruding end *k''* bent downward and provided with a valve to allow the escape of the water which is formed in the coils from the condensation of the steam, and the protruding end *k'''* is bent upward, and is also provided with a cut-off valve, as shown in Fig. 1. Through the pipe *k'''* steam is admitted from any suitable generator (not here shown) to the coils for the purpose of heating

them in the manner commonly employed for this purpose. At some distance below the top E is located a ceiling, L, which is made of sheet metal and is provided with perforations *l*. A pipe, M, extends upward from the center of the roof for the purpose of allowing the escape of the heated air from the drying-chamber.

In practice I will employ a number of drying-chambers, arranged, preferably, side by side, and in Fig. 1 I have shown two chambers so arranged, though any desired number of chambers may be used. A horizontal pipe, N, connects the upper ends of the pipes M. One end of this pipe N is connected to an exhaust-fan, O, as shown in Fig. 1, for the purpose of creating a positive draft through the drying-chambers.

The top, bottom, and frame of each of the driers will preferably be made of wood, while the sides, end, and door will preferably be made of sheet metal.

In order to facilitate the removal of the false bottom, in order to get access to the steam-coil pipes, I form said false bottom of sections, the adjacent edges of which are upturned at right angles. In between these upturned edges are placed wooden strips *h'*, and wires or bolts *h''* are then passed through said edges and the wooden strips, in order to secure the sections of the false bottom together. This construction I have shown in Fig. 2. The ceiling will preferably be constructed in the same manner, as shown. A steam-pipe, P, extends along the under side of each of the drying-chambers at a suitable distance below them, and these pipes are provided with perforations *p* on their upper sides in line with the perforations *f*, as shown, and are connected to the boiler.

The operation of my drier is as follows: The tobacco is placed in the drying-chambers and the doors closed. Cold air enters through the perforations *f* and becomes heated by the steam-coil pipes, and passes up around the plate I, and is distributed evenly and caused to pass upward through the perforated false bottom into the chamber and through the tobacco, and thoroughly dries and cures the tobacco without injury to the essential oils, color, or quality thereof. The exhaust-fan causes a rapid movement of the heated air through

the tobacco, and cures and dries it very rapidly.

A difficulty that has heretofore been encountered in preparing tobacco is that when cured and dried the tobacco becomes very brittle, and is extremely liable to become broken and crushed while being handled. In order to remedy this, I have provided the steam-pipes P, previously described, which, being perforated and connected to the boiler, cause a current of vaporized steam to pass up through the perforations of the bottom of the chambers into them, and thoroughly impregnates the tobacco therein and moistens and softens it to the requisite degree.

I am aware that steam-pipes have been heretofore employed for the purpose of subjecting the tobacco to the moistening action of the steam, and this, broadly, I disclaim.

In my apparatus I locate the steam-pipe outside of the chamber, so that the steam from the pipe mingles with the air in its passage through the tobacco in the chamber, and thereby reduces the air to any requisite temperature.

In preparing tobacco for shipment to any distant point it is necessary to dry it with reference to the prevailing temperature at that point, as otherwise the tobacco will be likely to undergo a sweating process when it reaches its destination, and become spoiled.

In the drawings I have indicated the currents of air by feathered arrows, and the currents of vaporized steam by arrows which are not feathered.

If desired, the steam-pipes may be located

above the drying-chamber, instead of below it, as described, and the currents of air and steam be caused to pass downwardly through the tobacco, instead of upwardly there-through, as this causes precisely the same effect.

Having thus described my invention, I claim—

1. A drying-chamber having a perforated bottom, a perforated false bottom, and a perforated ceiling, steam-pipes which are located below the false bottom, and a plate which is placed between said steam-pipes for the purpose of distributing the heated air evenly below the false bottom, substantially as described.

2. A drying-chamber having a perforated bottom, a perforated false bottom, and a perforated ceiling, steam-pipes which are located between the bottom and the false bottom, and a plate located between said steam-pipes for the purpose of distributing the heated air evenly below the false bottom, means for creating a draft through the chamber, and a perforated steam-pipe which is located below the chamber for the purpose of discharging vaporized steam into the chamber, substantially in the manner and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ROBERT W. COFFEE.

Witnesses:

WM. N. MOORE,
EDWARD G. SIGGERS.