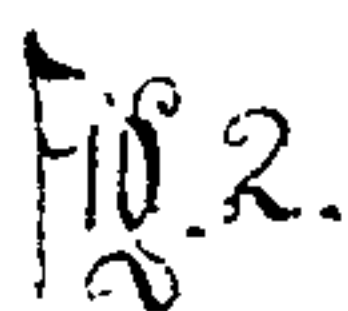


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HENRY R. ROBBINS, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF AND J. J. MORAN, OF SAME PLACE.

Letters Patent No. 93,347, dated August 3, 1869.

IMPROVEMENT IN TOBACCO AND GRAIN-CURER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY R. ROBBINS, of the city and county of Baltimore, and State of Maryland, have invented a new and improved Tobacco and Grain-Curer and Artificial-Season Producer; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical transverse section through line *x x* of fig. 2.

Figure 2 is a horizontal section through line *y y* of fig. 1.

The object of this invention is to construct an apparatus by which tobacco or grain can be artificially cured, in an exceedingly short time, not only without impairing its good qualities, but in such a manner as to produce, with certainty and uniformity, an article of cured tobacco, superior in appearance, fragrance, and taste, to that cured from the same material by any other known process. To this end,

My improved apparatus is so constructed and arranged, that, by means of it, the tobacco can be moistened and then dried, at any required temperature, the degree of moisture and heat being always under the control of the operator, and an equable draught and circulation of air being always maintained.

In the drawings—

A represents the outer and A¹ the inner wall of the building, in which the operation of curing is to be conducted, said walls being so arranged as to leave an air-space or tube, *a*, all around, or any part of the building, open at its top, on the inside of the house, under the roof A².

The inner walls may be strengthened by braces B B, extending across the building, or connected to the outer wall, as preferred by the builder.

C is a chimney, near the centre of the building, the lower end of which is connected to the bottom of the air-space *a* by means of flues F F, or pipes, at or beneath the floor of the building, which flues or pipes may be extended to near the roof, to answer instead of the inner walls.

D is a furnace, connected to the chimney by a smoke-flue, *d*, and being constructed with double walls and floor, so as to have a water-space, *e*, all around, below, and, if required, above the fire, whereby the full effect of the latter will be exerted upon the water, and as great an amount of steam as possible generated.

This steam is conducted away by a pipe, G, having an open branch, *g*, by which the steam may be let out into the interior of the building, and having, also, a branch, *g'*, leading into the chimney, by means of which the steam, or any portion thereof, may be blown off into the chimney, and thereby caused to create a

strong draught up through the latter, the effect of which will be, at the same time, to increase the intensity of the furnace fire, and to create a circulation of air from the interior of the building into the space *a*, and thence, through the flues F F, into the chimney.

The branch *g'* must have a valve, *i*, and the branch *g* should also be provided with another, *i'*, above the point where the two parts connect.

The apparatus may be provided with a steam-gauge, E.

Along one side of the building, is a water-tank, H, connected with the lower part of the furnace by a pipe, *h*, so as to supply water for the generation of steam.

Above this tank, is another, I, supplied from any proper source, and communicating with the tank H, by means of a pipe, J, having a cock, *j*, the water being introduced into the lower tank from the upper, if necessary, the supply being controlled and regulated by the cock.

The apparatus may be so constructed that rain, or the drip from the roof, either outside the building or within, will be conducted into one of the tanks, preferably the upper one.

From the upper tank, a pipe, K, extends slightly downward to a sprayer, L, above the furnace, from which a jet of water may be sprayed upon the top of the furnace, (as shown in red, fig. 1,) and instantly converted into steam, the supply to the sprayer being controlled by a cock somewhere between the latter and the tank.

In order to prevent the water from dripping off of the furnace, the top of the same may be surrounded by a vertical flange, *m*. The better construction would, perhaps, be to make its top in an arched form, as seen in fig. 1, surrounded on each side with the upright flange, and having drip-vessels, *o o*, provided under the eaves, as shown in fig. 2.

The furnace itself may be made of wrought-iron, so as to endure any degree of heat, pressure of steam, or change of temperature, without breaking; and it may be constructed in sections, so that it can be enlarged or diminished, if necessary, inasmuch as the size of the furnace must be adapted to that of the building in which it is employed, and the amount of work required of it.

Instead of the braces B B, rods, adapted to support the tobacco that is to be cured, may alone be used, and these may be disposed in any order that may prove most convenient, and economical of space.

If there should be any drip between the walls A A¹, a cock may be provided at the bottom of the space *a*, for drawing off the water of condensation.

The whole apparatus is simple, and easily operated by any common laborer. Its effect, in the curing of

tobacco, has been practically tested by a long series of experiments, and demonstrated to be of the greatest utility.

The tobacco can be first put in season by moisture, or moderately steamed to any required extent, and at any degree of heat requisite. The sprayer may then be shut off, the cock *i'* closed, and the cock *i* opened, throwing the whole of the steam into the chimney, and creating such an atmospheric draught from the furnace, on one hand, and through the space *a* and flues *F F*, on the other, as will instantly augment the heat of the furnace to a great degree, while the damp air inside of the building is forced into the chimney and carried off, its place being supplied by pure, fresh air; introduced, at suitable points, through valves or dampers, provided for the purpose.

Thus, from a condition of great heat and dampness, the air can, in a few minutes, be changed to one of great dryness, and of any degree of heat required, the heat being regulated both by a damper in the flue *d*, as well as by cold-air dampers in the walls, floor, or roof of the building.

When these various conditions are properly brought to bear upon the tobacco, it will be cured in such a manner as to give it a delicious flavor and fragrance, and that rich golden hue, which is itself a mark of the best quality of the manufactured article.

Tobacco that has been improperly cured by other

processes, so that its market value has been diminished, can be thoroughly restored, and rendered a first-class article, by the proper use of the means above described.

By this apparatus, a planter may cut, strip, and cure his tobacco, and have it in market the same season. Without this means, he will get it to market when his neighbors do, and when the great quantity on hand reduces the price; but, availing himself of the above invention, he will supersede his neighbors, and be in time to secure the highest market price.

Having thus described my invention,

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

1. The combination of the double walls, having the space *a* between them, with the flues *F F*, chimney *C*, furnace *D*, having a water-space or boiler *e*, and pipes *G g g'*, when constructed and arranged to operate substantially as and for the purposes specified.

2. In connection with the furnace *D*, and arranged within a tobacco-curing house, *A A'*, the employment of the tanks *I H*, and pipes *h J K*, arranged substantially as described, so as to be adapted to the purposes herein specified.

HENRY R. ROBBINS.

Witnesses:

A. HAWKINS,
JOHN V. EMICH.