(No Model.)

J. K. HARDWICKE & E. B. WELLES.

TOBACCO DRIER.

No. 318,729. Patented May 26, 1885.

Fig. 1.

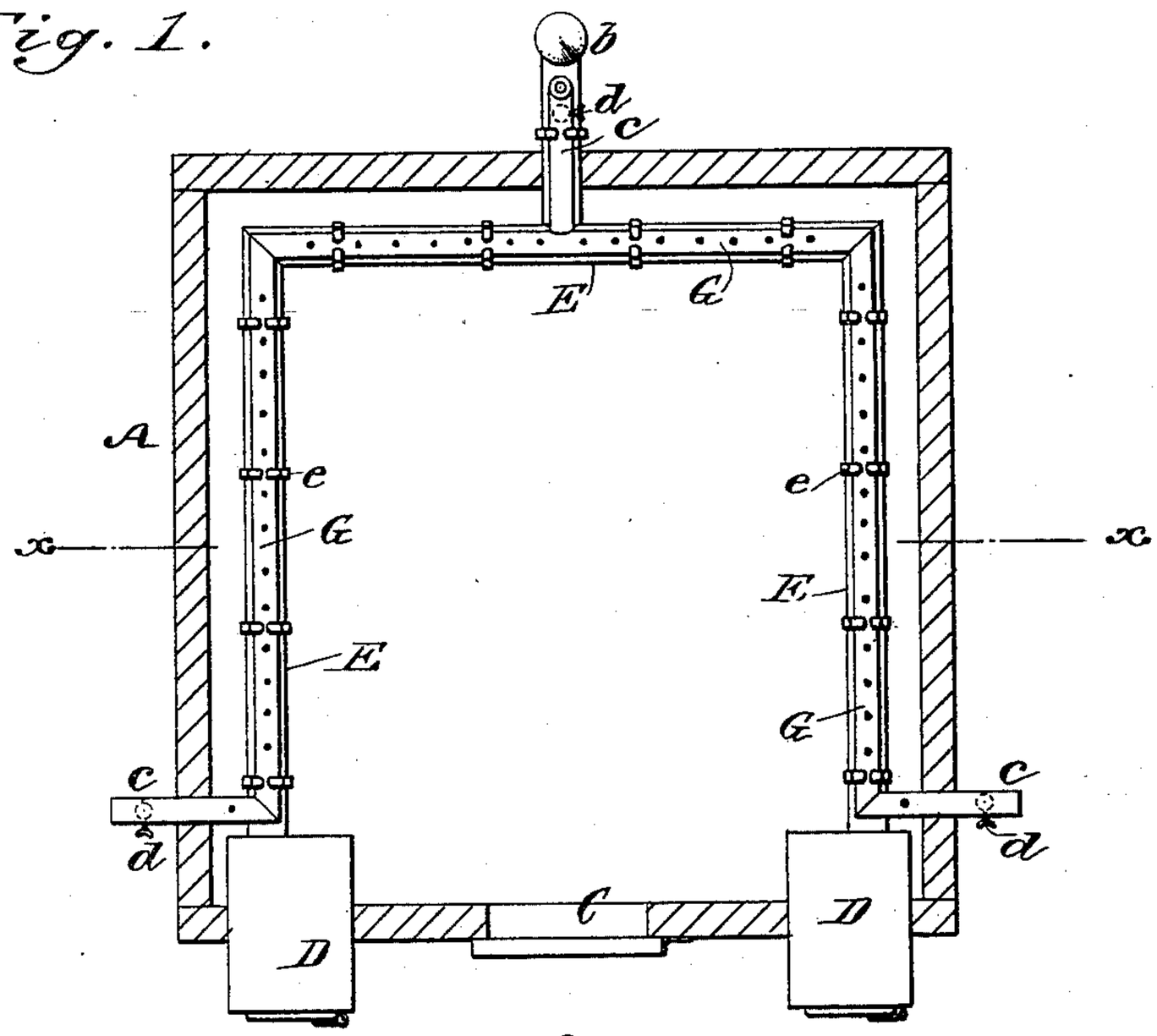
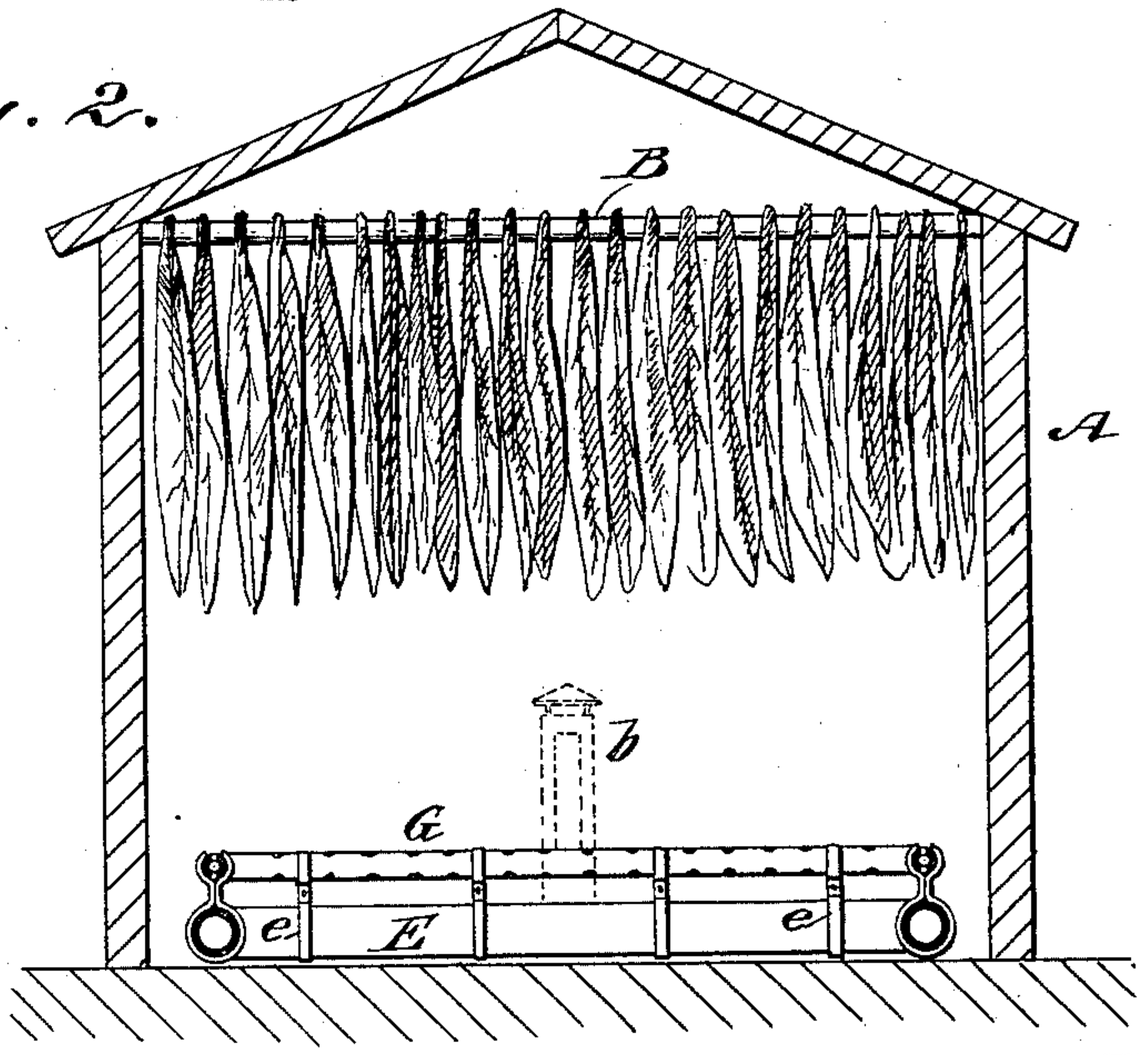


Fig. 2.



WITNESSES:

John A. Deemer

C. Sedgwick

INVENTOR:

J. K. Hardwicke

E. B. Welles

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES KINZER HARDWICKE AND EDWARD BENTON WELLES, OF MARSHALL, NORTH CAROLINA.

TOBACCO-DRIER.

SPECIFICATION forming part of Letters Patent No. 318,729, dated May 26, 1885.

Application filed December 4, 1884. (No model.)

To all whom it may concern:

Be it known that we, JAMES KINZER HARDWICKE and EDWARD BENTON WELLES, both of Marshall, in the county of Madison and State of North Carolina, have invented a new and Improved Heat-Regulating Attachment for Flues used in Curing Tobacco, of which the following is a full, clear, and exact description.

The object of this invention is not only to save time, labor, and expense in curing tobacco, but also to secure a uniform color thereto, and to prevent sweating and spotting, likewise to cure out the stalks and stems.

Bright tobacco, to which our invention more particularly applies, is usually cured in barns made of logs, the tobacco being hung on sticks across tier-poles and as close as it can be placed without obstructing the ascending current or currents of heated air. The sides of the barn are made air-tight by filling up the spaces between the logs with mud, and the roof, which is made of rough boards, has been constructed to leave numerous apertures for the escape of the upward current of heated air. Such barn has a door in the center of one of its sides, and on each side of the door are arranged furnaces made to extend about three feet through the wall into the inside of the barn, and to connect with sheet-iron heat-distributing pipes of large capacity, which extend round the barn on the floor thereof and at a short distance from the log walls, and back through the middle and out through the wall over the door or at one side of it. This construction fails to provide for the admission of cold air to the lower part of the barn to take the place of the upward current of hot air, excepting the door be opened, when too much air will be admitted, and this all at one point, and, being cold, in coming in contact with the hot moist tobacco damages its color. If the door remains closed, there is no ingress for the cold air from the outside, excepting through or between the boards of the roof, and this coming down the sides of the barn stops the current and keeps the tobacco in a damp sweat, which gives the leaf a dark color, and greatly reduces its market value. Furthermore, in such an arrangement, the air immediately over the hot-air pipes from the furnace becomes very much more highly heated than the air at other parts of the barn, thereby causing the tobacco to be scorched or scalded at certain parts and to be insufficiently heated at others.

Our invention obviates these defects and provides for a perfect regulation of the heat; and it consists in arranging a numerously-perforated cold-air pipe or pipes over the hot-air pipe or pipes, said cold-air pipe or pipes having suitable inlets for admitting air from the exterior and valves for regulating its ingress and draft. This disperses the air over the barn, and produces a more equable distribution of the heated air, and so prevents scalding of the tobacco and cures out the leaf, stem, and stalk in very much less time and more uniformly than has heretofore been done, the saving of time being doubly important, inasmuch as the quicker the sap is evaporated the brighter will be made or cured the tobacco.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a horizontal section of a barn suitable for curing tobacco having our invention applied, and Fig. 2 a vertical section of the same on the line *x x* in Fig. 1.

A is the barn, and B one of the poles or stretchers extending across it near the roof, on or from which the tobacco to be cured is hung.

C is the door of the barn, and D D the furnaces from which hot air is passed and made to circulate through a pipe, E, of enlarged capacity on or near the ground and arranged around and at a slight distance from the walls within the barn. The pipe communicates with the outside air through a branch in the rear connected with a capped up-take or outlet, *b*, for maintaining the draft.

Arranged almost immediately above this hot-air or heat-distributing pipe or tier of pipes E, and running parallel therewith, is a smaller pipe or tier of pipes, G, thickly perforated throughout their length, and communicating with the exterior of the barn by opposite side branches *c* in front, and a similar center branch *c* in the rear, provided with dampers or valves *d*. This perforated pipe G, which may be supported by the hot-air pipe or flue E through or by means of straps *e*, serves to

distribute the cold air over and through the ascending currents of heated air from the pipe E, and to keep up or promote such rapidly-rising current or currents to the prevention of all scorching or scalding of the tobacco, and to the more perfect and equable curing out of the leaf, stalk, and stem of the plant throughout the whole mass in very much less time than the same could have been less perfectly done under the old process. The dampers *d* serve to regulate the admission of cold air to the greatest nicety that the condition of the plant or other circumstances may require.

While preferring the arrangement shown and described for the hot and cold air pipes relatively to the floor and walls of the barn, and to use double furnaces, we do not restrict our invention to such precise arrangement and number of furnaces, as a single furnace and different arrangement of heat-distributing pipes or flues with perforated cold-air pipes mounted over them might be used.

The barn may be of the usual or any other suitable construction.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In structures for curing tobacco, the combination, with the hot-air or heat-distributing pipes arranged within the building, of a perforated cold-air pipe or pipes arranged over or in proximity to said hot-air pipes throughout or in direction of their length, substantially as specified.

2. In structures for curing tobacco, the combination, with one or more furnaces and heat-distributing pipes therefrom arranged within the building, of perforated cold-air pipes mounted over said heat-distributing pipes and provided with inlets and valves controlling the admission of air thereto, essentially as and for the purposes described.

3. The combination, with the barn A and its poles or stretchers B, for suspending the tobacco to be cured, of the furnaces D D, the heat-distributing pipe E therefrom, and the perforated cold-air pipe G, mounted over the heat-distributing pipe and provided with inlet branches *c* and dampers or valves *d*, substantially as shown and described.

JAMES KINZER HARDWICKE.
EDWARD BENTON WELLES.

Witnesses:
L. R. JONES,
W. W. LANCE.