

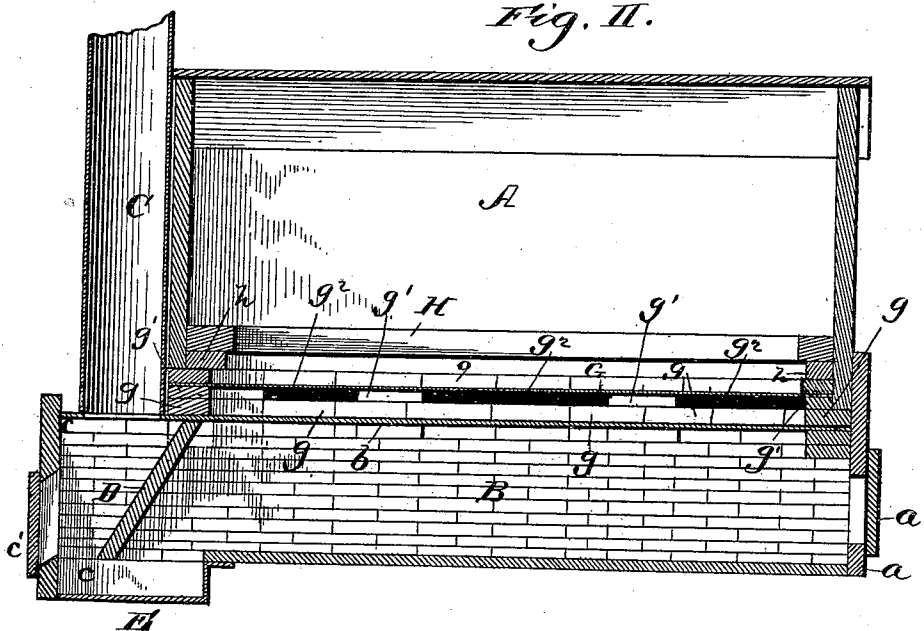
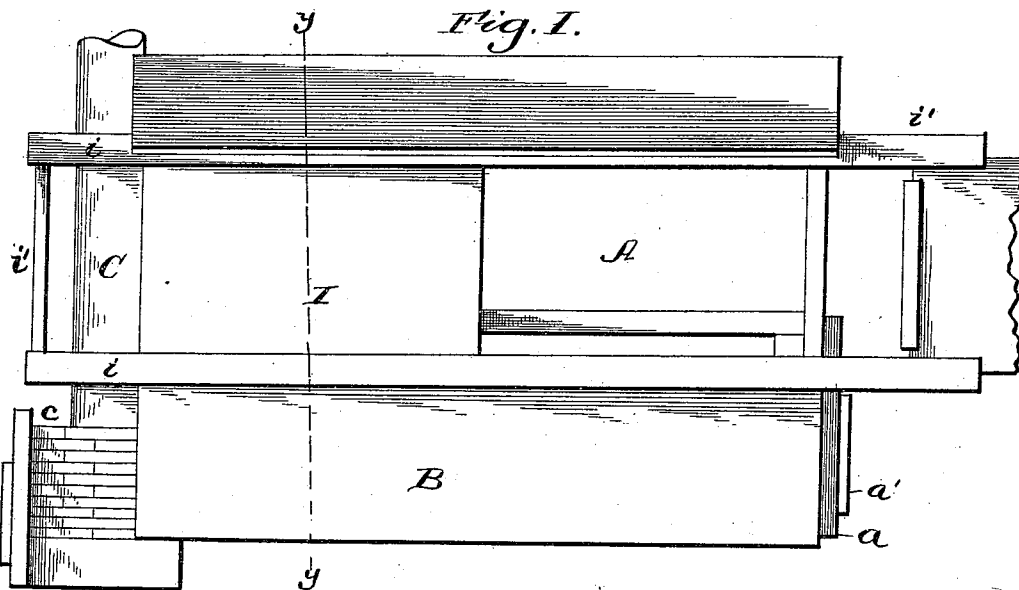
(No Model.)

2 Sheets—Sheet 1.

J. C. HAY.
LUMBER DRIER.

No. 473,116.

Patented Apr. 19, 1892.



Witnesses:
J. B. McGirr.
William O. Belt

Inventor:
John C. Hay
By his Attorneys,
Edwin Bros.

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Fig. III.

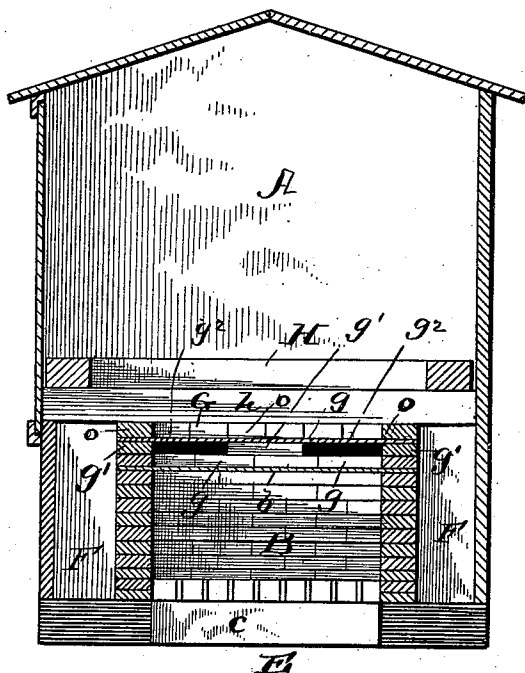
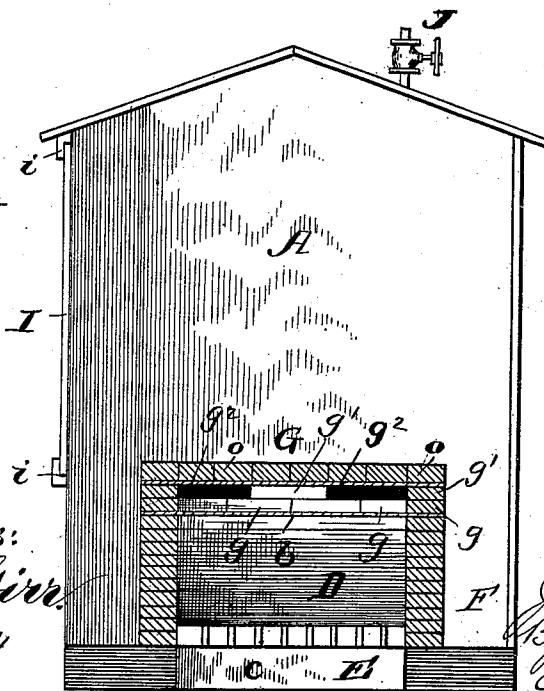


Fig. IV.



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UNITED STATES PATENT OFFICE.

JOHN C. HAY, OF KINSTON, NORTH CAROLINA, ASSIGNOR TO HIMSELF AND SOLOMON OETTINGER, OF SAME PLACE.

LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 473,116, dated April 19, 1892.

Application filed June 6, 1891. Serial No. 395,288. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HAY, a citizen of the United States, residing at Kinston, in the county of Lenoir and State of North Carolina, have invented certain new and useful Improvements in Lumber-Driers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in lumber-driers; and the object is to provide a simple and easily-constructed drying-house in which lumber or tobacco can be dried by heat generated in a furnace which is located beneath the same.

With these ends in view and such others as pertain to my invention it consists of the peculiar construction and arrangement of parts, as will be fully described and pointed out hereinafter.

To enable others to more readily understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure I is a side elevation of my improved drier with one of the doors removed. Fig. II is a longitudinal sectional view. Fig. III is a transverse sectional view taken on the line *y y* of Fig. I, and Fig. IV is a rear end elevation of the drier with the door and front piece removed.

Referring to the drawings, in which like letters of reference denote corresponding parts in all of the figures, A designates the drying house or structure, and in the lower part thereof the furnace B is located, which extends from end to end of the structure. A metallic front piece *a* is secured on the front of the furnace to close all the openings, and said front piece is provided with a door *a'*, through which fuel is adapted to be fed to the furnace. The base *c* of the smoke-stack C is arranged directly in rear of the furnace B, and the furnace-chamber opens directly into the base *c*. A deflector D is secured at the upper juncture of the base *c* with the furnace proper, and it extends downwardly across the stack-opening toward the door *c'*. A water-receptacle E is secured in the bottom of the base *c* of the smoke-stack, and it

is located below the level of the furnace-floor. By this arrangement all the smoke and sparks which issue from the furnace are turned down by the deflector D into the water in the receptacle E and the smoke passes upward and out of the stack. Thus the danger of sparks passing out of the stack and setting fire to the drying-house or other structure is completely obviated, and at the same time the volume of smoke is greatly diminished.

The furnace B is provided with a metallic top piece *b*, which extends rearwardly from the furnace through the structure and across the top of the smoke-stack base *c*, and the smoke-stack C is built on this base in a manner well known in the art. Air-spaces F are left on either side of the furnace between the sides thereof and the sides of the structure, and a furnace-grate of suitable form and construction is arranged in the front portion of the furnace.

In order to prevent the heat and the heated top plate of the furnace from coming in contact with the lumber or tobacco and injuring the same, I make the bottom G of the drying-chamber of sheet-iron, which lies above the furnace and extends from end to end of the structure A, said bottom G forming a heat-equalizing chamber above the furnace. A layer of tile or bricks *g* is placed on the edges of the top *b* of the furnace, and on this layer at suitable intervals are placed one or more bricks *g'*, thus leaving openings *g²* between them for the heat to pass through. The bottom G of the drying-house is secured on these bricks *g'*, and the heated air collected in the chamber above the furnace can pass out through the openings *g²* and then upward and through the lumber. This is advantageous and desirable, because the top of the furnace, if in contact with the lumber, would be liable to set fire thereto or injure it in other ways; but by providing the equalizing-chamber above the furnace this danger is avoided. Around the edges of the metallic plate G is a layer of bricks or other refractory material *o*, and the ways *h* are arranged thereon, as shown in Figs. II and III. The lumber is piled on a movable rectangular frame of a truck H, which is run into the drying-house through an opening in one side

thereof on the ways *h*, secured on the ends of the structure. The opening in the side of the drying-house is adapted to be closed by suitable doors *I*, which are arranged to slide in the ways *i* in a frame *i'*, secured on the side of the drying-house, and this frame projects beyond the ends of the house a short distance to permit the doors to be run back in the ways and leave the opening entirely unobstructed, so that the truck *H*, carrying the lumber, can be removed. A safety-valve *J* is provided on the top of the drier to allow the steam to escape when it accumulates in the drying-chamber.

It is obvious that my improved drying-house can be used for many other purposes than drying lumber—as, for instance, drying tobacco—and I can also connect the structure with a dwelling by means of pipes to heat the latter, if desired.

One of the principal advantages of this structure is that it will dry the lumber by hot-air and not by smoke, as is usually the case, and thus the life of the lumber is not destroyed; but the lumber when dressed will present a glossy appearance and be easy to work; also, if the drying-house should accidentally be set on fire on the interior thereof the smoke will put the fire out, as the house is practically air-tight.

I am aware that changes in the form and construction and arrangement of parts can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a lumber-drier, the furnace-chamber *B*, a drying-chamber *A*, the metallic plate *b*, arranged above the furnace, a layer *g* of refractory material around the edges of said plate, the blocks *g'* of refractory material, arranged at intervals on said layer to leave the openings *g''*, another metallic plate *G*, placed on the blocks *g'* and forming with the plate *b* a heat-equalizing chamber between them, and a layer *o* on the top of the plate *G* to receive the ways *h* and prevent them from contacting with said plate, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN C. HAY.

Witnesses:

E. S. PITTMAN,

J. L. HARTSFIELD.