

W. L. BURTON & H. MEYERDING.

LUMBER DRIER.

No. 521,846.

Patented June 26, 1894.

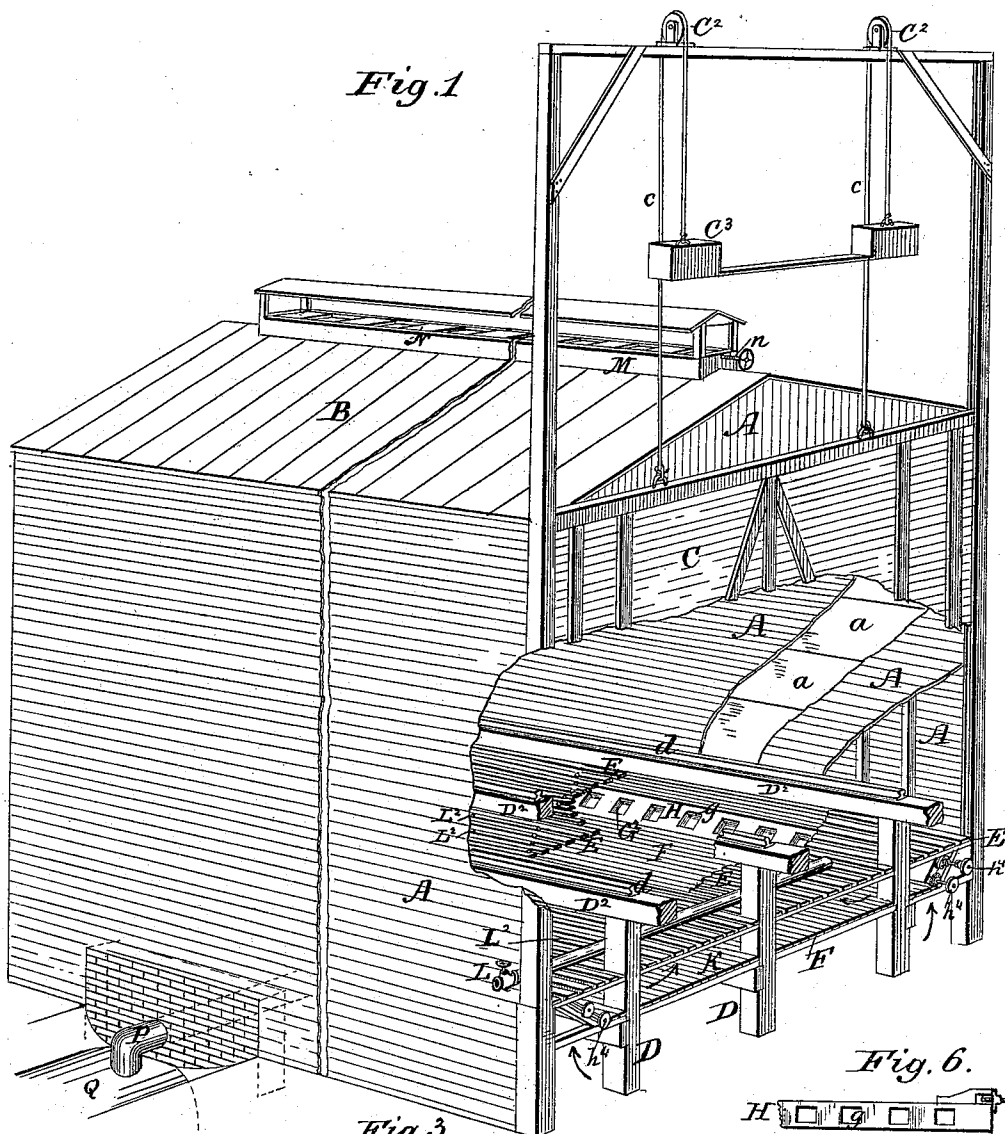


Fig. 1

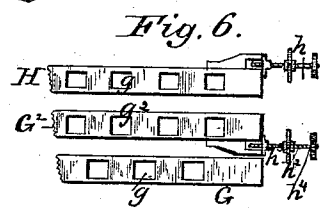


Fig. 6.

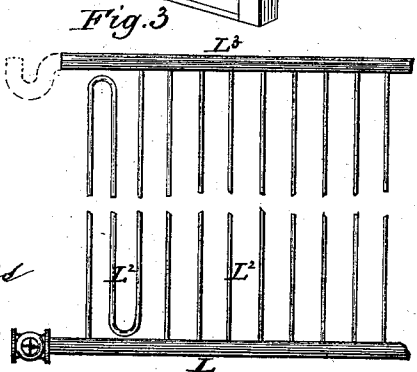


Fig. 3

Witnesses:

*A. B. Deeges*  
*Ralph A. Hopper*

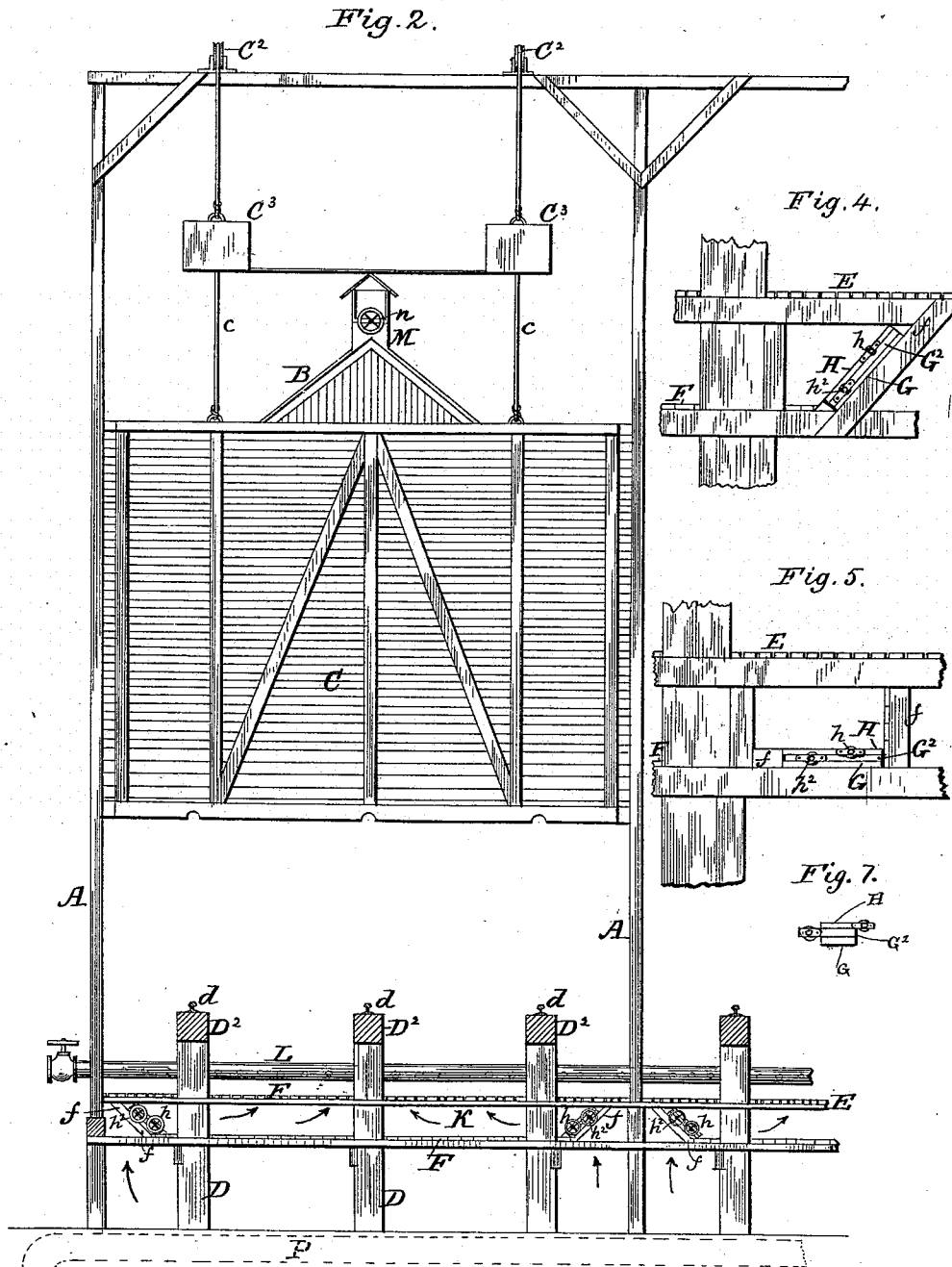
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# UNITED STATES PATENT OFFICE.

WILLIAM L. BURTON AND HENRY MEYERDING, OF NEW ORLEANS,  
LOUISIANA.

## LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 521,846, dated June 26, 1894.

Application filed April 1, 1892. Serial No. 427,351. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM L. BURTON and HENRY MEYERDING, citizens of the United States, residing at New Orleans, in the parish of Orleans, State of Louisiana, have invented certain new and useful Improvements in Lumber-Driers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 Our invention relates to that class of driers that are used mainly to dry lumber, and the objects of our improvements are to regulate the admission of air and its uniform distribution, either the whole length, or a portion of the length of the drier, to avoid checking the green lumber when placed therein. We attain these objects by the construction illustrated in the accompanying drawings, in which—

20 Figure 1 is a perspective view of a lumber drier shortened and partially broken away to show the parts constructed in accordance with our invention. Fig. 2 is a front elevation of the same. Fig. 3 is a top view, shortened, of the steam pipes or manifold used in heating the drier. Fig. 4 is a front view on a larger scale of a portion of the air box and its air valves. Fig. 5 is a corresponding view with the location of the valves modified. Fig. 25 6 is a top view of the air valves. Fig. 7 is an end view of said valves.

In said drawings A, represents the walls, which are preferably made of lumber suitably framed, lined on one or both sides with 35 planks and heavy paper *a*, and packed with saw-dust. The roof B is also made preferably of two thicknesses of boards with saw-dust packed between them.

40 The ends of the drier are provided as usual with doors C, that occupy the whole width of the drier and are adapted to slide up and down when desired, being suspended from ropes *c* passing over pulleys C<sup>2</sup>. Weights C<sup>3</sup> attached to the opposite end of these ropes 45 *c* nearly counterbalance the doors.

Resting upon posts D placed at suitable distances apart, are rail-sleepers D<sup>2</sup> extending the length of the drier, and on top of said sleepers, the rails *d* are spiked, that carry 50 the lumber trucks. About twelve to twenty-four inches below the bottom of the sleepers

D<sup>2</sup>, is placed the open floor E which consists of narrow strips or slats about an inch thick and two inches wide, square edged and laid parallel with the sides of the drier, being supported on light transverse joints secured to 55 or otherwise supported by the posts D. The narrow square edged slats of the floor E are so laid and secured to the joists as to have spaces about one eighth of an inch wide between the slats, through which the air that 60 is to be admitted into the drier is obliged to pass; the total of openings being substantially equal to the openings in the valves and thus a substantially perfect distribution of the air 65 let in is obtained; said distribution being essential to the uniform drying of lumber. The slats may also have perforations for the passage of air through them. About twelve inches below the floor E is placed a tight floor F 70 which consists of matched flooring resting upon light joists supported by the posts D. This floor F preferably does not extend horizontally the whole width of the drier, it stops about two feet from its sides, where its joists 75 are united to the joists of the open floor E by short studdings or joists *f* secured at an angle of about forty-five degrees with the horizon. Upon said joists *f* or upon the joists of the floor F, if extended to the sides of the 80 drier, are placed the valve support G and one upon the other the valves G<sup>2</sup> and H.

The valve support G and the valve G<sup>2</sup> consist of planks ten or twelve inches wide extending the whole length of the drier. The 85 valve support G is stationary, being secured to the joists *f* and has a series of preferably square perforations *g* about six inches square, with a space of about seven inches between them. The valve G<sup>2</sup> resting upon the valve 90 support G is of the same size and has similarly arranged perforations *g*<sup>2</sup> but it can be moved endwise by means of a screw *h*<sup>2</sup> having one end in engagement with a nut carried by the valve G<sup>2</sup> and its neck circumferentially grooved and in engagement with a 95 collar *h*<sup>3</sup> fastened to the frame of the drier, said screw carrying a hand-wheel *h*<sup>4</sup> to facilitate its rotation. Upon the valve G<sup>2</sup> the valve H is placed, it consists of a board about fifteen or twenty feet long having perforations 100 and solid portions between them, as shown

in the valve  $G^2$ , said solid portions being intended to close the perforations in the fore-end of the valve  $G^2$  when it is desired to prevent the admission of air in said end of the drier, to avoid checking green lumber when first admitted into the drier; said valve H is moved by a screw  $h$  similarly arranged and operated as the screw  $h^2$ .

By the above stated construction, there is obtained under each drier an air chamber K having a closed bottom and ends, and vertical or inclined sides, said box having openings controlled by valves and a slatted top E having open slots between the strips, constituting said top, the total area of said slots being substantially equal to the openings in the valves for the uniform admission of air into the drier through its entire floor.

To heat the air received into the drier, there is placed and supported about twenty inches above the floor E, a large steam pipe L extended across said floor, and connected with said pipe L are a series of manifold or straight pipes  $L^2$  extended the length of the drier and connected with the escape pipe  $L^3$  at the rear end of the drier. In the pipe L, steam will be admitted, preferably exhaust-steam in the day time and live steam at night.

In the cupola M, or in the center of the roof, if a nearly flat roof is used, there is placed a wide board, or two of them, perforated as the valve  $G^2$ , upon which rests a similarly perforated board or boards N, controlled by a screw  $n$  at the end thereof to regulate the escape of air from the drier.

To increase the temperature of the air admitted into the drier through the openings in the valve-support G and valve  $G^2$  particularly near the rear end of the drier, the air can be

heated by contact with a flue P through which smoke or heated products of combustion are made to pass on its way between a furnace Q suitably located in the ground at a lower level than the floor of the drier, and a suitably located up-take or chimney. The flue P is substantially horizontal, and is made to pass transversely under a rear portion of a series of drying chambers built side by side. Said flue is laid a few feet below the air chamber K, and is covered with a few inches of sand at the end nearest to the furnace.

Having now fully described our invention, we claim—

1. In a drier the combination of a slatted floor E, a tightly closed floor F, studdings uniting said floors adjacent to their sides, a stationary perforated plank G alongside of said studdings, a longitudinally movable valve-plank  $G^2$  upon the plank G and a shorter movable valve-plank H upon the plank  $G^2$ , with a series of steam pipes located horizontally above the upper floor substantially as described.

2. A drier having in the bottom thereof an air box, the top of which forms the floor of the drier and consists of slats kept apart, the bottom or floor of said box being substantially air tight, perforated plank-valves G and  $G^2$  on the side of the air box, a series of steam pipes located horizontally above the air box, and a horizontal smoke flue under said box substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM L. BURTON.  
HENRY MEYERDING.

Witnesses:

L. DE ROORTER,  
F. H. BOULMAY.