

(No Model.)

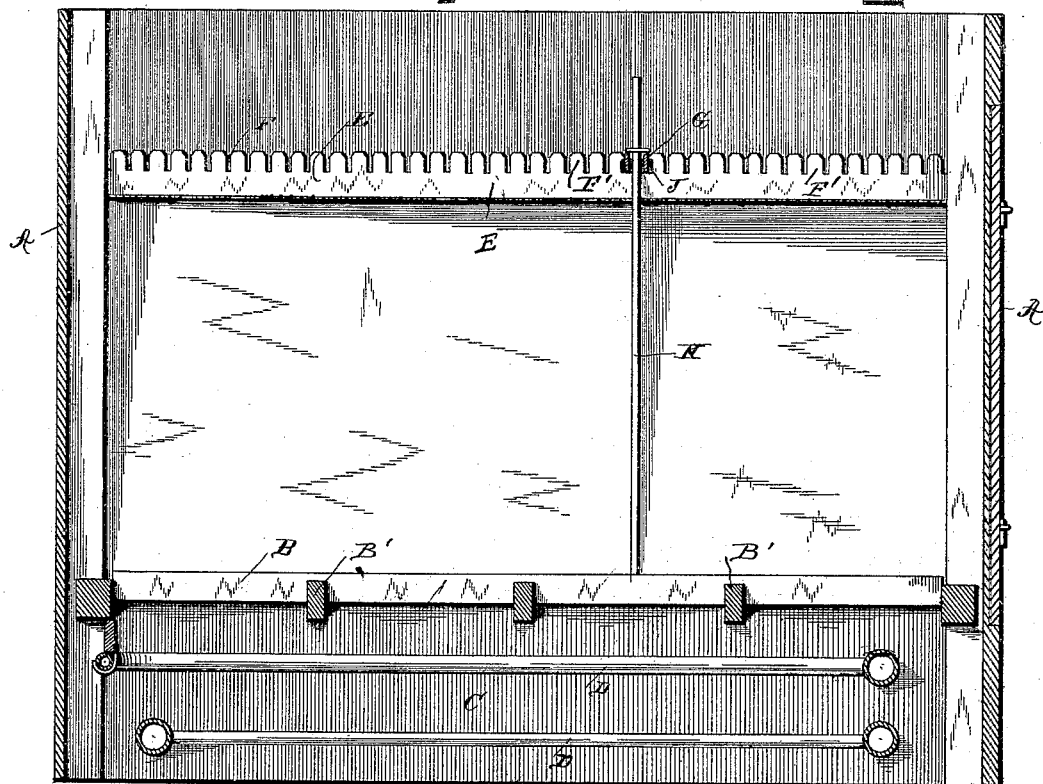
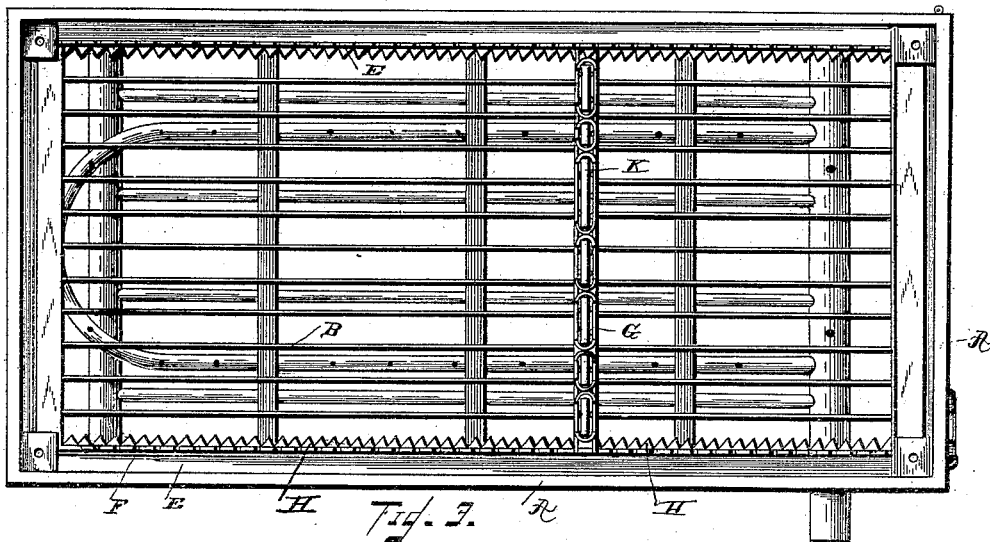
2 Sheets—Sheet 1.

J. W. ADRIANCE.
LUMBER DRIER.

No. 423,301.

Patented Mar. 11, 1890.

Fig. 1.



WITNESSES

F. L. Ourand
C. F. Ekisholm

INVENTOR

John W. Adriance
J. Evans Rogers & Co.
Attorneys

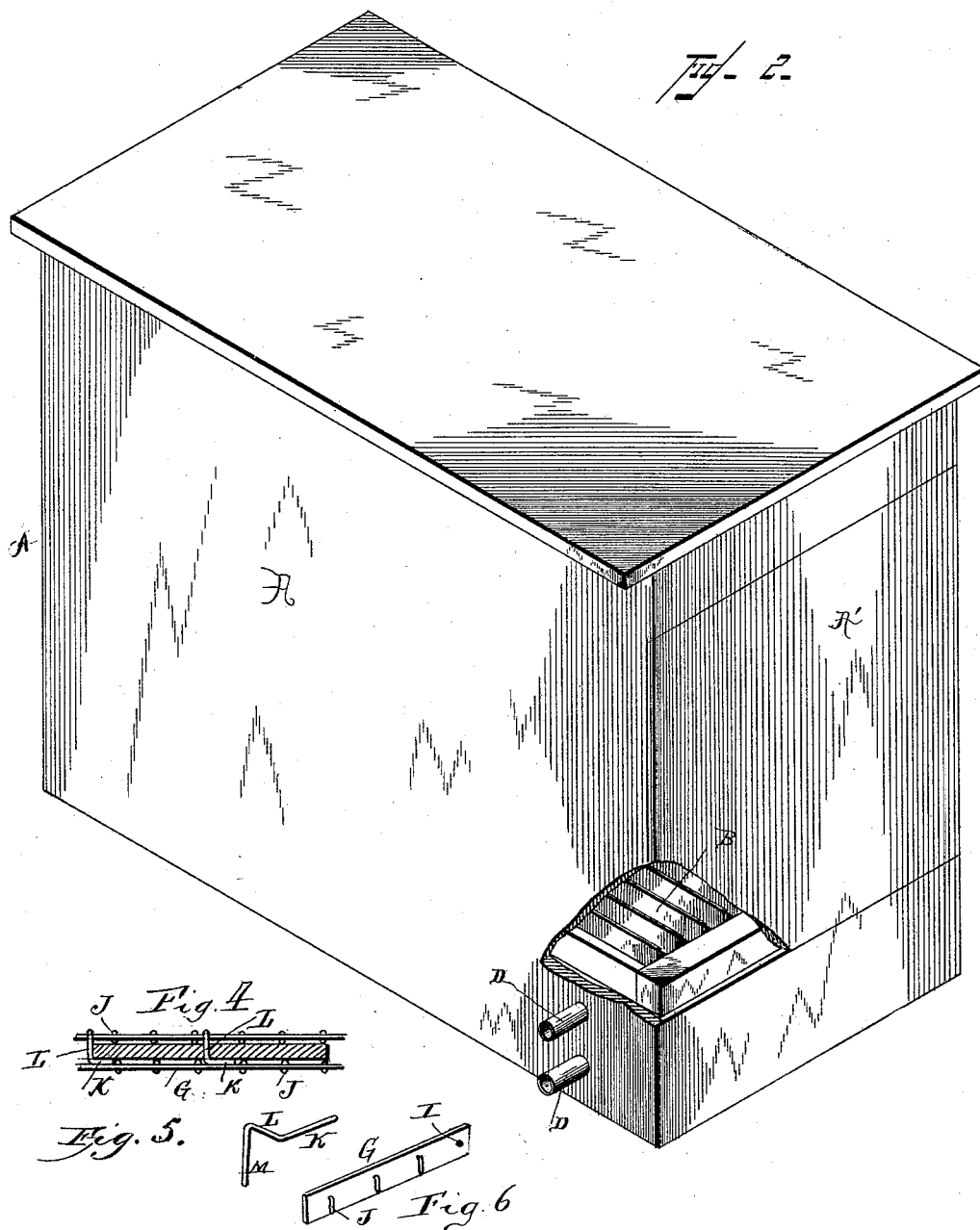
(No Model.)

2 Sheets—Sheet 2.

J. W. ADRIANCE.
LUMBER DRIER.

No. 423,301.

Patented Mar. 11, 1890.



WITNESSES
F. L. Ourand
C. F. Shisholm.

INVENTOR
John W. Adriance
J. S. Duggan & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN W. ADRIANCE, OF RACINE, WISCONSIN.

LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 423,301, dated March 11, 1890.

Application filed May 8, 1889. Serial No. 309,979. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. ADRIANCE, a citizen of the United States, and a resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Lumber-Driers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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, the object being to provide a drier in which the heat shall be supplied in such a manner as to penetrate all the pores of the lumber, and thus dry the same perfectly and in a rapid and efficient manner. I attain the object stated by placing the lumber vertically in a suitable housing or casing, with its lower ends adjacent to a suitable heat-supplying source, whereby the heat enters said ends and passes through the lumber and also circulates around the surface thereof, penetrating all the pores and insuring a perfect drying of the lumber. The lumber is placed in the casing in a series of transverse rows, each row being separated from the next adjoining one by a removable transverse bar fitting in kerfs or notches in suitable side bars, said removable bars being provided with a series of ribs or projections upon each side, against which the pieces of lumber rest, thus insuring a perfect circulation of the air. The upper ends of each piece of lumber are separated from each other by means of a peculiarly-shaped hook, which also serves to hold the lumber in a vertical position, as will be hereinafter more fully described and set forth.

The invention thus briefly outlined in the foregoing description will now be fully described with reference to the accompanying drawings, in which—

Figure 1 represents a plan view of an apparatus constructed in accordance with my invention. Fig. 2 is a perspective view of the same, partly broken away to more clearly show the details and arrangements of the parts. Fig. 3 is a longitudinal section of the same. Fig. 4 is a detail plan view of a portion of the transverse rods or bars, showing the hooks for holding the lumber in a verti-

cal position. Fig. 5 is a detail perspective view of one of the hooks. Fig. 6 is a perspective view of part of one of the transverse bars, showing the ribs or projections against which the lumber rests.

In the said drawings, in which similar letters of reference denote corresponding parts in all the figures, the letter A designates the casing or housing of my drier, which in this instance is of rectangular form; but I do not limit myself to such, and said casing is provided with a door A'. A short distance above the floor of the casing is a grating, upon which the lower ends of the lumber rest. This grating consists of a series of horizontal parallel metallic bars B, extending the whole length of the casing and supported by means of the transverse bars B', secured in the sides of the casing.

Between the bars B and the floor of the apparatus is a chamber C, in which are placed heating-pipes or a heater D, for supplying heat to the drier. These pipes may be provided with heated air from a furnace or other source, and have a series of perforations on their upper sides for the escape of the hot air into the drier.

In the sides of the casing or housing are placed the racks or supporting-bars E, which are provided at their upper edges with notches or kerfs F, having a series of projections F', the ends of which are beveled or rounded, as shown. The lower portions of these bars E are turned inwardly toward the center of the drier, and the edges thereof are serrated or formed with a number of triangular teeth H, the spaces between which receive the outer edges of the outer piece of lumber of each row and prevent the same from coming in contact with the sides of the casing.

Extending across the apparatus, with their ends resting in the kerfs or notches in the bars E, are the transverse rods G, one of which is placed between each row of lumber. These rods consist of thin metallic strips having a series of holes I. In these holes are placed short pieces of wire, which are bent over and clamped down upon each side of the rod, so as to form ribs or projections J, which prevent the rows of lumber from coming in contact with the rod.

For preventing the side edges of the pieces

of lumber from coming in contact with each other, and for holding the lumber in a vertical position while the drier is being filled and emptied, I have devised a peculiarly-formed hook. (Shown more clearly in Fig. 5.) This hook consists of a piece of wire having a transverse portion K, a horizontal portion L, and a vertical portion M. I have used the terms "transverse," "horizontal," and "vertical" with reference to the relative positions of each part of the hook when in proper position to hold the pieces of lumber.

In using my drier I proceed in the manner as follows: At the end of the drier opposite the door A' and in the outermost kerfs of the side bars I place one of the transverse rods G, the same extending entirely across the drier. I then take a board or plank and place it in a vertical position against said rod, the ribs J preventing it from coming in contact with the rod, and thus allowing the air to pass freely therebetween. The outer edge of the board rests in one of the spaces between the teeth H, which prevents said edge from coming in contact with the sides of the casing. The lower edge or end of the board rests upon the horizontal bars B. Additional boards are now placed against the rod until the row is completed. Another rod G is now inserted and the operation repeated.

It is obvious that while the boards are being placed in position some means should be employed to hold them in place until the row is completed and another bar or rod G inserted. For this purpose I employ the hooks before described. As each board is placed in position the vertical portion M of one of the hooks is inserted between the rod G and the boards of a preceding row, with the portion K extending backward, as seen in Fig. 4. The portion L will thus lie between and separate the boards of each row.

From the above description it will be seen that the hot air can freely circulate in my

drier, as the planks or boards are prevented from coming in contact with the rods G and with each other by means of the ribs or projections J on the rods and the central portions L of the hooks, and they are also prevented from coming in contact with the sides of the casing by means of the serrated inwardly-turned edges of the bars E.

The drier is provided with a suitable cover (shown in Fig. 2) for preventing the escape of the heat.

Having thus described my invention, what I claim is—

1. In a lumber-drier, the combination, with the casing A, having chamber C, containing heaters D, and the horizontal bars B, for supporting the lower ends of the lumber, of the side bars E, having kerfs or notches F and the inwardly-turned edges provided with teeth or serrations H, and the transverse bars G, having ribs or projections J, substantially as described.

2. In a lumber-drier, the combination, with the casing A, having chamber C, containing heaters D, and horizontal bars B, of the bars E, having notches or kerfs F and inwardly-turned lower edges provided or formed with serrations H, the transverse bars G, having ribs or projections J, and the hooks consisting of the central portion L, horizontal portion K, and vertical portion M, substantially as described.

3. In a lumber-drier, the combination, with side bars E, having inwardly-turned serrated edges H, of the bars G, having the ribs or projections J, substantially as described.

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

JOHN W. ADRIANCE.

Witnesses:

LEWIS W. KILBOURN,
SAMUEL C. JOHNSON.