(No Model.)

W. A. LEARY.

DRY KILN.

No. 514,832. Patented Feb. 13, 1894.

Fig. 1.

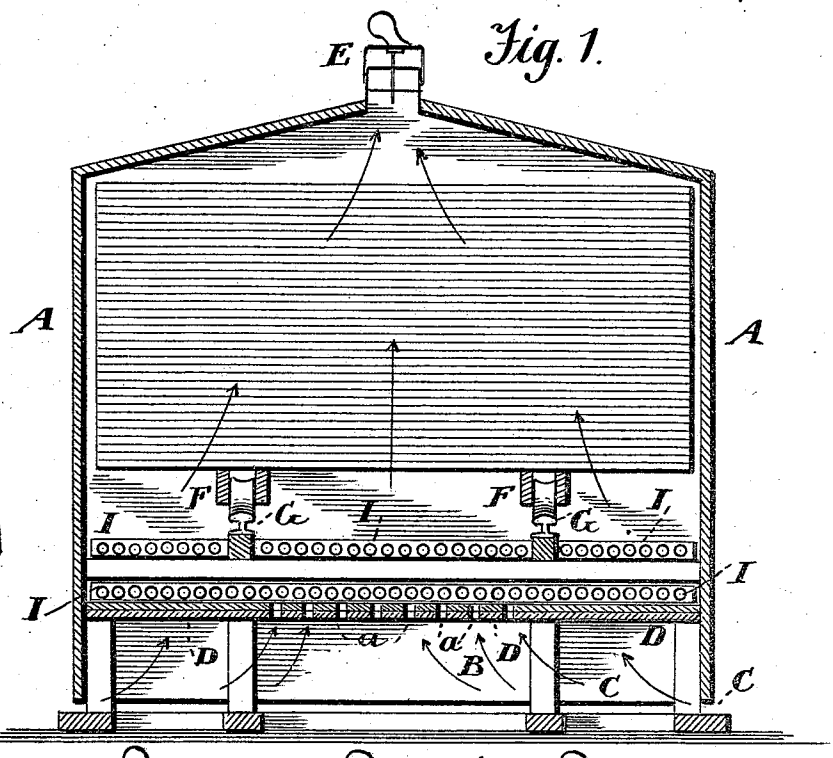
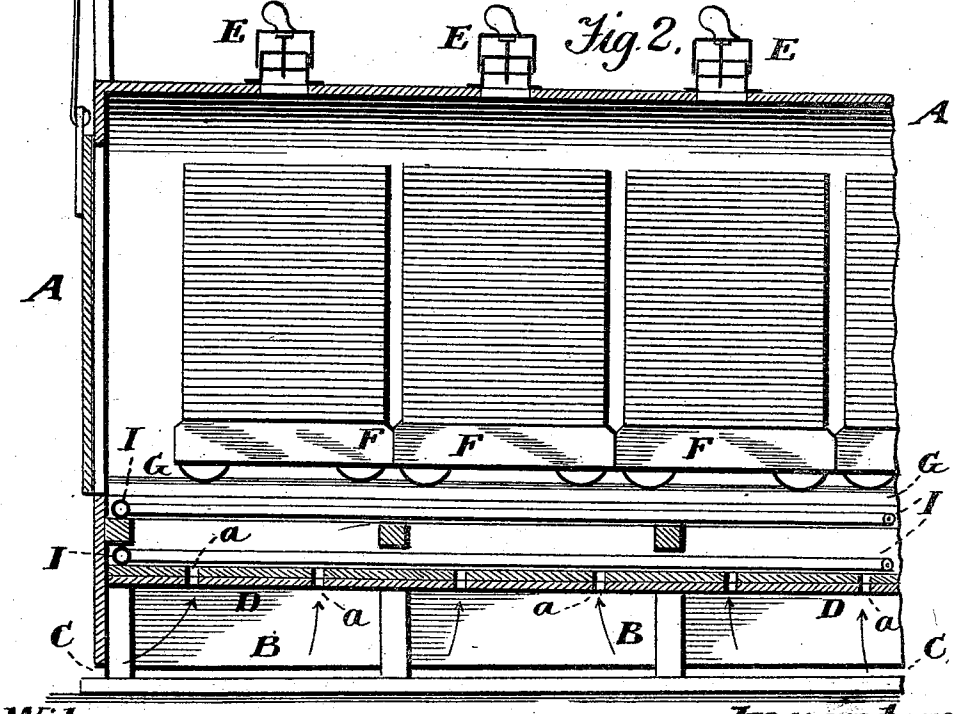


Fig. 2.



Witnesses.
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DRY-KILN.

SPECIFICATION forming part of Letters Patent No. 514,832, dated February 13, 1894.

Application filed September 16, 1893. Serial No. 485,702. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LEARY, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented certain new and useful Improvements in Dry-Kilns; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in kilns for drying lumber and the like, and it relates more particularly to that class of kilns which are commonly designated "vertical-draft kilns."

Practical experience in the use of this class of drying-kilns such as have heretofore been constructed demonstrates the fact that the effect of the outside currents of air have seriously affected, and in case of high winds actually prevented the maintenance of a uniform distribution of heat throughout the drying apartment of the kiln. In some cases I have found that at least seventy five per cent. of the heated air has thus been diverted from its course and wasted.

The object of the present invention is to provide an improved form of vertical-draft kiln, in which a uniform distribution of the heated air is at all times insured throughout the drying chamber, regardless of the direction or strength of the wind.

To these ends and to such others as the invention may pertain, the same consists in the novel features of construction of the kiln, and in the peculiar combination and adaptation of parts, all as more fully hereinafter described, shown in the accompanying drawings and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon form a part of this specification, like letters indicating the same parts throughout both views, and in which drawings—

Figure 1 is a vertical transverse section through a dry-kiln embodying my improvements. Fig. 2, is a vertical longitudinal section of the same.

Reference now being had to the details of the drawings by letter, A designates the kiln, which may be of any desired or suitable dimensions, but is preferably about sixteen feet in height by eighteen feet in width; the interior of the drying chamber being about twelve feet in height.

B is an air chamber, which in a kiln of the dimensions above mentioned should be about four feet in height, the side walls of said chamber extending entirely around the kiln, and made perfectly air tight by means of building paper or other material adapted to the purpose, excepting that at the lower edge of the chamber an air space of about two inches, is provided, as shown at C, said air space extending entirely around the kiln, and serving, as will hereinafter appear, to admit at all times a uniform current of air to all parts of the chamber alike.

D is the main floor of the kiln which extends over the entire length and width of the kiln directly above the chamber B, said floor being provided at intervals throughout its surface with perforations or air openings *a*, *a*.

E, E are perfectly balanced revolving ventilators which are placed at suitable intervals along the ridge or apex of the roof of the kiln.

The lumber to be dried is piled in the usual manner upon trucks F, which move upon tracks G provided for the purpose.

The steam pipes I are arranged in any suitable manner above the perforated floor and beneath the trucks upon which the lumber is piled.

An essential feature in the construction of a kiln such as I have described resides in the construction and arrangement of the balanced ventilators, as it is necessary that they should be so nicely adjusted as to insure their being readily turned upon every change in the direction of the wind, and also in the regulation of the size, number and relative disposition of the air openings in the floor of the kiln, the same depending entirely upon the size of the kiln chamber and the position, number and sizes of the ventilators used.

I have found that in a kiln constructed in accordance with my invention a steady and

uniform distribution of the heat, and a uniform upward natural draft is at all times insured, regardless of the direction or force of the wind. The superficial area of the chamber being such as to effectually prevent air currents being created by the outer air which enters only through the contracted air space which extends entirely around its lower edge.

It is essential that the side walls of the air-chamber beneath the floor of the kiln should be practically air tight, so as to effectually prevent the outside air from entering the chamber excepting through the contracted inlet space at the lower edge of the walls, as by this construction the air within the chamber will remain inactive and will in no way be influenced by out-side air currents.

Having thus described my invention, what I claim to be new is—

1. In a dry-kiln of the character described, the combination with the drying-chamber having a perforated floor, of an air-chamber beneath the floor, said air-chamber being provided with imperforate walls and a contracted inlet for the air, said inlet extending entirely around the lower edge of the air-chamber, and heating pipes above the air-chamber and below and between the tracks in the drying chamber, substantially as described.

2. In combination, the drying chamber of a dry-kiln, a perforated floor beneath the chamber, an air chamber beneath the floor, said air chamber having imperforate walls and having a contracted air inlet space at its lower edge extending entirely around the same, heating-pipes within the drying chamber directly above the perforated floor and beneath the space occupied by the lumber to be dried, and balanced, revolving ventilators which serve as outlets for the air from the kiln, substantially as shown and described.

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

WILLIAM A. LEARY.

Witnesses:
A. L. HOUGH,
FRANKLIN H. HOUGH.