R. A. Douglas,

Seasoning Wood.

No. 102,665. Patented May 3. 1870.

Fig. 1.

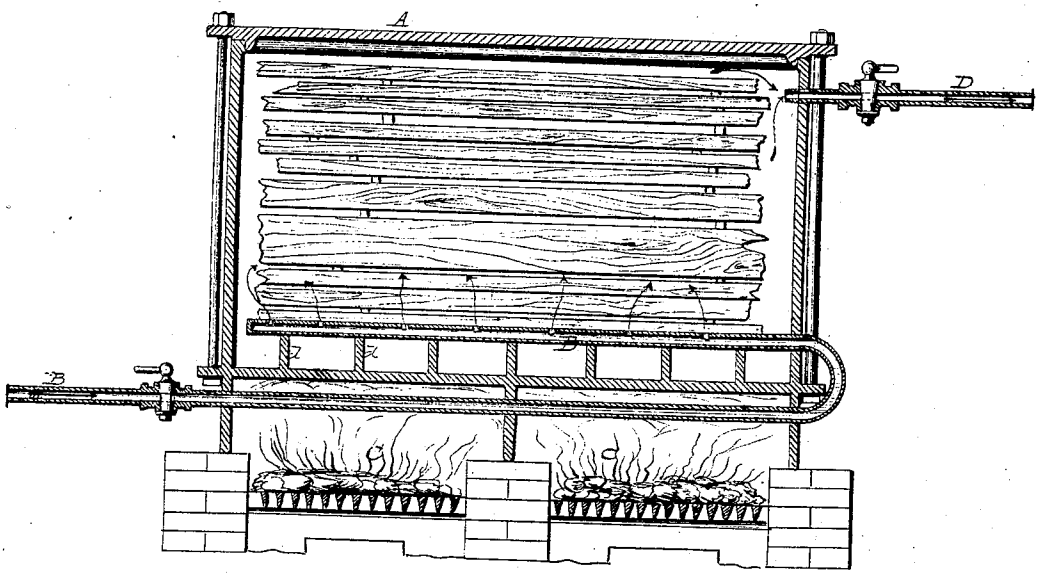
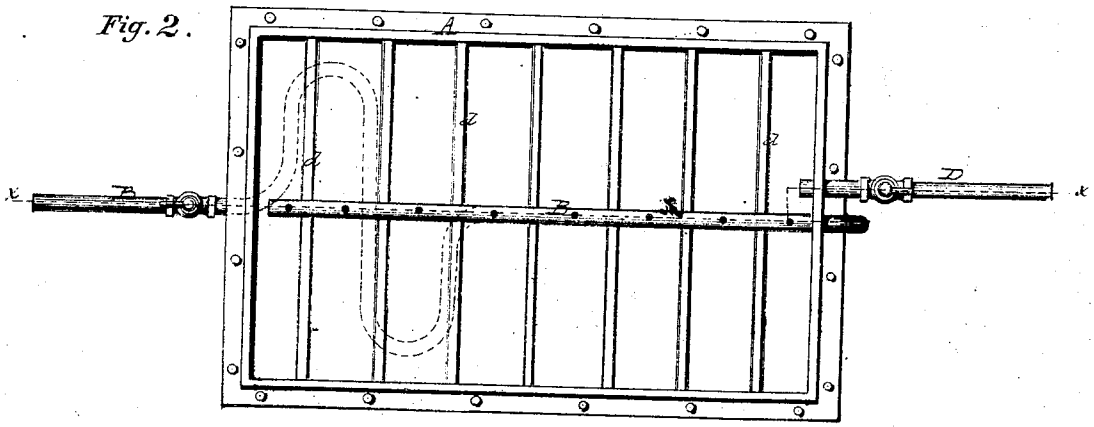


Fig. 2.



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RICHARD A. DOUGLAS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 102,665, *dated May* 3, 1870.

IMPROVEMENT IN SEASONING WOOD

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, RICHARD A. DOUGLAS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Seasoning Wood, of which the following is a specification, reference being had to the accompanying drawings.

I am aware that various methods have heretofore been devised for seasoning wood, among which are treating the green wood with steam, and then kiln-drying it at a high temperature; subjecting it to the action of moist steam to open the pores and remove the sap, gums, and juices, and then to the action of superheated steam to dry it; drying it in a vacuum; and simply kiln-drying it.

All of these plans have in practice, however, been found objectionable and inefficient; the steam treatment failing to extract the sap, &c., and being found worthless, while the kiln-drying thoroughly seasons the wood, but at the same time destroys the strength of the fiber, and renders the wood so brittle as to be almost worthless, where strength or endurance is required.

My invention relates to an improved method, whereby I am enabled to season wood in a short space of time without injuring the fiber; and

It consists in immersing the green wood in a current of hot or boiling-water, and subjecting it to the action of the same for a considerable length of time, or until all the sap, gums, &c., are dissolved and carried off, and then removing the wood from the water and placing it in a drying-room, where it is subjected to a temperate heat, until all the moisture is driven off; and

It also consists in a novel apparatus to receive the wood while undergoing treatment.

Figure 1 is a longitudinal vertical section of my apparatus, and

Figure 2 is a top plan view of the same, with the top or cover removed.

In constructing my apparatus, I make a strong metal tank or boiler, A, of any suitable size and form, and enamel its inner surface, or line it with some non-corroding metal, and either make its top removable, or provide it with a door or other opening, through which the wood may be introduced, and then the opening closed steam-tight; and I then mount this tank or boiler upon or over a furnace, C, as shown in fig. 1.

Through the furnace I lead a serpentine or coiled pipe, B, and carry it upward, and in through the end, and along near the bottom of the tank, and within the tank pierce it with numerous small holes, as shown in figs. 1 and 2, to allow the escape of water from the pipe throughout the whole length of the tank; and, to the outer end of this pipe B, I attach a force pump connected with a pipe or reservoir of pure water.

Into the upper portion of the tank I introduce a waste-pipe, D, and provide it with a safety-valve, whereby the water may be maintained at any desired pressure within the tank; and across the lower part of the tank I place ribs *d*, to support the wood off from the bottom, as shown in fig. 1.

The wood to be treated is introduced into the tank with strips laid between the pieces, to keep them apart, and allow a free circulation of the water around and among them, and then the tank closed tightly; the fire is then started in furnace C, so as to act upon the pipe B and the bottom of the tank, and the pump started, and water forced through pipe B, to fill the tank and submerge the wood.

The water, in passing through the pipe B, becomes heated to or about the boiling point, and when discharged in this condition into the tank, it circulates among the pieces of wood, and penetrates the pores and fibers of the same, and dissolves and washes out the gums, sap, juices, and other matters from the same, and then flows off through the pipe D, holding the said matters in suspension.

The wood is allowed to remain in the tank subject to the action of the hot water until all the desired matters are dissolved and washed out, the length of time varying with different kinds of wood, and the condition of the same when introduced; it is then removed and placed within a drying-room, the temperature of which should be from 120° to 130° Fahrenheit, until thoroughly dried, when it may be removed for use.

Any suitable drying apparatus may be used, but I prefer a room open at the top, and heated by coils of steam-pipe arranged around the bottom.

In many kinds of wood containing a large amount of coloring-matter, the water is rapidly discolored, and the water entering the bottom through a single pipe would be liable to stain or discolor the wood in the upper part of the tank; to remedy this difficulty two or more inlet and outlet-pipes may be used to produce a more rapid and thorough circulation of the water.

Having thus described my invention,

What I claim, is—

1. The herein-described process of treating wood, that is to say, subjecting to the action of hot water, and then drying it by heated air, substantially as described.

2. The tank A, connected with the furnace, and having inlet-pipe B, and outlet-pipe D, arranged and operating substantially as set forth.

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