L. S. ROBBINS.

Process for Preserving Wood.

No. 47,132. Patented April 4, 1865.

FIG. 1

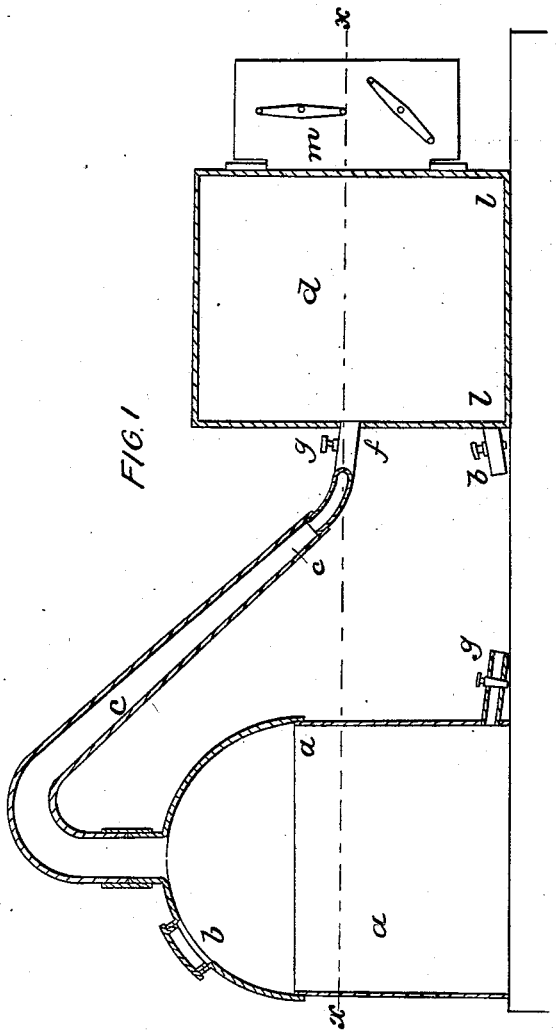
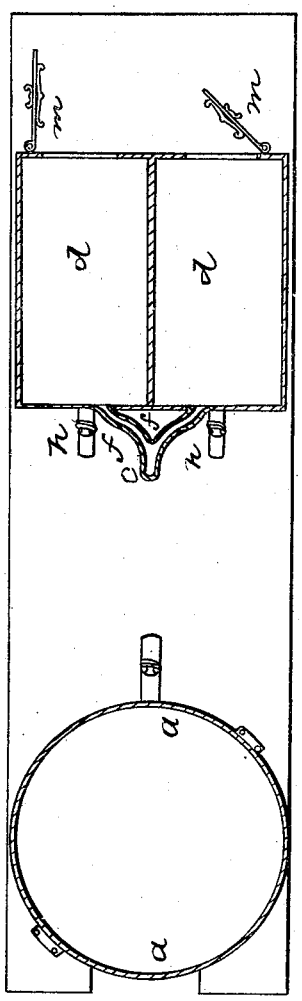


FIG. 2



WITNESSES.

A E Beach

H. W. Brown

INVENTOR

L S. Robbins

By Munn & Co
Attys

UNITED STATES PATENT OFFICE.

LOUIS S. ROBBINS, OF NEW YORK, N. Y.

IMPROVED PROCESS FOR PRESERVING WOOD.

Specification forming part of Letters Patent No. 47,132, dated April 4, 1865.

To all whom it may concern:

Be it known that I, LOUIS S. ROBBINS, of the city, county, and State of New York, have invented a new and Improved Process for Preserving Wood from Mold and Decay; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

It is a well-known fact that wood when cut down and separated from its roots, which supply it with its antiseptics, immediately becomes affected by the deleterious effects of exposure to the heat and moisture of the atmosphere, the former of which rapidly absorbs the fluid or sap portion of the wood, while the latter impregnates the woody fibers with substances which the wood, while growing, by its antiseptics, entirely excluded. These alternate actions upon the wood gradually and finally cause it to decay and molder. To prevent this decay and molder of wood is therefore the object of the present invention and is accomplished thereby, it consisting in subjecting the wood to a preservative process by which nearly all of its antiseptics are retained within the same, and for those lost, occasioned by the cutting and preparing of the wood for the purposes intended, supplying such substances as will prevent their further waste, and also form such a combination with the fibers of the wood—closing its pores—as to effectually prevent the deteriorating effects of either heat or moisture, or of both, upon the same, as hereinbefore alluded to.

Many processes have been heretofore invented for the preservation of wood, some of which were entirely impracticable and others only partially so, but by none could the wood be sufficiently impregnated or saturated with the preservative compound as to insure its preservation for any length of time, owing to the manner in which the same was applied to the wood.

One form of apparatus for carrying out my improved process is represented in the accompanying plate of drawings, of which—

Figure 1 is a central longitudinal vertical section; and Fig. 2, a horizontal section taken in the plane of line *x x*, Fig. 1.

a a in drawings represent a retort, made of any desired form or size, in which coal-tar, resin, or other oleaginous substances or compounds are placed and subjected to the action of heat from any suitable furnace; *b b*, manhole in the upper portion of retort for charging and cleansing the same; *c c*, a pipe communicating with retort *a*, at or near its top, and passing to and communicating with chambers or receptacles *d d*, through pipes *f f*, provided with cocks *g g*. Into the chambers *d d* the wood to be acted upon is placed in any proper manner.

Heat being applied to the retort *a*, containing the coal-tar, &c., as described, oleaginous vapors are generated therein, which pass out of the same through the connecting-pipe *c c* into the wood-chambers *d d*, or into only one of the same, as may be desired, and by their heat first cause the surface moisture of the wood to be removed therefrom, taking the form of steam and condensing on the sides of said chamber, from which it is drawn off through pipes *h h*, entering at or near the bottom *l;* and having thus removed the surface moisture from the wood I then thoroughly impregnate and saturate it through its pores and fibers by the oleaginous vapors and heavier products of distillation until it is made impervious to moisture, and so as to be unaffected by the deteriorating effects of the same and of the atmosphere, when it can be removed from the chambers *d d*, through the doors *m m*, and the chambers again charged with wood, and so on as long as may be desired.

In the operation of my process a temperature of from 212° to 250° Fahrenheit is sufficient to remove the surface moisture from the wood, and to saturate the same with oleaginous vapors and products it is best that the temperature should be raised to 300° Fahrenheit, or more, if necessary.

From the above description it is apparent that by my process I am enabled to more completely saturate the wood with the preservative compound than has been or could be done by any of the processes heretofore in use for the reason that I cause the preservative compound to permeate the pores and fibers of the wood in a vaporized state, while in the others it is made to enter in a liquid

state; and it is also evident that it is accomplished in an economical, expeditious, effective, and practical manner.

I do not intend to limit myself to any particular form of apparatus, nor do I intend to limit myself to the removing of the surface moisture from the wood by means of oleaginous vapors, as herein described, as there are various ways in which the same can be accomplished with the use of heat; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. The process herein described for preserving wood from molder and decay, the same consisting in first removing the surface moisture from the wood and then charging and saturating the same with hot oleaginous vapors and compounds, substantially as herein described.

2. Removing the surface moisture from wood by means of hot oleaginous vapors, substantially as herein described.

LOUIS S. ROBBINS.

Witnesses:

M. M. LIVINGSTON,

ALBERT W. BROWN.