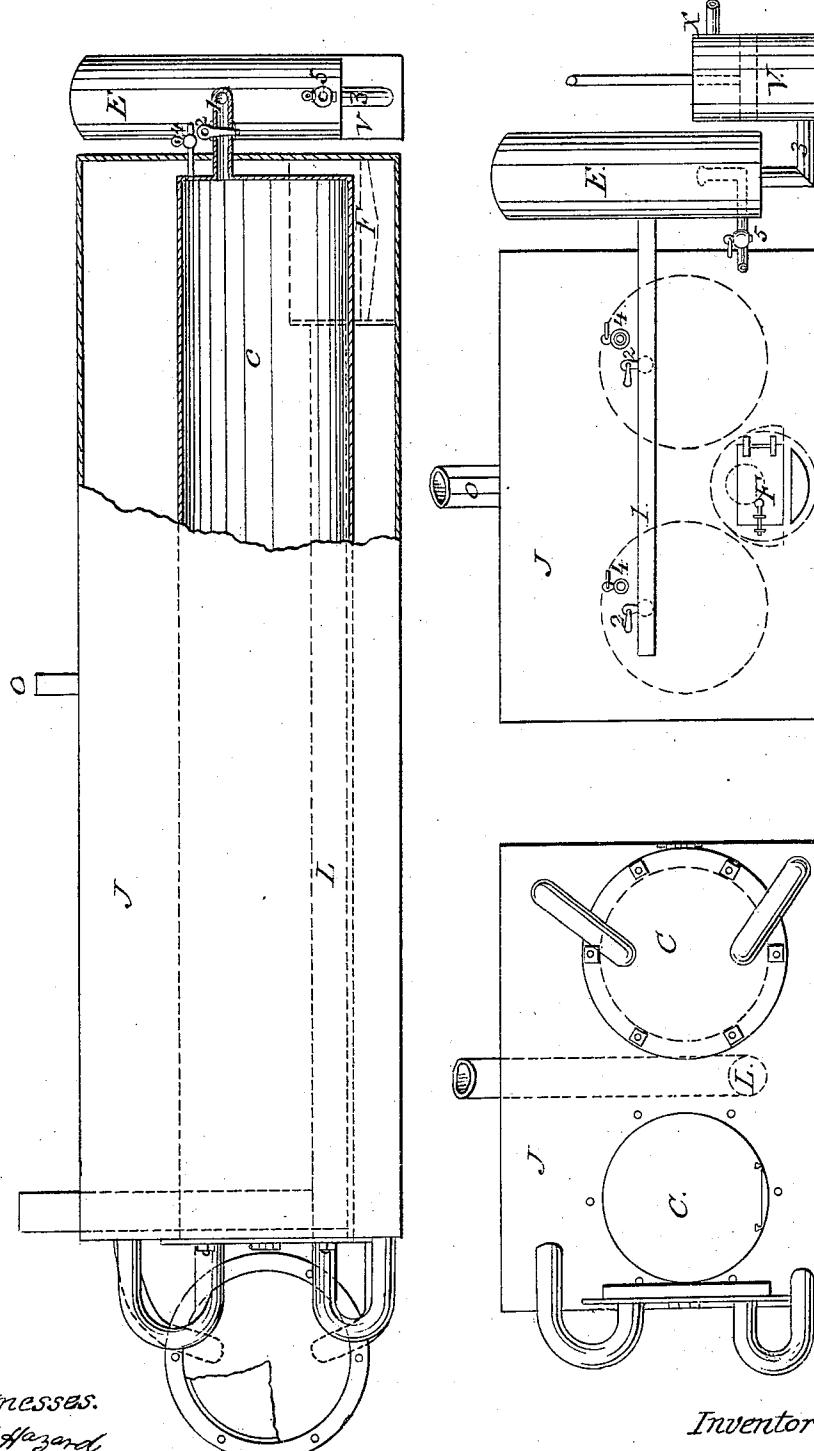


J. BRAKELEY.

Lumber Drier.

No. 77,712.

Patented May 12, 1868.



Witnesses:

O. E. D. Hazard  
W. A. Bok.

Inventor.

Joseph Brakeley

# United States Patent Office.

JOSEPH BRAKELEY, OF BORDENTOWN, NEW JERSEY.

*Letters Patent No. 77,712, dated May 12, 1868.*

## IMPROVEMENT IN DRIERS.

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, JOSEPH BRAKELEY, of Bordentown, in the county of Burlington, in the State of New Jersey, have invented a new and improved Mode of Drying Lumber; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

The nature of my invention consists in applying to a kiln for drying lumber a condensing-apparatus, in combination with an exhaust-pump for creating and maintaining a vacuum therein. By this means I am enabled to dry all kinds of lumber at a much lower temperature than has been heretofore employed in kilns for that purpose, thereby avoiding the damage done to the fibre of the wood when great heat is used, and greatly shortening the time employed in the process. It is intended for wood that has been wholly or partly wrought, as well as for unwrought lumber.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct one or more chambers, (in this case, two,) marked C, made air-tight as nearly as possible, and a furnace, marked F, and a flue, marked L, surrounded by a steam or water-jacket, marked J, which is provided with an opening, O, on top. I attach to these chambers, by means of pipes, marked 1, and cocks, marked 2, an apparatus for creating and maintaining a vacuum therein, which may be made in various ways. In this case, I use a spray-condenser, marked E, and a pump, V, the latter being connected with the condenser by means of a pipe, marked 3.

It is operated as follows: First, the steam or water-jacket is nearly filled with water, through the opening, O. Fire is made and kept up in the furnace. The materials to be dried are then run into the chambers on trucks, and the chamber-doors closed and fastened, air-cocks, marked 4, being closed, and cocks, marked 2, opened. The pump is next started, and run by any convenient power, for the purpose of removing the atmosphere from the chambers. Cock, marked 5, is then opened, and water supplied through it from any convenient source to the condenser E. By means of the condenser, the vapor arising from the heated wood is condensed, and together with the condensing-water, and any atmosphere that may be present, is thrown out by the pump at X, and a vacuum thereby maintained. When the operation is completed, which may be known by the cooling of the pipes marked 1, the cocks marked 2 are closed, and the air-cocks, marked 4, are opened. The chamber-doors are then opened, and the contents removed.

This invention is distinguished from all other known modes of drying lumber in this, that in addition to the exhaust-pump in common use, I use a condenser, which, by converting the vapor expelled from the wood into water, by diminishing its bulk, relieves the pump from much of its duty, at the same time, by its condensation, contributing to the production of a vacuum. The use of a condenser in this relation I believe to be new.

What I claim as my invention, and desire to secure by Letters Patent, is—

Combining, with a dry-kiln, both a condenser and an exhaust-pump, substantially as and for the purpose set forth.

JOSEPH BRAKELEY.

Witnesses:

O. E. P. HAZARD,

W. A. BOSS.