

# United States Patent Office.

EDWARD SPAULDING, OF BROOKLYN, NEW YORK.

*Letters Patent No. 77,777, dated May 12, 1868.*

## IMPROVED PROCESS FOR TREATING 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, EDWARD SPAULDING, of the city of Brooklyn, in the county of Kings, and State of New York, have invented a new and improved Process for Treating Wood; and I do hereby declare that the following is a full and exact description thereof.

My process has for its object to increase the density of wood or timber, to season it in such a manner as to prevent its cracking or warping, and expedite the time heretofore required for drying, and increase its strength and durability.

I take wood, either in its green state, or seasoned, or partially seasoned, and subject it to great pressure longitudinally of the fibres, by any suitable means, as by hydrostatic or mechanical power, compressing, and to a great extent closing, the pores and cells, and condensing its entire fibrous structure.

This has the effect to expel much of the air and moisture contained within the wood, especially if unseasoned, and prepare it for the subsequent process of drying, to which I prefer to immediately subject it, by exposing it to artificial heat in a drying-kiln, or to superheated steam, hot air, or gases, by any of the processes in common use. The changes produced on the internal structure of the wood by the great pressure to which it is first subjected, has the effect to rupture the minute cells in which the moisture is contained, and afford it a free escape on the application of heat thereafter.

The pressure applied is such that the wood is condensed and compressed into the smallest compass that it will admit of, in consequence of which it does not shrink or become smaller by subsequent drying or exposure, a quality which renders it more valuable for nearly all the purposes for which it is used, and particularly for the hubs, spokes, and panels of carriages, and tool-handles, mallets, shoe-pegs, dowels, wood-screws, dead-eyes of ships, engravers' wood, and many other articles, where it is of the greatest importance to avoid the shrinking of the finished article.

Any mode of compression may be employed, but that which I have found productive of the best results is to force the wood to be operated upon through metal dies of suitable size and shape by means of hydrostatic pressure. If the dies are heated, the work is accomplished with greater facility and less power, as the surface in contact with the dies becomes glazed or polished, and offers less resistance by friction.

If the wood be green, or saturated with water, or steamed, the effect of the treatment is equally good and efficacious, the moist condition of the cellular structure enabling it to be crushed and compacted with a less expenditure of power.

The change of structure produced by the pressure becomes fixed and unchangeable by the subsequent drying process, which renders the fibres so rigid that the pores have very little absorbent power, and hence the non-liability to expand, or check, or warp afterward, which so well adapts it for most useful purposes.

What I claim as my invention, is—

The method of treating wood herein described, consisting essentially in subjecting it to sufficient pressure to change and compact the structure preparatory to the process of drying by artificial heat, substantially as set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

EDWD. SPAULDING.

Witnesses:

G. M. LAWRENCE,  
E. S. LENOX.