

UNITED STATES PATENT OFFICE.

GEORGE W. SWAN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN THE PROCESSES FOR SOFTENING AND TOUGHENING BLOCKS OF WOOD.

Specification forming part of Letters Patent No. **142,298**, dated August 26, 1873; application filed June 17, 1873.

To all whom it may concern:

Be it known that I, GEORGE W. SWAN, of San Francisco city and county, State of California, have invented an Improved Process for Softening and Toughening Blocks of Wood; and I do hereby declare the following description sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improved process for softening and toughening blocks of wood preparatory to cutting them into veneers or boards with a veneer-cutting machine.

Heretofore it has been the practice to either steam the blocks of wood or boil them in hot water before cutting them into veneers, in order to soften the wood and render it pliable, so that it would not split while being cut. This process, however, would only admit of the cutting of very thin veneers, and in some kinds of wood even this imperfectly.

My process consists in filling the tank half full of hot water, and then placing in the water a quantity of ammonia or borax, or both combined, so as to make a strong solution of these substances. The quantity of these substances to be employed will be governed by the quantity of water in the tank in each case,

no particular quantity being required so long as the solution is made strong with the chemicals. I then place the blocks of wood in the tank until it is filled and the solution covers them, after which I cover the tank closely and introduce steam from a steam-boiler into the bottom of the tank, or apply heat to it, as most convenient. The blocks are thus left until they become thoroughly saturated and steamed, the length of time required varying according to the character of the wood.

Blocks prepared in this way can be cut into veneers or boards of any desired thickness without trouble, and will retain their flexibility after becoming dry an indefinite length of time.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The process of boiling or steaming blocks of wood in a solution of ammonia and borax, substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

GEORGE W. SWAN. [L. S.]

Witnesses:

JOHN L. BOONE,
C. M. RICHARDSON.