

# UNITED STATES PATENT OFFICE.

JOHN B. DUNHAM, OF EAST CHESTER, NEW YORK.

## IMPROVEMENT IN PREPARED-WOOD SOUNDING-BOARDS FOR PIANOS.

Specification forming part of Letters Patent No. 117,393, dated July 25, 1871.

*To all whom it may concern:*

Be it known that I, JOHN B. DUNHAM, of East Chester, in the county of Westchester and State of New York, have invented a new and useful Improvement in Sounding-Boards for Musical String Instruments; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same.

This invention relates to a sounding-board, which I term "hydrocarbonated sounding-board;" and which is prepared by first impregnating the wood with steam and then heating it to a temperature just below the point where carbonization of the wood begins, in such a manner that the compactness of the wood is materially increased and a sounding-board is obtained which is capable of resisting the action of moisture; and, furthermore, the vibrating power of the sounding-board is considerably increased.

In carrying out my invention I take the wood, after the same has been cut up in boards suitable for a sounding-board of a piano-forte or other musical string instrument, and impregnate the same with steam until all the soluble matters contained in the wood are uniformly distributed throughout the entire body of the wood. When this point

has been reached, which is determined by experience, I remove the wood from the impregnating-chamber and introduce it in an oven, where the same is heated to a temperature just below the point where the carbonization would commence. The temperature is different for different kinds of wood, and it ranges from 250° up to 400°.

By the action of this high heat the volatile parts contained in the wood and previously dissolved by the steam are all or nearly all expelled, the fibers of the wood close up, rendering the same more compact and elastic than before, and a sounding-board is produced which is not changed by the moisture or by the changes in the atmosphere, and the vibrating quality of which is far superior to that of a sounding-board made in the ordinary manner, so that the fulness and richness of the tone of the instrument are materially improved.

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

A hydrocarbonated sounding-board, made substantially as herein described.

Witnesses: JOHN B. DUNHAM.

GEO. H. GEIB,  
E. G. COLLINS.