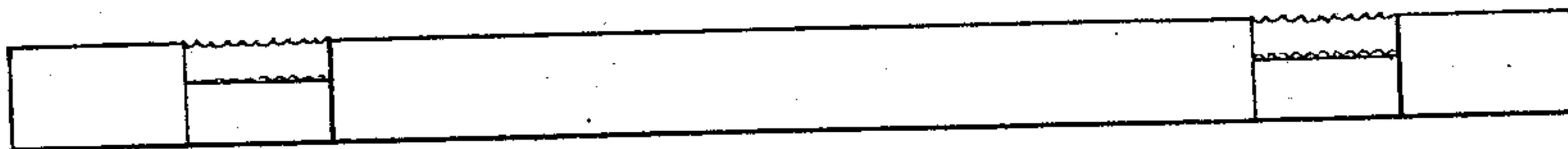
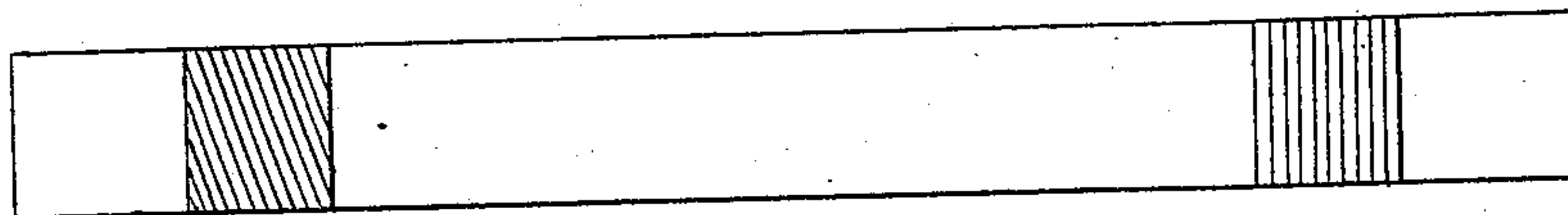


F. H. WHITMAN.
Railway-Ties.

No. 157,304.

Patented Dec. 1, 1874.



Witness:

A. S. Bird

T. T. Snow

Inventor:

Francis H. Whitman

Per Smith & Bird

attys.

UNITED STATES PATENT OFFICE.

FRANCIS H. WHITMAN, OF HARRISON, MAINE.

IMPROVEMENT IN RAILWAY-TIES.

Specification forming part of Letters Patent No. **157,304**, dated December 1, 1874; application filed October 19, 1874.

To all whom it may concern:

Be it known that I, FRANCIS H. WHITMAN, of Harrison, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Railway-Sleepers; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings forming a part of this specification, in which is shown a side view of my improved sleeper.

Letters Patent of the United States No. 91,893, dated June 29, 1869, have been granted to E. H. Woodsum and myself for an improvement in railway-sleepers, the improvement consisting in the insertion of rectangular blocks of hard wood into the softer wood of the sleeper, whereby the durability of the sleeper was greatly increased, the block of hard wood resisting the pressure and action of the rail, which had before rendered the sleeper useless in a comparatively short space of time.

All desired elasticity was obtained for the sleeper thus constructed by the blocks inserted acting as an air-cushion; the harder and stronger the piece inserted the less motive power is absorbed, and a longer and better service is obtained in proportion to the solidity, strength, and durability of the block.

It is found, in practice, that the blocks of hard wood, when exposed to heat while seasoning, or while drying after being wet, are liable to crack upon the surface, thereby impairing to some degree the usefulness and durability of the sleeper.

The purpose of this invention is still further to increase the durability, first, by securing greater density and specific gravity, and second by preventing the surface cracking. To accomplish this I make use of the following process:

The wood to be treated is passed either in the form of blocks or of planks from which the blocks are cut, between two rollers, weighted sufficiently to give the requisite pressure, each roller being fluted or grooved in the line of the axis, or diagonally in relation to the axis.

By this process the blocks are corrugated upon both the upper and lower surfaces, and at the same time compressed and compacted, giving greater solidity and strength, thus rendering them more capable of resisting pressure, and the changes of climate, and the process of seasoning.

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

The railway-sleeper, prepared by the insertion of blocks of hard wood, corrugated and compressed as herein described, for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of September, 1874.

FRANCIS H. WHITMAN.

Witnesses:

GEO. E. BIRD,
ARTHUR I. BIRD.