

# UNITED STATES PATENT OFFICE.

ROWLAND ROBINSON HAZARD, OF NEW YORK, N. Y.

NON-RESONANT MATERIAL FOR THE CONSTRUCTION OF BUILDINGS, RAILWAY-TUNNELS, RAILWAY-CARRIAGES, AND SIMILAR STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 316,543, dated April 28, 1885.

Application filed July 26, 1884. (Specimens.) Patented in England August 6, 1884, No. 11,000, and in France August 9, 1884, No. 151,159.

*To all whom it may concern:*

Be it known that I, ROWLAND ROBINSON HAZARD, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Non-Resonant Material for the Construction of Buildings, Railway-Tunnels, Railway-Carriages, and Similar Structures, fully described in the following specification.

My invention relates to a non-resonant material suitable for the construction of buildings, railway-tunnels, railway-carriages, and similar structures. Said material consists of a woven fabric, grating, lattice, or crimp of metal overlaid on one or both sides, or inlaid with flax, ootrum, esparto, asbestos, or any suitable vegetable or mineral fiber, with oxidized or solidified vegetable oil, rubber, gutta-percha, or equivalent material, and formed into panels, sheets, or plates by hydraulic or other pressure. This composition of the non-resonant material is preferred; but the woven fabric, grating, lattice, or crimp of metal may be covered with india-rubber or gutta-percha, or with paper or cloth treated with solidified vegetable oil or equivalent material.

In making the compound material, the fiber—in quantity, varying according to the thickness of the sheets or panels required—is laid on the woven fabric or grating of metal, and the said fiber is then covered or treated with oil, if it has not been previously so treated, and finally the compound material is subjected to hydraulic or other pressure, and afterward dried in any well-known manner. The metallic part of the material is of substance and kind to secure the requisite stiffness and toughness, and may be woven, braided, tied, riveted, crimped, or otherwise fastened. The flax fiber, ootrum, or esparto, with oxidized or solidified oil, imparts a non-resonant character to the panels or sheets, assists to

make them unbreakable, and renders them proof against dampness; but any other material serving the same purpose may be employed and is within the scope of my invention. This material may be employed for walls of underground railway structures to fill the space between columns; also, for the body of railway-carriages; also, for covering the frames of cyclone-resisting or other houses and buildings.

This compound material may be fastened to the columns or supports by clamping-plates and bolts or screws or by any other well-known and efficient means.

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

1. A material consisting of woven fabric, grating, lattice, or crimp of metal combined with a non-resonant substance, substantially as described.

2. A material consisting of woven fabric, grating, lattice, or crimp of metal overlaid on both sides with a non-resonant material, substantially as described.

3. A material consisting of woven fabric, grating, lattice, or crimp of metal combined with a vegetable or mineral fiber and with oxidized or solidified vegetable oil or equivalent, substantially as described.

4. As an article of manufacture, panels, plates, or sheets composed of woven fabric, grating, lattice, or crimp of metal combined with a non-resonant material, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROWLAND ROBINSON HAZARD.

Witnesses:

J. H. CANNIFF,  
W. H. SHUEY.