

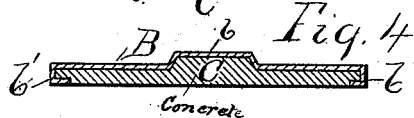
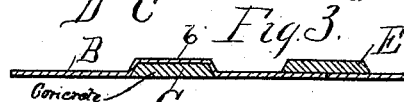
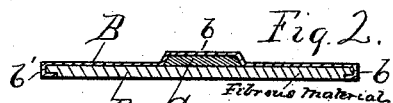
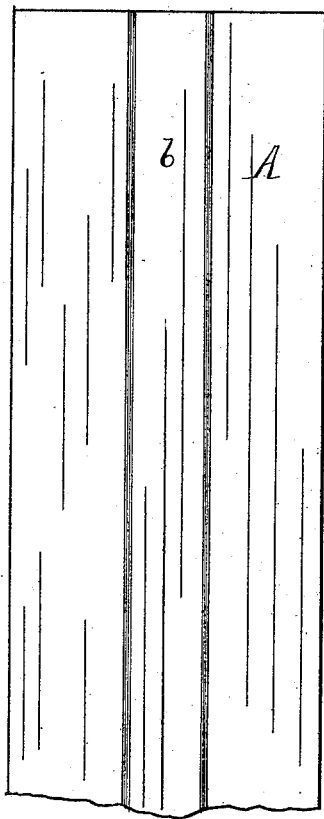
(No Model.)

W. W. GREEN.
COMPOSITE BOARD.

No. 421,397.

Patented Feb. 18, 1890.

Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM W. GREEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN
FIRE PROOF STEEL CAR COMPANY, OF SAME PLACE.

COMPOSITE BOARD.

SPECIFICATION forming part of Letters Patent No. 421,397, dated February 18, 1890.

Application filed March 11, 1889. Serial No. 302,824. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. GREEN, a citizen of the United States of America, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Composite Board, of which the following is a specification.

In the drawings presented herewith, where- in similar reference-letters indicate the same or corresponding parts, Figure 1 is a face view of a piece of my improved board; Fig. 2, a vertical cross-section of the same, and Figs. 3, 4, and 5 similar cross-sections of modified forms thereof.

The object of my invention is to produce a fire-proof, vibrationless, and rigid building material especially adapted for use as an outside and inside covering for railway-cars, and the same has been devised with special reference to such use, but may be employed in any structure in which the qualities above enumerated are desirable.

The most satisfactory fire-proof material where lightness is essential is one which presents a metal surface, and mine is constructed upon this plan, as will be seen by reference to the drawings, where B is a thin sheet of metal forming the outer surface of my improved board.

The great objection that has been found to the use of metal in the covering of railroad-cars is that it vibrates so readily as to greatly increase the noise upon a running train, and further bends so easily that the outer surface is liable to present a more or less indented or irregular appearance. The first objection has already been partially removed by combining with a sheet-metal surface a body or backing of fibrous material to take up the vibration, the two being cemented or otherwise fastened together. My invention is in the nature of an improvement upon this construction, and, while going still further in reducing the vibration of the metal, it also adds the final requisite of stiffness or rigidity; and to this end it consists, essentially, in corrugating the metal sheet or stamping or rolling depressions therein and closely filling the same with a plastic substance, preferably cement, which will harden therein and become, for

the purpose of resisting flexure, a part of the metal sheet.

In the drawings, A represents a portion of one of my improved boards. The external surface thereof will be seen from Figs. 2, 3, 4, and 5 to be formed by a thin sheet of metal B, rolled with a longitudinal corrugation *b*, which is filled with cement C, the latter preferably containing some fibrous material, as asbestos, to prevent it from crumbling. This cement may be made to fill the depressions merely, as shown in Fig. 3, or enough may be used to furnish a backing for the entire metal sheet, as in Fig. 4. I prefer the former method, however, and for the latter purpose use a strip of fibrous material, preferably asbestos felt, as shown at D in Fig. 2. This may be attached to the metal sheet in any suitable way; but I find it best to cement it thereto and to turn over the edges of the metal, as shown at *b'*, bending the same down tightly upon the felt—a construction which insures a clean true edge for the board and prevents the separation of the metal and felt in handling.

The size, shape, and number of the corrugations or indentations are of course immaterial, and the same may be made in the form of strips, grooves, or ornamental figures of any kind to suit the different uses to which the board may be put. When rolled or stamped with ornamental designs, the board makes a very attractive inside finish, and by using asbestos cement for filling and asbestos felt for body or backing it will be rendered absolutely fire-proof.

For a great many purposes the form shown in the drawings will be found useful. The metal is here rolled with longitudinal corrugations or depressions, the number depending upon the width of the board and the style of finish desired, and in applying the board a tight as well as a neat surface is made by covering the joints or cracks between the boards with steel strips E to match the corrugations *b*.

In using the word "corrugations" herein I do not limit myself to the specific definition of that term, but use it in the sense of any depressions or raised portions whatever upon the surface, whether in parallel lines or not,

and whether they be formed with sharp angles or in curves.

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

- 5 1. A corrugated metal sheet containing a solid filling within the corrugations thereof, in combination with a backing of fibrous material fastened thereto, as and for the purpose stated.
- 10 2. The above-described composite board,

composed of the corrugated metal sheet B, the filling C, the backing D, the metal sheet being turned over and pressed down upon the backing, as shown at *b'*, as and for the purpose stated.

WILLIAM W. GREEN. .

Witnesses:

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HARRY BITNER.