

S. J. SEELY.
CORRUGATED METALLIC CAR.

No. 28,041.

Patented Apr. 24, 1860.

Fig. 3.

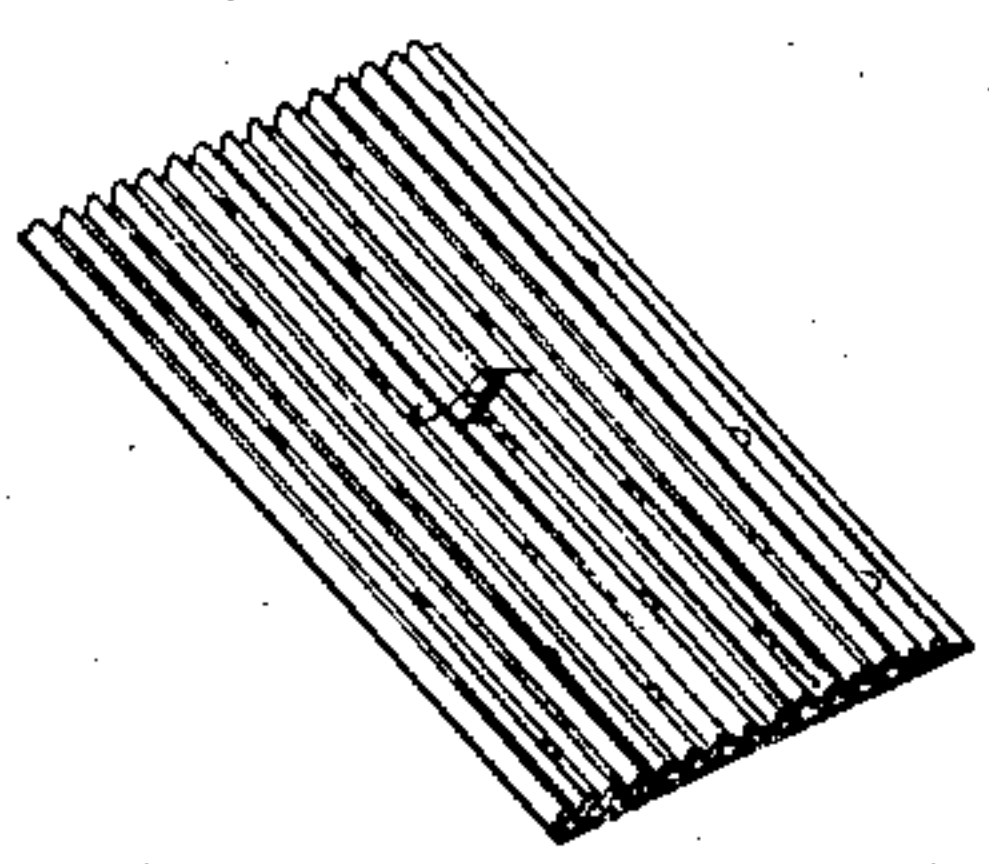


Fig 5



Fig. 4.

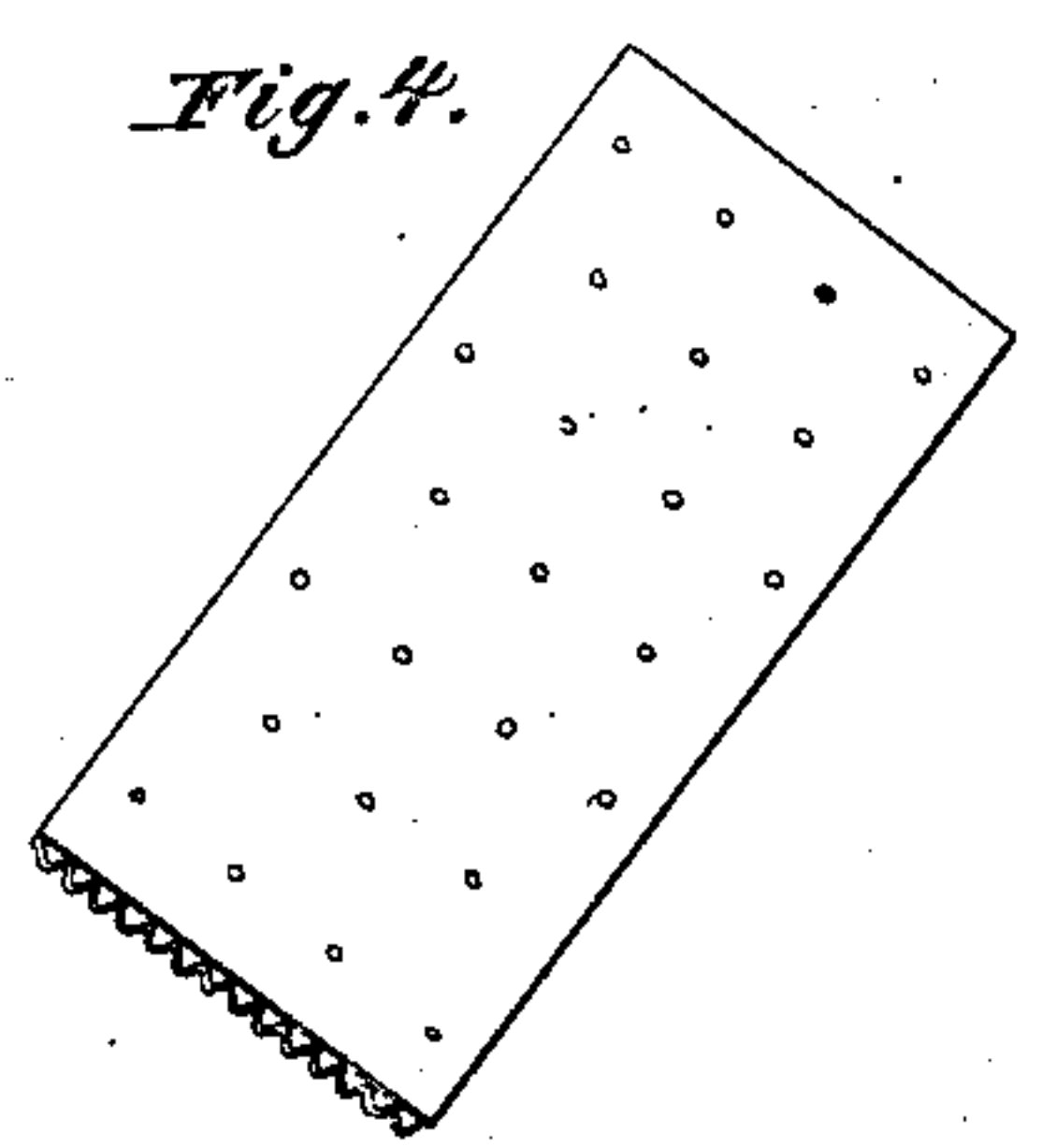


Fig. 1.

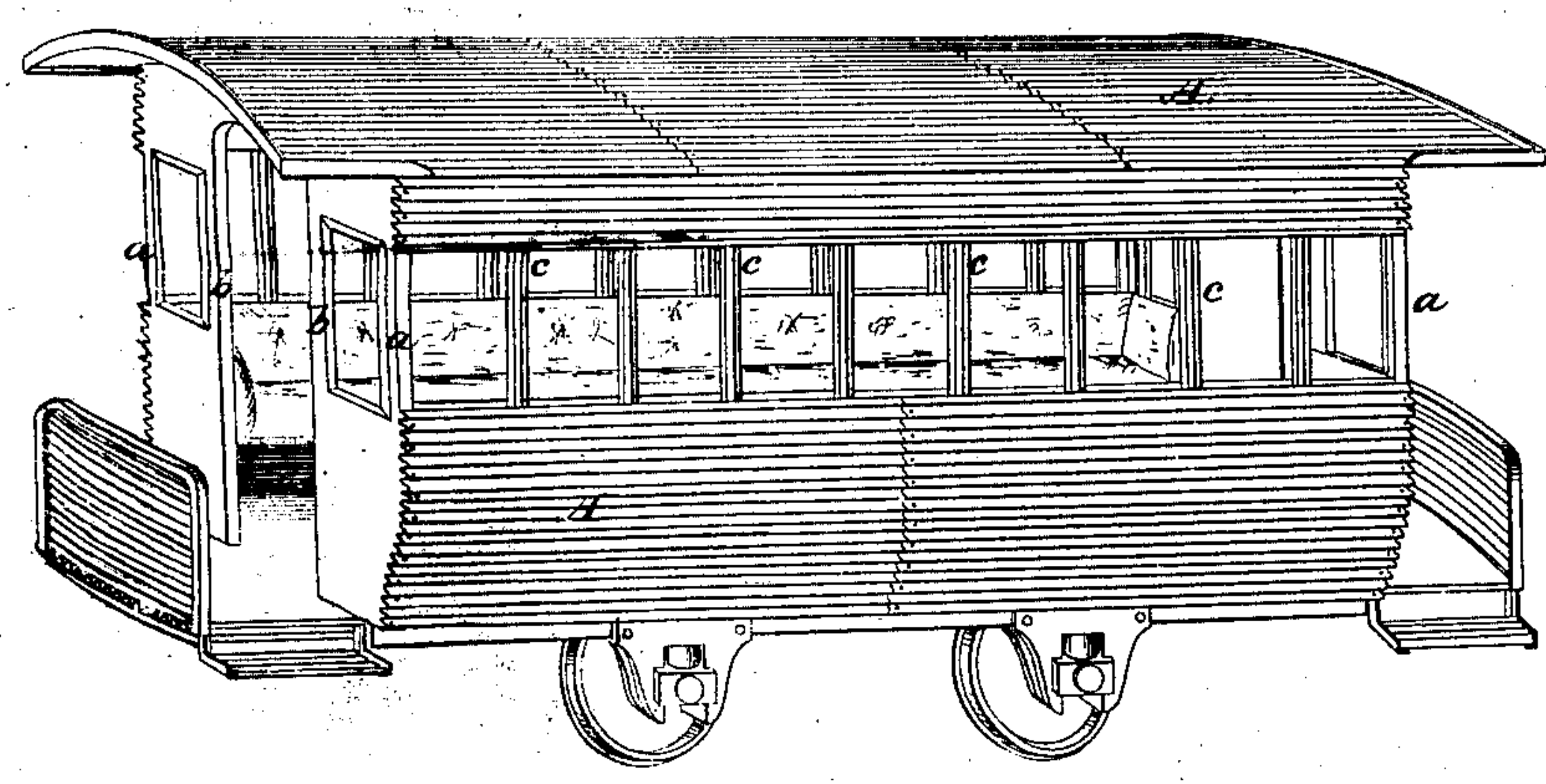
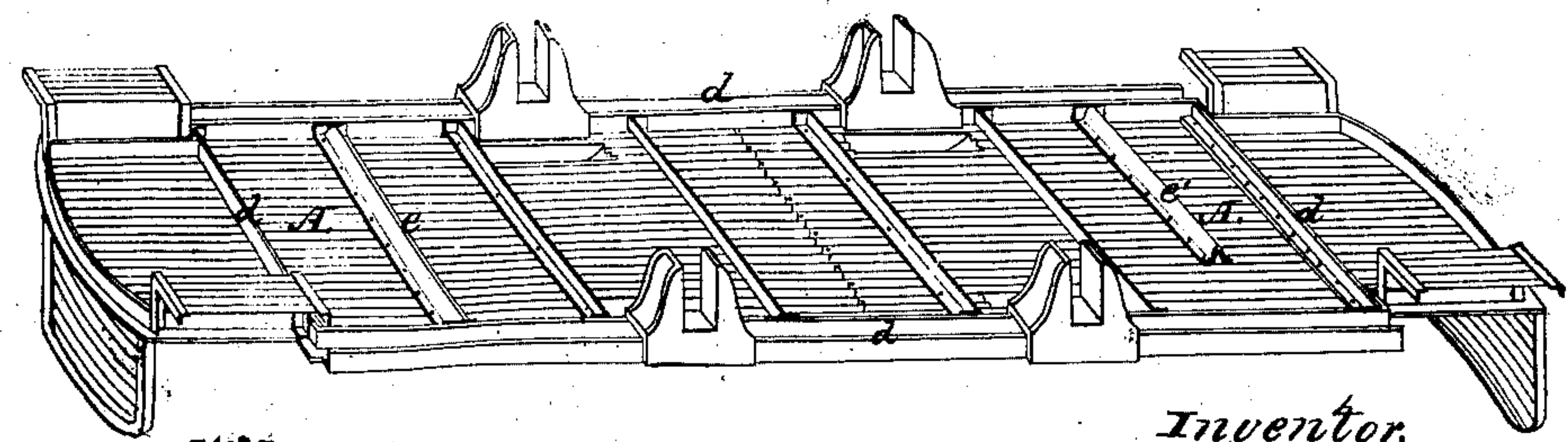


Fig. 2.



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RAILROAD-CAR.

Specification forming part of Letters Patent No. 28,041, dated April 24, 1860; Reissued October 2, 1860, No. 1,055.

To all whom it may concern:

Be it known that I, SAMUEL J. SEELY, of Buffalo, State of New York, have invented or discovered a new and useful Improvement in the Construction of Railroad-Cars and other Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof and of its construction and mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in constructing the bodies of railroad cars and other vehicles of metal plates corrugated into a continued series of direct and reversed arches, and secured by and upon angle and trough irons; the design of my invention being to secure a greater degree of strength in the vehicle to bear weight or resist pressure than has ever before been attained with the same weight of material.

Figure 1 is a perspective view of a railroad car embodying my improvement. Fig. 2 is a view of the bottom of such car. Fig. 3 is a view of a plate detached, and showing its corrugations. Fig. 4 is a view of the opposite side of Fig. 3, showing a face or smooth plate, when such is desired. Fig. 5 is an end or sectional view of a trough iron, used for staying the bottom, &c.

The body of the car, carriage, &c., is intended to be made entirely of plates of iron, which are bent or pressed up by proper dies, as seen in the drawings at A, A, so that they are corrugated, to form a continued series of alternate arches and reversed arches. By giving the metallic plates this form, a vastly increased strength is obtained, both to support weight or burden, and also to withstand pressure or resistance from without, as in the case of any accident, over metal applied or used in flat plates, and over metal plates corrugated at intervals on one side of the plate, leaving spaces of flat metal between the corrugations, and this too with a very little thickness of iron. The corrugations may be larger or smaller, according to the size of the carriage, or as desired, the principal thing to be regarded in their construction being that the bend or angle of the corrugations should not be so acute, as to break, or crack, or weaken, by means of sharp

bends, the iron, and impair its natural strength.

The top, and bottom and sides of the body of the car or carriage as shown in Figs. 1 and 2 are formed of such corrugated plates, which are riveted together for such purpose as found necessary. Such plates may be lapped over each other, and then riveted, though where their ends come together I prefer to have them abut against each other, and over the joint corrugated strips are placed, on either or both sides of the plates, and then the whole riveted together. Where the plates meet together at their sides, they can be most conveniently connected by letting them lap the distance of one or two corrugations, and then riveting them together.

Strong pieces of angle iron form the corners of the cars, carriages, &c., and to such pieces *a, a*, the corrugated plates are riveted. The door casings *b, b*, are also of iron (and these may be made if desired a continuous strip or piece shaped and bent as necessary) to which also the corrugated plates are riveted. Other angle irons *c, c*, extend up the sides of the car, forming the casings of the windows, and for greater strength some or all of these may extend under or across the bottom of the car. To such irons *c, c*, the corrugated plates are also riveted, as found necessary. Other pieces of angle or bent iron *d, d*, extend about the bottom of the car, forming the frame work or sleepers, and dispensing with the use of heavy timbers, or wood of any kind for such purpose. To these the sides and ends of the car are firmly riveted as are also the corrugated sheets forming the bottom of the car, carriage, &c. Instead however of such angle or bent irons forming the framing for the bottom of the car or carriage, and extending across the bottom, trough irons *e, e'*, Fig. 2, and an end or sectional view of which is shown in Fig. 5 and at *e'*, Fig. 2, may be used with great advantage, as the form of these trough irons is such as to give increased strength, without increase of metal. And indeed such trough irons are equivalent, except in being somewhat thicker and heavier, to a single corrugation having its flanges flattened or made straight for a base, and for better fastening to the corrugated plates. Across the top also run suitable angle irons,

to which the corrugated plates are riveted; and such stay or angle irons also connect with those at the corners, and on the sides of the body.

5 As a general thing the body of a car, &c., will be composed of two corrugated plates, one on the outside and the other on the inside of the angle or stay irons; but for cheaper cars the plates need be placed only
10 on one side of such irons. When increased strength is required, two corrugated plates may be used, one placed upon or against the other, and for greater strength the corrugations of one plate running in an opposite
15 direction from those of the other. The use of two or more plates will be found most generally desirable and more particularly for the bottoms, or floors in cars or vehicles designed to carry or support great weights
20 or heavy burdens, as freight cars on railroads, trucks, drays, &c. For the latter, trucks, drays, &c., only the bottom frame work of iron, and the corrugated plates to cover them and make the floor or bottom,
25 will be necessary, the sides and top not being required.

Where, as in railway passenger cars, and carriages, &c., it is desirable to have the interior of the car or carriage smooth, flat
30 plates of metal are placed upon and riveted to the corrugated plates, as shown by Figs. 3 and 4, and when desired these flat plates Fig. 4 may be struck up with any figures or designs, and thus the interior be rendered
35 more tasteful and ornamental.

The spaces between the outer and inner

corrugated plates form air chambers, which will cause the car or carriage to be cool in summer, and such spaces may be used for ventilation or for the circulation of heated
40 air in winter.

In constructing cars, carriages, &c., in the manner above described, no wood or combustible matter is made use of, and the car or other vehicle is much lighter and stronger
45 than when made of wood in the usual methods, and also much stronger than when made of corrugated metal plates having corrugations formed on one side at intervals.

I am aware that corrugated metal plates
50 have been used for the construction of the bodies of vehicles, and I do not therefore broadly claim the construction of railroad cars and other vehicles of corrugated metal plates, but
55

What I do claim as my invention and desire to secure by Letters Patent is—

The application to the construction of the bodies of railroad cars and other vehicles of metal plates corrugated into a continued series of direct and reversed arches, and secured together by and upon the angle irons
60 *a, b, c, d*, and the trough irons *E*, as herein set forth, whereby a greater degree of strength in the vehicle to bear weight or resist pressure is secured than has ever before
65 been attained with the same weight of material.

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Witnesses:

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CHAS. L. ISAACS.