I. G. MACFARLANE.

Improvement in Railway-Cars.

No. 131,360. Patented Sep. 17, 1872.

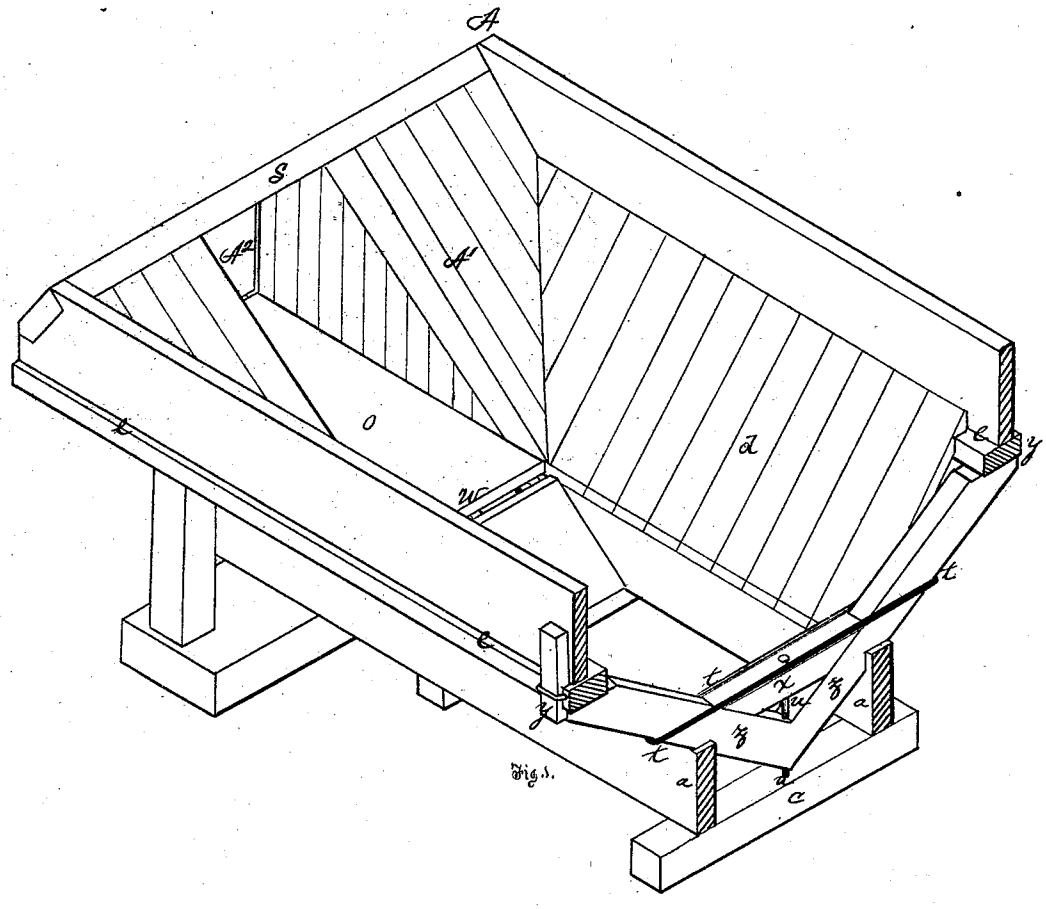

Fig. 1.

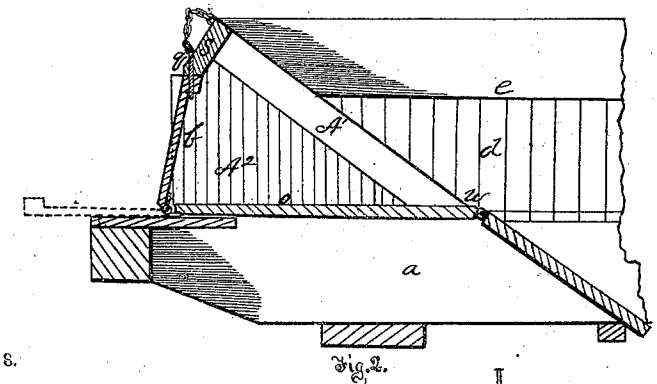

Fig. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

ISAIAH G. MACFARLANE, OF WILKINSBURG, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY CARS.

Specification forming part of Letters Patent No. **131,360**, dated September 17, 1872.

To all whom it may concern:

Be it known that I, ISAIAH H. MACFARLANE, of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Railway Cars; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a detached perspective view, showing the construction of the center braces; and Fig. 2 is a vertical section of the end of the car-body.

Like letters of reference indicate like parts in each.

My invention relates to an improvement in the construction of railroad cars of the class described in the Letters Patent granted to me on the 23d day of April, A. D. 1872; and consists in the devices hereinafter described and claimed for strengthening the body of the car at the middle and for increasing the carrying capacity of the same.

Below or under the middle of the hopper-shaped car-body A I bolt or otherwise fasten to the bottom rails *a a*, at right angles thereto, a cross piece or bar, *c*. Extending upward from the middle of this bar, in a direction parallel, or nearly so, to the inclined sides *d d* of the car, are two braces, *z z*, which extend up to, and at their upper ends support the side rails *e e*. In order to fasten them more securely to the side rails I attach them also by the cleats *y y*. They are also fastened to the bottom rails at *v v*. Extending across between the braces *z z*, inside of the car-body A, is a brace, *x*, which is fastened to braces *z z*, and stands at or nearly at a level with the lower edge or side of the end opening *w*. Running down vertically from the brace *x* through the jointed ends of the braces *z z* to the cross-piece *c* is a bolt or rod, *u*. This bolt tends to bind these parts very firmly together. The braces *z z* are supported beyond the bottom rails *a a* by the double tie-rod *t*, which, embracing them, runs across the car-body A at the sides of the brace *x*.

The advantage of this construction is that the sides are supported, and most of the pressure of the freight, which heretofore was directly upon them, is transferred to the bottom rails *a a;* and at the same time the brace *x* is set so low as not to interfere with the carriage of long freight, such as railroad rails, &c.

In the Letters Patent referred to, when this car was to be used for carrying coal and like freight, the end door *o* is described as being secured to the end piece *s*, so as to form part of the inclined end A^1, and close up the passage A^2. I find that by permitting the door *o* to remain in a horizontal position, so as to form the floor of the passage A^2, and by closing the outer end of the passage by a door, *b*, opening outward, I am enabled to secure a considerably-increased capacity in the car-body.

The door *b* is fastened to the end rail *s* by a fastening of any suitable kind, as, for instance, the pin *q*. When this door is opened and thrown down it makes a movable platform, such as is described in the said Letters Patent, for convenience in loading or unloading the car.

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

1. The braces *z z* and *x*, bolt *u*, double tie-rod *t*, and cross-piece *c*, in combination with the bottom rails *a a*, all arranged substantially as described, and for the purposes set forth.

2. The vertical door *b* with its fastening *q*, in combination with the end passage A, substantially as described.

In testimony whereof I, the said ISAIAH G. MACFARLANE, have hereunto set my hand.

ISAIAH GRAHAM MACFARLANE.

Witnesses:

A. S. NICHOLSON,

THOS. B. KERR.