

R. EATON.
Freight-Cars.

No. 150,009.

Patented April 21, 1874.

Fig 1

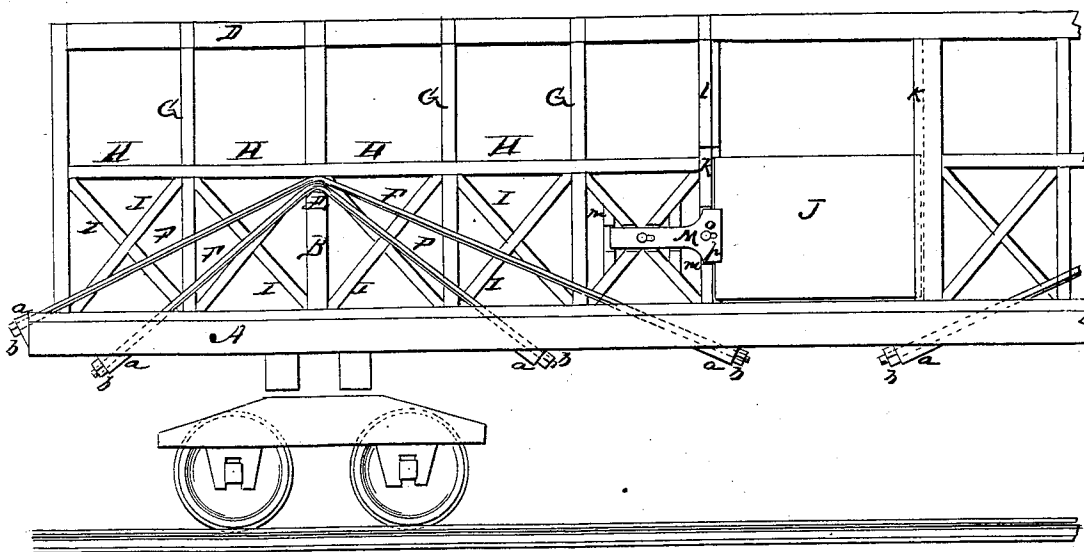


Fig 2

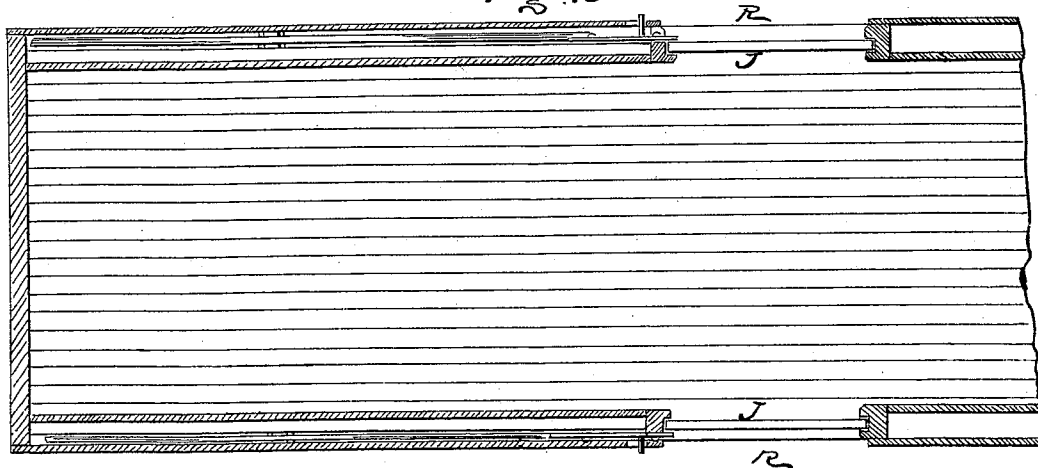
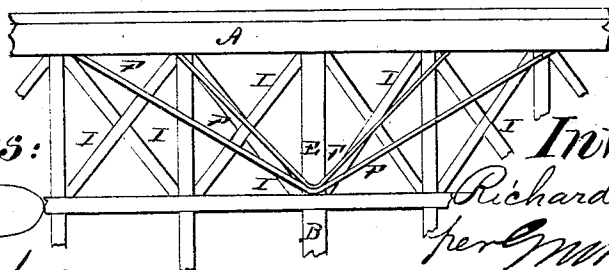


Fig 3



Witnesses:

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Atty

UNITED STATES PATENT OFFICE.

RICHARD EATON, OF MONTREAL, CANADA.

IMPROVEMENT IN FREIGHT-CARS.

Specification forming part of Letters Patent No. **150,009**, dated April 21, 1874; application filed February 2, 1874.

To all whom it may concern:

Be it known that I, RICHARD EATON, of Montreal, in the Province of Quebec and Dominion of Canada, have invented a new and useful Improvement in the Construction of Railway-Cars; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon making a part of this specification.

This invention is in the nature of an improvement in the construction of railway-cars; and the invention consists in constructing the side frames of cars with radiating suspension-rods and diagonally-trussed framing, so as to form a rigid bridge-truss; and the invention still further consists in constructing the doors of freight or grain cars so that when it is desired to open such doors the pressure of the grain or freight within the car will facilitate the opening.

As is well known, in the ordinary construction of cars designed to carry heavy burdens, the length of span between the trucks of the car renders it impossible to carry upon such cars as great a load as would be desirable, and as the size of the car would otherwise admit. To strengthen and render rigid the frame-work of the car to support heavier loads has long been the desire of car-builders and engineers.

By my invention it is believed that the side frames of cars will be so much strengthened that the span between the trucks will be very nearly, if not quite, as rigid, and capable of bearing a load as any other part of the frame or car.

In the accompanying sheet of drawings, Figure 1 represents a longitudinal elevation; Fig. 2, a plan or top view partly in section; and Fig. 3, a modification, showing application of invention to platform-cars.

Similar letters of reference indicate like parts in the several figures.

A represents the side frame or sill of a car. Mortised into the upper edge of this frame, in such position that they will be immediately above and in continuation of the central line of the trucks, are abutments or king-posts B B, these posts extending upward to the side framing D of the roof. To each of the king-posts B B, and at a point midway from their

upper and lower ends, are bolted shoulders or brackets E. Onto these brackets are placed suspension-rods F, the rods being properly bent to fit the brackets, from which they radiate on each side of the king-posts, as shown in Fig. 1, and pass through the side frame or sill A, to which they are secured by means of washers *a* and nuts *b*. These suspension-rods may be constructed either of steel or iron, and their number may be increased or diminished, as the length of the car and the weight to be carried may require. Properly mortised into the upper edge or side of the sill or side beam A are stanchions G, which extend from said sill to the roof-frame D, and to the stanchions G, midway between the side and roof frames, are secured, in any desirable way, the horizontal belt-pieces H. Between the stanchions G, and extending from the side frame A to the belt-pieces H, and crossing each other nearly at right angles, are diagonal struts I, which are secured in position by bolts, or in any desirable way.

The several parts constructed and arranged as above described constitute a trussed beam of great strength and rigidity, so that the carrying capacity of the car is increased to a great extent, and at the same time the cost of constructing the car is not materially augmented.

Since the manner of trussing between the sill A and horizontal belt-piece H may be varied without materially departing from the spirit of my invention, I do not wish to confine myself to the particular manner, hereinbefore described, of placing and fitting the diagonal struts I.

To obviate the difficulty experienced in opening the doors of freight-cars, particularly such as are laden with grain, I construct the grain-door J of my freight or grain cars so that one of its sides shall be received into a shallow groove or rabbet, *k*, and its other side be held in position by a guard, K. This guard is formed of a strip of wrought-iron, which is placed outside the door-post *l* of the door in such manner as to rest partially against the side of the grain-door J and said post, in which position it is held by a horizontal bar, M, forming part of, or secured to, said guard, this bar sliding in suitable ways or guides *m*.

When it is desired to open the car, the outer

or ordinary door R is slid back, and the bar M is moved backward in the guides *m*, carrying back with it the guard K, thus leaving the one side of the grain-door J unprotected, so that the pressure of the grain within the car will force the unprotected side outward and free from the rabbet *k*, the door being in this way wholly detached from the car, leaving its contents exposed for removal. By this construction the difficulty of opening grain-cars, which has hitherto given great trouble, by reason of the great pressure from the inside of the car, is prevented, my invention aiding the opening of the car.

It is obvious that my method, hereinbefore described, of strengthening the sills or side beams of cars by means of radial suspension-rods and trusses is equally applicable to strengthening the side frames of platform-cars. In this case, however, the brackets over which the suspension-rods are fitted are bolted to the outer sides of the sills of the cars, and radiate thence to a belt-strip placed below the car-sill, through which it passes and is secured, as before described, the diagonal struts being fitted and secured between said

belt-piece and the under side of the car-sill, as shown in Fig. 3.

I am aware that it is not new to strengthen the frames of cars with ties and tension-rods of wood and metal extending the length of the cars, or arranged over the trucks, and I do not claim this; but

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A railway-car having a sill and belt-piece combined with king-posts, stanchions, suspension-rods, and struts, forming a truss, constructed and arranged as described and shown, for the purpose specified.

2. A grain or other freight car provided with an auxiliary door held in place by a guard, M, and a groove, and combined with the main door, so that when said main door is opened pressure of the freight within the car will detach the said auxiliary door, substantially as set forth.

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Witnesses:

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