B. J. LA MOTHE.

Railway Car.

No. { 2,346, / 33,350. }

Patented Sept 24, 1861.

Fig. 4.

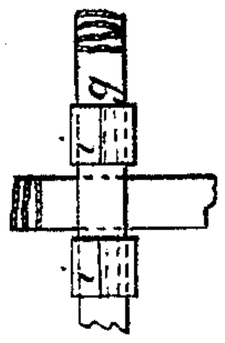


Fig. 5.

Fig. 8.

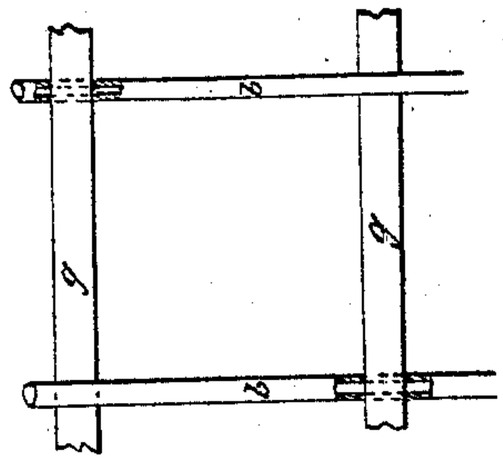


Fig. 6.

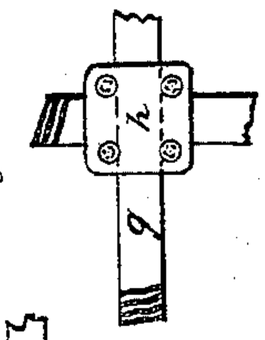


Fig. 7.

Fig. 3.

Fig. 2.

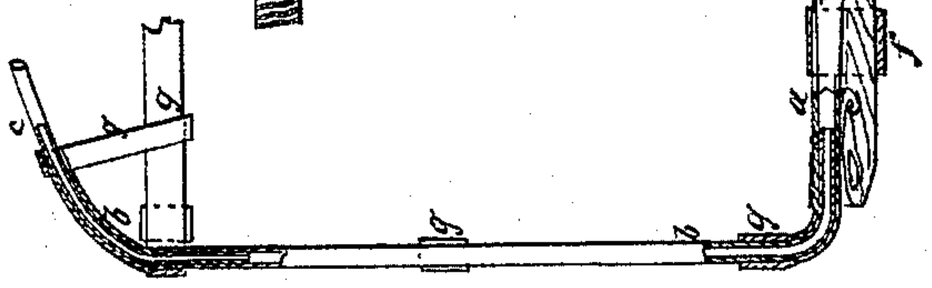
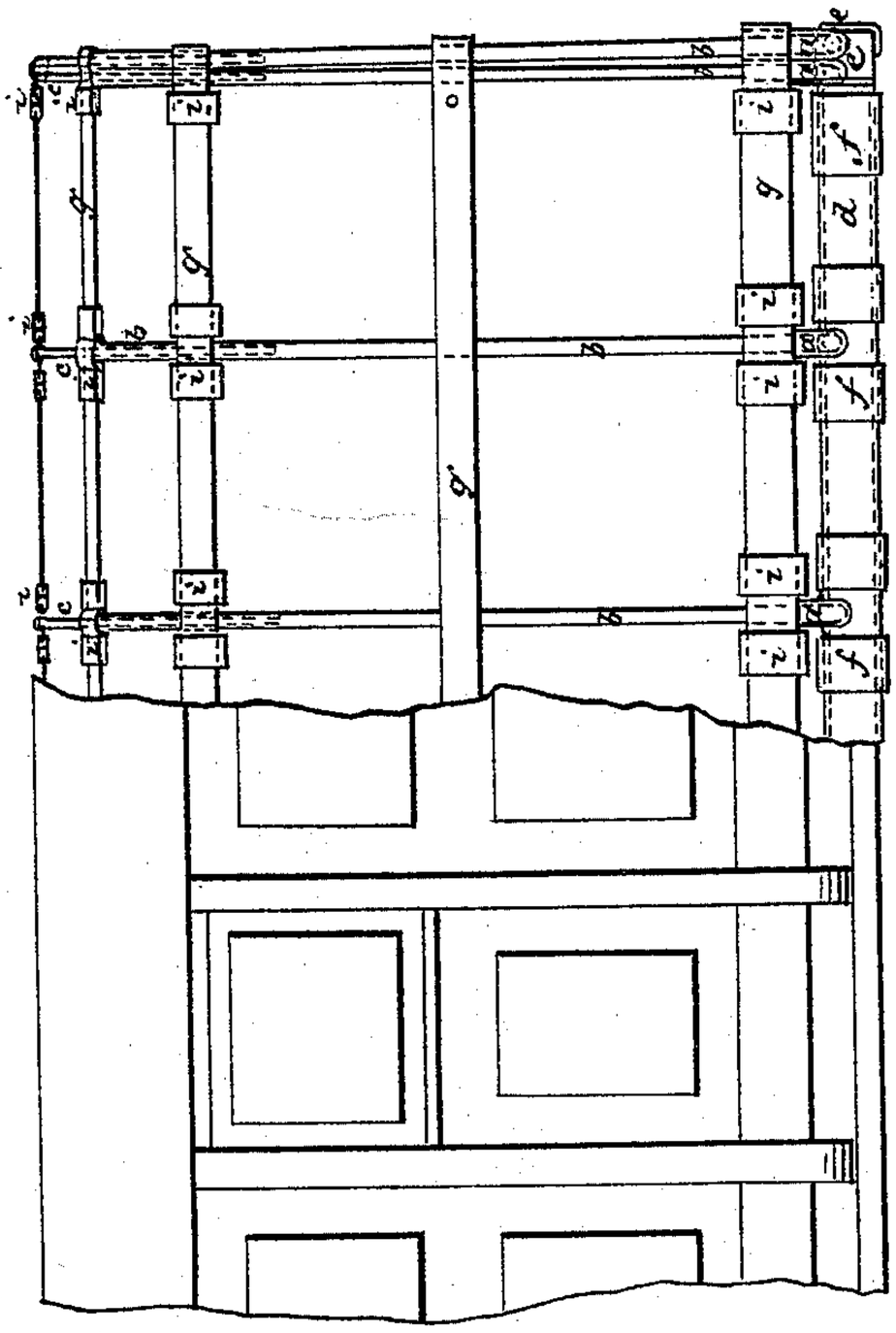


Fig. 1.



Witnesses:

Samuel W. Serrell.

Thos. Harold

"

Inventor:

B. J. La Mothe.

UNITED STATES PATENT OFFICE.

B. J. LA MOTHE, OF NEW YORK, N. Y.

IMPROVEMENT IN METALLIC CARS FOR RAILROADS.

Specification forming part of Letters Patent No. **33,350**, dated September 24, 1861.

To all whom it may concern:

Be it known that I, BERNARD J. LA MOTHE, of the city and State of New York, have invented and made a certain new and useful Improvement in Metallic Cars for Railroads, &c.; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a side view of a portion of my car showing the general character of the metallic frame employed. The other figures illustrate the details of the frame-work, and similar marks of reference denote the same parts.

My said invention has special reference to the manner of constructing the metallic framing employed in railroad-cars, carriages, or other vehicles, whereby I am enabled to obtain great strength and lightness with but little cost, and the framing thus obtained is adapted to the reception of panels of iron, wood, or other material, and to the introduction of windows, ventilators, &c., at points desired.

In order to form the transverse ribs or skeleton of my car, I make use of metallic pipes set the one into the other and growing less toward the top of the car or carriage. Fig. 2 illustrates the construction of these cross ribs or skeletons. *a* is a pipe of sufficient length, into which the pipes *b b* are inserted while the pipes are straight, and then said pipes are bent into a curve where the two thicknesses occur, which simultaneously secures the two pipes inseparably together, and also forms the union between the vertical side pipes *b b* and the horizontal floor-pipes *a a*. The pipe or bar *c*, forming the rib to support the roof, is introduced in the same manner into the ends of the pipes *b b*, and retained by bending the two together at the upper ends of the pipe. When the pipes for the transverse side ribs can be obtained of a sufficient length, the strength necessary at the point where they are bent may be obtained by a piece of pipe or a bar introduced into the pipe at this point before bending or by a larger piece of pipe slipped over the rib to the said point and the two bent together. The desired number of transverse ribs being thus constructed and prepared to an exact shape or pattern, they are to be set up so as to form the frame or skeleton of a railroad-car or other vehicle and sustained by any suitable means while being connected together longitudinally of the car, as hereinafter set forth. These pipes may be heavier for the platform or closer together than for the upper part of the sides and roof, and in places where considerable strength is needed three pipes may set into each other.

As the platform has to sustain the greatest amount of strain and weight, I introduce a heavy and strong longitudinal beam or beams *d*, and at the ends of the car I introduce a cross-beam *e*, forming a T shape with the center or longitudinal beam *d*. These beams may be made of a series of iron pipes branching off at the ends of the car to form the cross-beams *e*, the pipes themselves being strengthened where bent in the same manner as the ribs *a b*. I, however, have illustrated in the drawings a mode of forming these beams *d* and *e* of wood and iron that may sometimes be the most available. The cross-ribs are to be let into notches in the beams *d* and there retained by longitudinal bands or bars of iron, with which said beam *e* is covered, and these longitudinal bands are to be firmly bound and held in place by means of clamps *f f*, that not only bind the longitudinal bars to the beam *d*, but also bind the ribs *a a* to the beam. The metallic bars that surround these beams should be bent at the angle between these two beams *d* and *e*, so as to branch off and form a very rigid connection between the two, and in cases where the wood filling to keep the metal bars apart would not be sufficiently durable, thimbles or short pipes may be introduced and also rivets or bolts passing through these and the metal bars to secure them rigidly to each other. From this cross-beam *e* the outside platform of the car is to be extended in any usual manner.

To tie the transverse ribs together along the sides of the car on the roof and at the ends I make use of longitudinal bands *g*. These are to pass on each side of the vertical pipe or rib and may be composed of two or more bands, and to retain the ribs and bands firmly together at the points of intersection

I make use of collars or clamps *i i* that are made of a metallic strip welded or bent up into an oblong shape of the size required and either threaded upon the bands or else clasped around them some little distance from the points of intersection at each side thereof, and when the bands are all in place in the whole car or a portion thereof, these collars or clamps are driven up as closely as possible on each side of the transverse bands or ribs, so as to tighten them all up, and the clamping operation will be so perfect that the bands cannot change place or work loose in use. In some places the bands may intersect each other, as shown in Figs. 4 and 5, and in that case the collars or clamps *i i* are as equally available. In some instances there may not be sufficient room for driving up these collars or clamps, or the so doing might throw the parts out of line, in which instance I make use of the clamping-plates *h* on each side of and covering the intersection of the bands and ribs, as seen in Figs. 6 and 7, and by inserting rivets through these plates *h* close into the angles formed between the bands, the parts will not only be rigidly bound together, but a change of angle between the bands crossing each other is rendered impossible by the introduction of these rivets. The door-frames at the ends may be formed of a bent pipe, the bottom ends of which pipe may be slit up and spread so as to clasp over the transverse pipe *a*, as seen at *k*, Fig. 2. The ends of the bands where they come to the door-frames may be bent around said frames and retained by a clasp or clamp, or may be passed into a slot cut through said pipe and the end bent over. In some instances a band or piece of metal may be introduced through slots in the said pipes and be contained between the longitudinal bands and within the clamps or collars *i*, so that motion of the bars on the pipe is entirely prevented by the said piece. Fig. 8 represents the band in question introduced through the pipe. The pipes might be notched on the side or be partially flattened for this same purpose of preventing motion endwise of the pipe between the bands. It will be evident that the clamps *h* and *i* hold the parts firmly together without weakening the bands or ribs by holes for rivets, and that the labor and expense necessary for the fitting of the metallic bands heretofore employed, perforating the same, and riveting them are avoided.

On the left-hand part of Fig. 1 an illustration is given of the mode of finishing the car with panels and windows. These, however, are to be of any desired character.

My car is strong, light, easily constructed, and perforations in the bands and riveting are avoided, and very little trouble is involved in putting the parts correctly together.

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

1. The employment of pipes or tubes for forming the ribs of framing of a railroad-car or other vehicle, when the same are strengthened at the parts where bent by bars or pipes, as set forth.

2. The combination of the aforesaid ribs, (formed of pipes,) with bands running longitudinally of the car or with the beam or beams *d*, as set forth.

3. The metallic clamps or collar *h* or *i* applied at the intersections of the bands or ribs, as set forth, for binding the parts together and avoiding the perforation of the bands themselves for the introduction of rivets or bolts, as specified.

In witness whereof I have hereunto set my signature this 19th day of August, 1861.

B. J. LA MOTHE.

Witnesses:

LEMUEL W. SERRELL,

THOS. GEO. HAROLD.