MINER & MERRICK.

Railway Car.

No. 26,777. Patented Jan. 10, 1860.

Fig. 1.

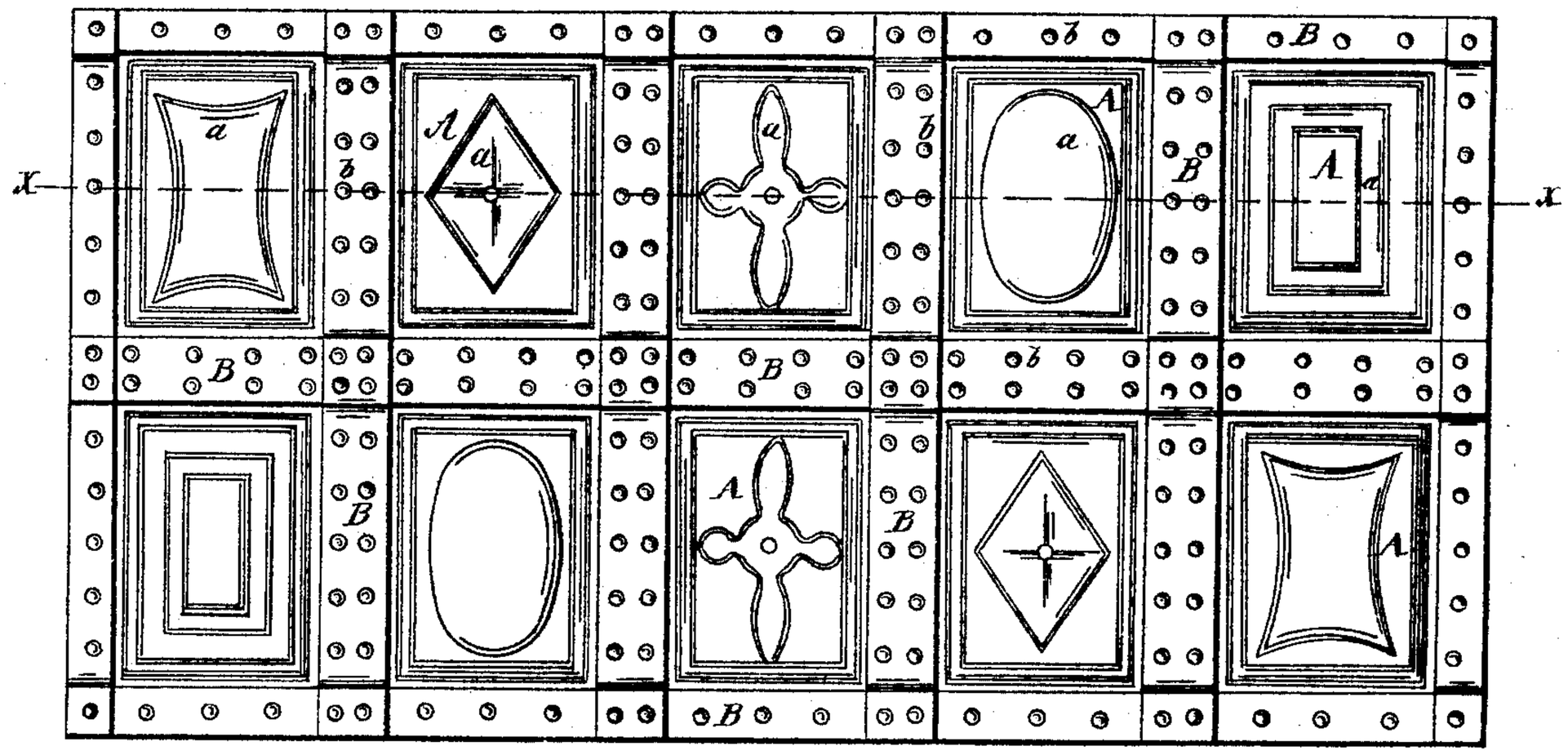
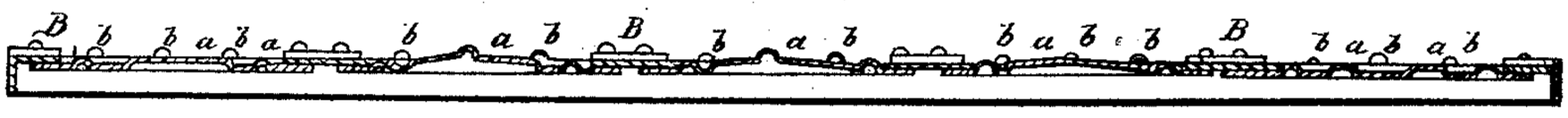


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN MINER AND SILAS MERRICK, OF NEW BRIGHTON, PENNSYLVANIA.

IMPROVEMENT IN IRON RAILROAD-CARS.

Specification forming part of Letters Patent No. **26,777**, dated January 10, 1860.

To all whom it may concern:

Be it known that we, JOHN MINER and SILAS MERRICK, both of New Brighton, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in the Construction of Iron Cars for Railroads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents several different varieties of panels and a portion of the frame-work of the car, showing the manner in which the two are connected; and Fig. 2 represents a longitudinal section through the same at the line *x x* of Fig. 1, showing the manner in which the plates or panels are pressed or struck up, in order to give them the requisite degree of stiffness.

When cars constructed chiefly of wood are employed for the transportation of passengers, the latter are exceedingly liable (in case of an accident, such as a collision or the running of the cars off the track) to injury from the splintering and breaking of the woodwork of the car; and in fact a large proportion of the mischief done on such occasions proceeds from this cause. Moreover, cars thus constructed are of a highly-combustible nature, and consequently always liable to take fire; but even if preserved from the dangers above named the constant jarring and straining to which they are subjected while in use wears them out very rapidly and necessitates constant repairs or replacement of the worn-out parts.

Impressed with the great advantages possessed by cars constructed entirely of metal (or those in which but a small proportion of wood is used) in the qualities of durability, incombustibility, and safety to passengers, inventors have recently turned their attention to this subject; and as iron is the cheapest and most convenient metal that can be used it was naturally preferred for this purpose. The great desideratum has been to procure a car which could be constructed at a cost comparatively small, but which at the same time should be durable and possess a sufficient degree of strength to answer the purpose for which it is intended without exceeding in weight the wooden cars previously in use, as it is manifest that the lighter a car can be made with the requisite strength the more economically can the road be operated.

Our invention enables us to attain these objects in a highly-satisfactory manner; and it consists in constructing the panels which fill the spaces between the frame-work of the car of single a piece of sheet metal of suitable thickness, raised by the hammer or by dies or otherwise, so that they are struck up in the center with an oramented or plain raised concave from the interior of the car, or the center may be sunk, and thus made concave to the exterior of the car, which plate is securely fastened round its edges, by riveting or otherwise, to the frame-work surrounding the space it is designed to fill, by which method of construction we are enabled to secure a strong, light, and rigid frame and avoid the rattling which has heretofore been such a serious objection to the use of iron passenger-cars. This pressing up of the panel we regard as of very great importance, as it adds materially to the rigidity of the structure, besides giving a cheap but handsome finish to the car.

In the accompanying drawings several panels pressed up into various figures are represented, in order to show the diversity of ornament of which they are susceptible without departing from the spirit of our invention. The panels A are formed of single sheets of metal, which, by means of suitable dies, are pressed, swaged, or struck up into raised figures *a*, and their edges then securely fastened, by rivets *b* or otherwise, to the surrounding frame-work B. By this method of construction we are enabled very materially to diminish the weight of the car, as the rigidity imparted to the structure by the peculiar formation of the panel, and its being riveted to the frame-work renders it practicable to use much lighter material than we otherwise could.

Plates simply corrugated would not answer our purpose, as they would be much stronger in one direction than in the other, and a car in which such plates were used could not be so cheaply constructed as by our plan. Moreover, it would be almost impossible to secure corrugated plates so as to prevent them from

rattling, which fact alone would be sufficient to bar their general introduction to public use.

The details of the construction of iron cars are so well known to persons skilled in their manufacture that a more precise description of them is deemed unnecessary here.

It is evident that our invention is likewise applicable to carriages, omnibuses, &c., as well as to cars; but as it is more especially adapted to the latter we have so described it.

Our invention may also be readily used in cars constructed with diagonal instead of rectangular frame-work, it only being necessary in such cases to have the shape of the plates or panels conform to that of the spaces between the frame-work. It is also obvious that our invention may as readily be applied to cars constructed of flat or band iron as to those in which angle-iron is employed, although we prefer the latter, as it gives greater strength and lightness.

What we claim as our invention in the construction of railroad and other cars, and desire to secure by Letters Patent, is—

The employment of panel-plates composed of a single piece of sheet metal struck up (whether such raised parts be ornamented or plain) and secured to the frame-work, substantially in the manner and for the purposes described.

In testimony whereof we have hereunto subscribed our names.

JOHN MINER.
SILAS MERRICK.

Witnesses:
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