2 Sheets—Sheet 1.

J. C. PAUL.

Railway Car.

No. 201,585. Patented March 19, 1878.

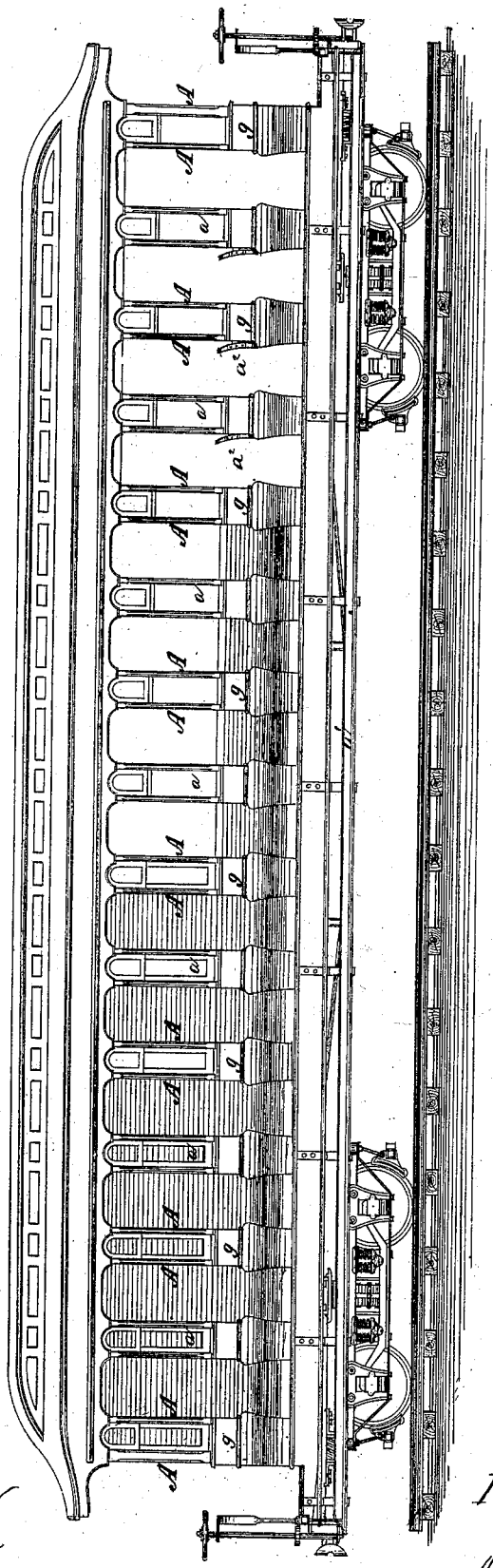

Fig. 1.

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2 Sheets—Sheet 2.

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Fig. 2.

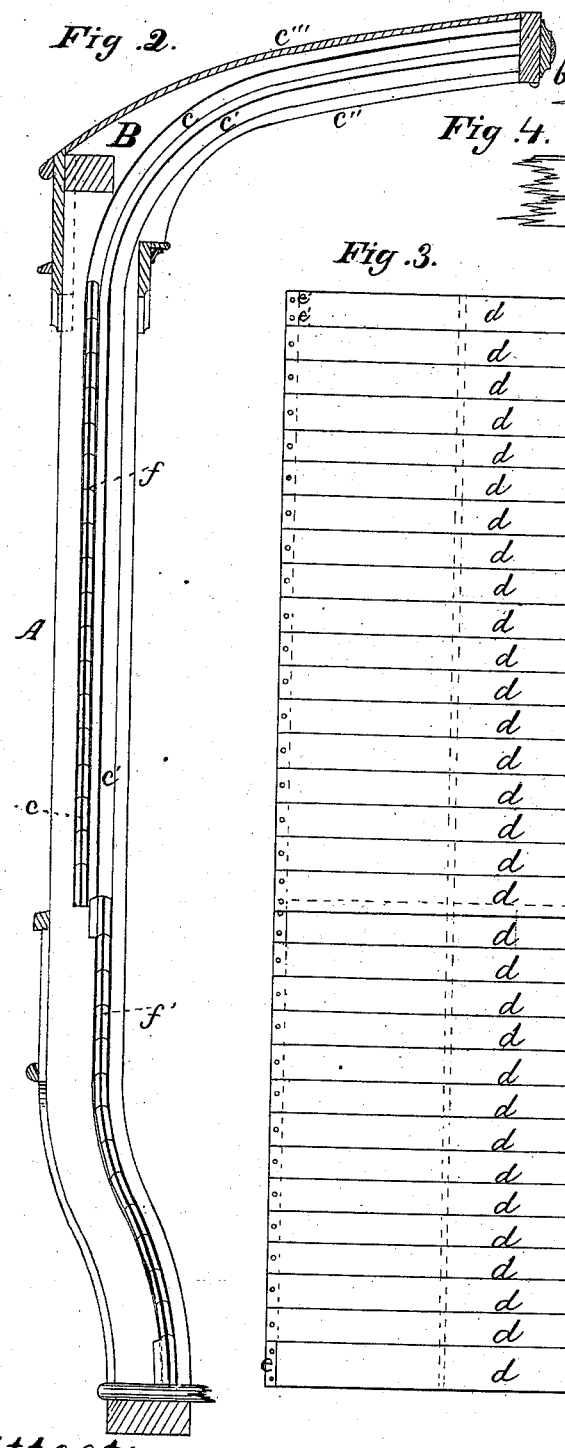

Fig. 4.

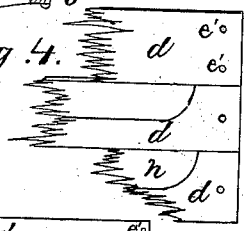

Fig. 3.

Fig. 5.

Fig. 6.

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JOHN C. PAUL, OF SWISSVALE, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-CARS.

Specification forming part of Letters Patent No. **201,585**, dated March 19, 1878; application filed January 16, 1878.

To all whom it may concern:

Be it known that I, JOHN C. PAUL, of Swissvale, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway Passenger-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of the same.

My invention relates more particularly to the construction of open or summer passenger-cars; and the object thereof is to provide means for transforming the open car into a close car, and also to provide blinds for car windows, doors, and other similar purposes.

The said invention consists in devices, hereinafter described, for supplying cars with sufficient light and air, when such cars are provided with sliding flexible blinds, substantially as set forth.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of an open railway passenger-car provided with my improvements. Fig. 2 is a vertical cross-section of one-half of the car-frame, showing the stanchion and carlines in elevation. Fig. 3 represents the flexible blind or door. Fig. 4 is a portion of an open flexible blind for the car-windows. Fig. 5 is a vertical section of the open blind. Fig. 6 is an end view of the flexible blind.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A, Fig. 2, represents one of the stanchions of an open passenger-car, and in Fig. 1 a side view is shown of them as they appear in a full-sized car. They are arranged by twos at the ends of each seat, and between each group of two is a space, a^2, for the entrance-way of the car. In this style of car the seats run across from side to side, and the entrance is from the side through said entrance-ways a^2, and a step, a^1, runs the length of the car. The stanchions A join the carlines B, on which the roof and head lining is placed.

On the side of the stanchions facing the entrance-ways a^2, and on the same side of the carlines, are grooves or rabbets $c\ c'$, the former extending from about half the height of the stanchion, or from a line corresponding to the height of the seats up into the carlines, terminating at the junction of the carline with the dome at *b*, and the latter extending from the bottom of the car the whole length of the stanchion and carline, and terminating at the same point. These grooves or rabbets are parallel to each other, and are made to avoid angles by giving them a curve, as long as possible, at every angle of the profile of the car. Each stanchion and carline has the side facing the entrance-way provided with these grooves or rabbets.

Fig. 3 represents the flexible blinds or doors. They are constructed as follows: A number of slats, *d d d*, having their edges grooved and rounded, so as to form a close joint, as clearly shown in the drawing, are placed together, edge to edge, and joined by a flexible steel ribbon, *e*, on either side, sunk into the ends of the slats, and secured by rivets $e'\ e'$, and a similar steel ribbon or a wire is run through the slats at the middle of the blind.

The steel ribbons are shown by dotted lines in Fig. 3. These steel ribbons, while holding the slats securely together, give the blind great flexibility, so that it will run as readily in a curved as in a straight groove. Two of these blinds, $f\ f'$, are used for each entrance-way, one of which, *f*, is placed in the groove *c*, and the other, f', is placed in the groove c', as shown in Fig. 2. By this arrangement the sides of the car, to the height of the seats, can be closed by the blind f', and the part above remain open, thus giving all the advantages of an open car, and at the same time furnishing a guard against passengers falling out. Owing to their flexibility, these blinds run readily in the curves in the car, and conform without difficulty to the profile or shape of the car, as clearly shown in Fig. 2, where the lower blind, f', is shown curved according to the shape of that part of the car, while the upper blind, *f*, is straight.

When it is desired to have the car close, as during a storm, the blinds are drawn, as shown in Fig. 2 and a part of Fig. 1, so as to close the entrance-way from the roof to the floor of the car; and when this is done the car is as close as necessary to exclude rain or wind.

At other times the upper blind may be run up, and the lower one may remain down, for

the purpose above referred to, which arrangement is likewise exhibited in Fig. 1.

At still other times, as when passengers are entering or leaving the car, both blinds or doors are thrown up, leaving the entrance open. When thus thrown up, the blinds rest in the space between the head-lining c'' and the roof c''', entirely out of the way. In Fig. 1 this arrangement is likewise shown, a part of the car being open.

As it may be necessary, at times, to remove the blinds from the grooves, as when a slat is broken or any other accident occurs, at the junction of the carlines with the dome, where the grooves terminate, I fix a removable strip, which, when taken off, leaves a space through which the blinds can be drawn.

As before mentioned, the stanchions are placed in twos at the ends of the seat, as clearly shown in Fig. 1. Between the stanchions is a space, which is paneled to the height of the car-seats, as shown at *g*, Fig. 1. Above the panels windows are placed, like the ordinary car-windows. The object of this is to give light to the interior of the car when the sides are closed.

As it is important to have all the light possible at such times, I make use of a novel construction of blind for such windows. This blind is flexible, like the blind for covering the entrance-ways of the car; but, unlike them, the slats between the two steel ribbons have openings *h*, which are made by chamfering off the opposite edges of the slats, as shown in Figs. 4 and 5. This gives an opening for the admission of light and air, and as the blinds are single, and the grooves in the stanchions in which they run extend up in the carlines, like those before described, the blind can be run up so as to leave the whole window uncovered.

From this description it will be readily seen that the devices I have described enable me to change the ordinary open car easily and completely into a car as close, nearly, as the ordinary coach.

The only way they have now of closing the sides of the open car is by means of canvas curtains; but as these are both dangerous and otherwise unpleasant, it is manifest they are unsuited to the purpose. My invention offers a cheap substitute for them, which is not only more easily applied and managed, but is much more effectual for the purpose, and, in addition, instead of marring the appearance of a car, adds considerably to it.

The flexible blinds may likewise be used for windows of dwelling-houses, for the windows of the close passenger-coaches, for the entrance-way of the open street-cars, and for the doorways of dwelling-houses.

Open street-cars can be made like the railway-car I have heretofore described, with the necessary modifications to adapt it to its particular purpose.

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

1. The combination of the grooved stanchions and carlines, arranged as shown, with the flexible blinds or doors for closing the entrance-ways, and the window-blinds having their slats chamfered, as shown, whereby an open car can, at will, be transformed into a close car, and supplied with the necessary light and air, substantially as set forth.

2. As an improvement in railway passenger-cars, the blinds for covering the windows, made by joining together the wooden strips by means of the steel or other metallic ribbon, the said slats being provided with chamfered edges, whereby openings are provided for the admission of light and air, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of January, A. D. 1878.

JOHN C. PAUL.

Witnesses:
JOHN NICHOLSON, Jr.,
W. C. DONN.