2 Sheets—Sheet 1.

D. A. FOSTER.

STREET CAR.

No. 185,857. Patented Jan. 2, 1877.

Fig. 1.

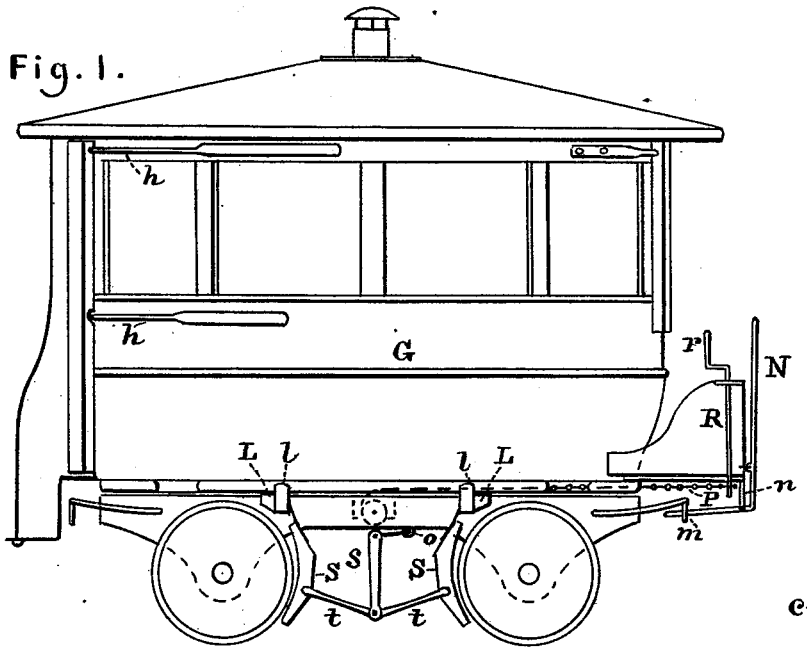


Fig. 3.

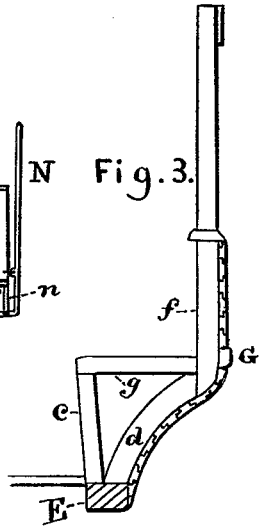
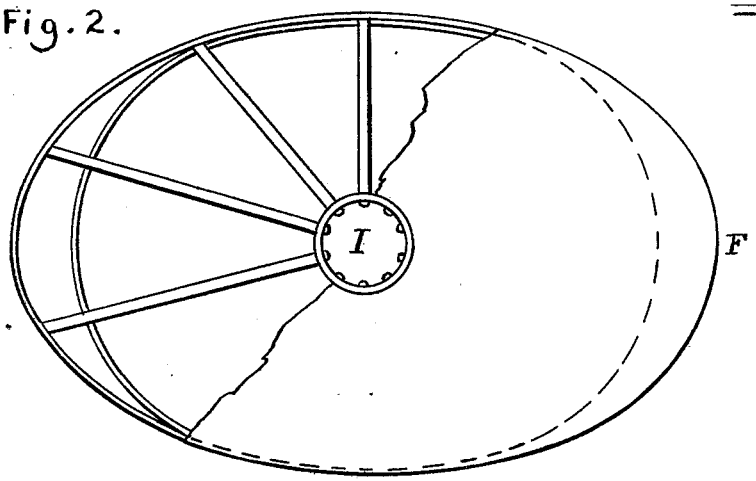


Fig. 2.



Witnesses:
G. B. Towles.
W. Burris

Inventor:
David A. Foster
By Theodor Mungen
Attorney

2 Sheets—Sheet 2.

D. A. FOSTER.

STREET CAR.

No. 185,857. Patented Jan. 2, 1877.

Fig. 4.

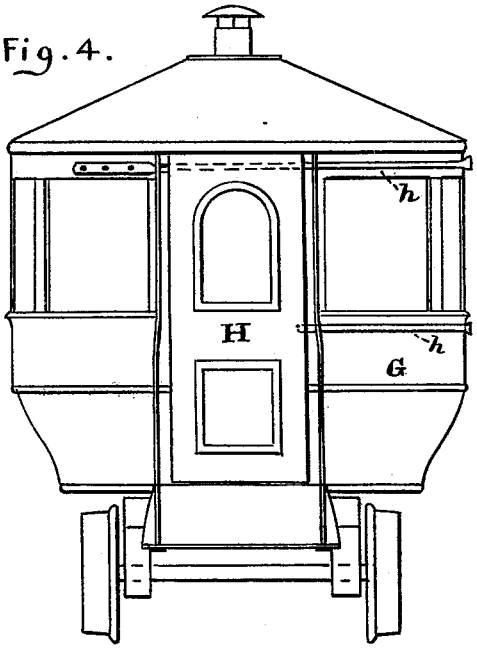


Fig. 5.

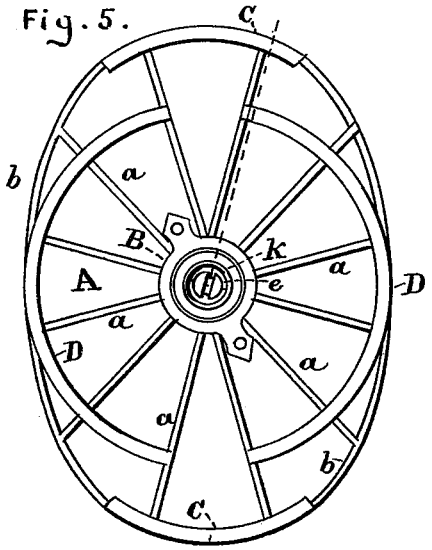
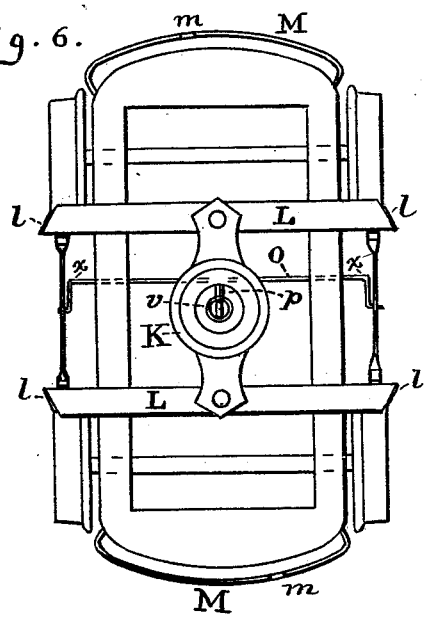


Fig. 6.



Witnesses:
G. B. Fowles
W. Burris

Inventor:
David A. Foster
By Theodor Mungen
Attorney.

UNITED STATES PATENT OFFICE.

DAVID A. FOSTER, OF RICHMOND, INDIANA.

IMPROVEMENT IN STREET-CARS.

Specification forming part of Letters Patent No. **185,857**, dated January 2, 1877; application filed November 6, 1876.

To all whom it may concern:

Be it known that I, DAVID A. FOSTER, of Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Railway and Street Cars; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, in which said drawing—

Figure 1 is a side view of my improved car. Fig. 2 is a plan illustrating the construction of the roof. Fig. 3 represents a portion detached, showing the frame of the car-seat, &c. Fig. 4 is an end view of the car. Fig. 5 is a plan of the bottom of the body of the car. Fig. 6 is a plan view of the car-truck.

In the various figures of said drawing similar letters indicate like parts of the invention.

In my construction the body of the car is of an oval or elliptical shape, somewhat narrowed at the bottom, and with the roof inclined upward to the center, as shown, the several parts of the frame-work being formed and placed together so as to brace each other.

In the drawing referred to, A designates the bottom of the body of the car, a plan of the same being shown in Fig. 5, which is provided with cleats *a*, placed edgewise, secured to and radiating from the center piece B, the outward ends of said cleats being fastened to the band *b* at the outer edge. The bottom A has also fixed thereto the ways C, forming quarter circles, and placed one at each end, as shown, and the semicircular ways D, for the purposes hereinafter stated.

A continuous seat is constructed within the car in the following manner: The base-timber E, following the oval shape of the car, supports and has secured to it the uprights *c* and the curved braces *d*, the latter connecting with, and resting against, the side posts *f* at the lower extremities of said side posts. (See Fig. 3.) The horizontal pieces *g* extend from the upper ends of the uprights *c* to the side posts *f*, and join the same, being also supported by the braces *d*, as shown. The said side posts extend a little way below the horizontal pieces *g*, to receive the outer ends of braces *d*, the inner extremities of the latter bearing against the uprights *c*. The side posts *f* are of sufficient height for the purpose of passengers standing in the car, and their upper extremities are secured in position by a substantial band of suitable material. The window-casings and sash are constructed so that each sash is made straight without interfering with the elliptical shape of the car-body, as is shown. A covering formed of thin, narrow strips, of any suitable material, is placed along the braces *d*, on the outside thereof. If of wood, the strips are rabbeted on both edges, put together, and sealed and made tight with white lead, or any suitable substance. The guard-rail G, of wood or metal, is placed above the braces *d*, and extends around the car-body, to strengthen the same and form a protection in case of contact with passing vehicles or other obstructions. The body is sided up far enough above rail G to form pockets to receive the window-sash, having water-table or sash-rests formed at the top.

The seat is formed of small square pieces, laid on the seat-rails *g*, and ceiled in front from the rails *g* to the floor of the car in the same manner as the outside. The backs of the seats are formed of narrow strips, placed against the side posts *f*, on the inside thereof, and ceiled in the same manner. The car-door H slides on the curved rods *h*, to which the door is loosely coupled, the rods *h* being made fast to the body of the car, and the door being grooved on the inside to receive the rods *h*, on which it slides.

The frame of the roof is formed of a number of rafters, extending from tops of posts *f*, and inclining upward to a hollow center piece, I, to which the upper extremities are secured, the said rafters being somewhat extended at the front and rear of the roof, to form a hood, F, over each end of the car. The center piece I has a ventilator placed therein, and may also be used as a passage for a stove-pipe, a stove being placed within the car. A ventilator is also placed under each of the hoods F, for the admission of fresh air, which finds passage through the center piece I.

The ways C and D, fixed to the bottom of the car-body, support the same and form bearings on the truck when the car-body is turned to reverse its position, this being effected without changing the position of the truck. The

ways C, being fixed, one at each end of the car, with their extremities extending beyond the extremities of the semicircular ways D, as shown, are well adapted to the elongated and oval shape of the car, and the said ways C and D, in conjunction with center piece B, socket K, and guards *l*, serve to hold the car-body steady and greatly facilitate the operation of turning it, this being usually done by horses. The center piece B has a tubular projection, *k*, which, when the body of the car is on the truck, passes through the seat or socket K, fixed to the truck, thus forming a pivotal connection between the body of the car and the truck. This connection is secured by a pin or bolt passing through the tubular part *k*, the said bolt also serving to hold a pulley, *e*, within the tubular part. The bars L, fixed to the truck, are provided with the lips or guards *l* at their extremities, within which move the semicircular ways D as the body of the car is turned around. A rail, M, is rigidly attached to the truck at each end thereof, having a notch, *m*, formed at the center of the rail. A lever, N, is pivoted to the platform of the car, and is provided with an elbow, so that it passes in the notch *m*, where it is held by the spring *n*, and thus prevents the body of the car from turning when the car is running. The said lever N is, by a hand movement, raised from the notch *m*, when the car-body is turned around and, being brought by the movement to the opposite end of the truck, slides on the rail, and is sprung into the notch therein. A brake is constructed to operate a shoe against each wheel of the car in this wise. A rod, O, crosses the truck underneath the same, being coupled thereto. At or near the center the rod O is provided with a short arm, P, which holds a swivel-connection, *v*, with the chain P, which passes up in the tubular center piece B, over the pulley *e*, through an aperture, and along the bottom of the car to the brake-shaft R, provided with the crank *r*. The rod O is further constructed with elbows *x* near its extremities, which, by means of the rods *s* and *t*, connect with the shoes S, the latter being coupled to the bars L of the truck. Thus a movement of the rod O operates the shoes S on both sides of the car simultaneously, and the short arm *p*, being rigidly attached to rod O, and provided with the swivel *v*, connects with the chain P, and allows it to operate freely over the pulley *e*.

Having described my invention, I claim and desire to secure by Letters Patent—

1. In the car-body, the bottom provided with the center piece B and cleats *a*, radiating therefrom, and band *b*, as and for the purposes described.

2. The bottom of the car, provided with the center piece B and ways C and D, in combination with the truck-frame, provided with the socket K and guards *l*, as and for the purposes set forth.

3. The upright pieces *c*, curved braces *d*, and pieces *g*, forming the frame of the car-seat, and the ceiled covering of same, as shown, in combination with the base-timber E and side posts *f*, as and for the purposes specified.

4. The car-roof supported by radial bars connecting with the hollow center piece I, and supported by side posts *f*, as shown, for the purposes set forth.

In testimony that I claim the foregoing as above described I have hereunto set my hand and seal this 25th day of October, 1876.

D. A. FOSTER. [L. S.]

Witnesses:
WILLIAM ALLEN,
LEWIS D. STUBBS.