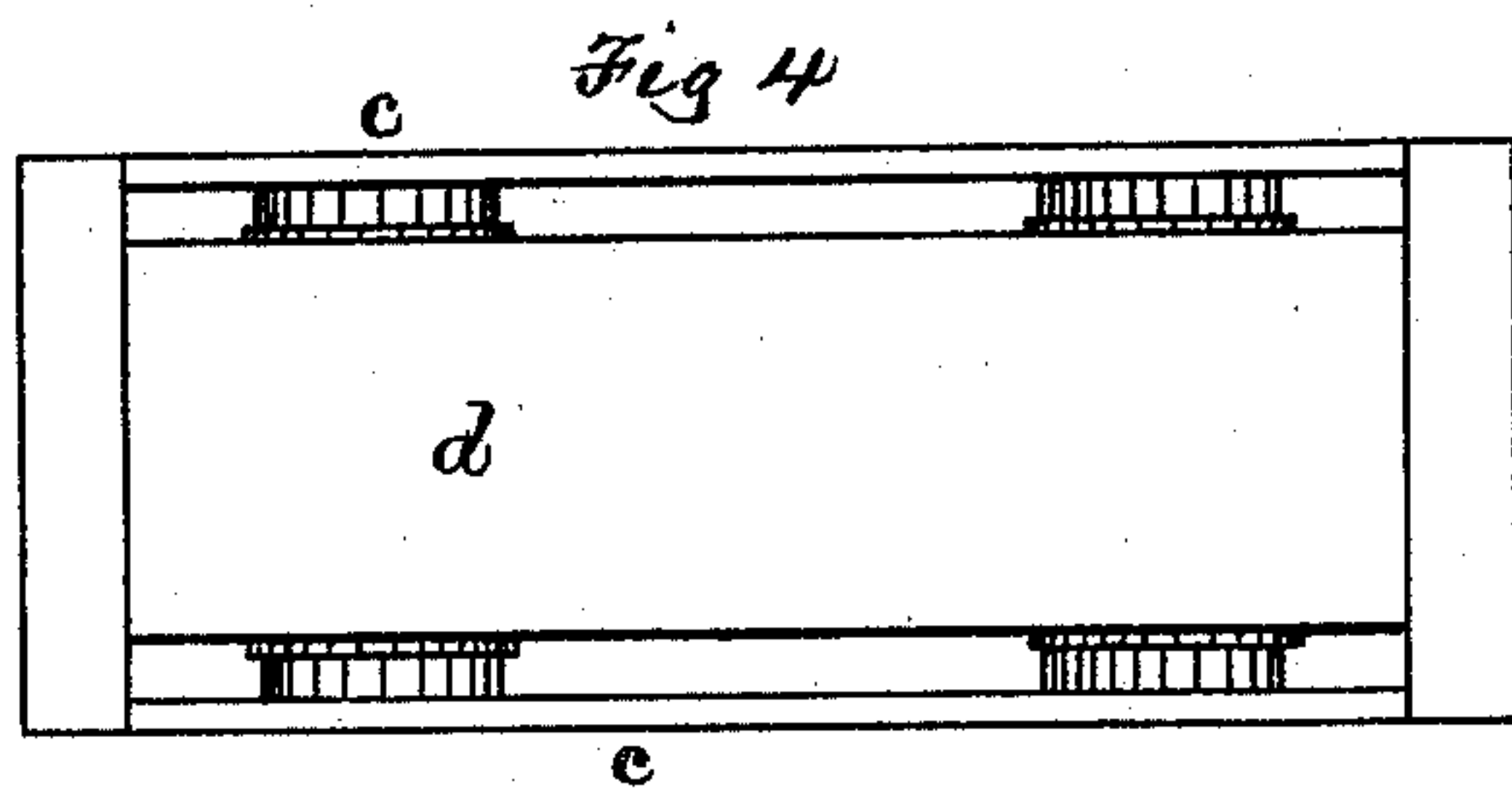
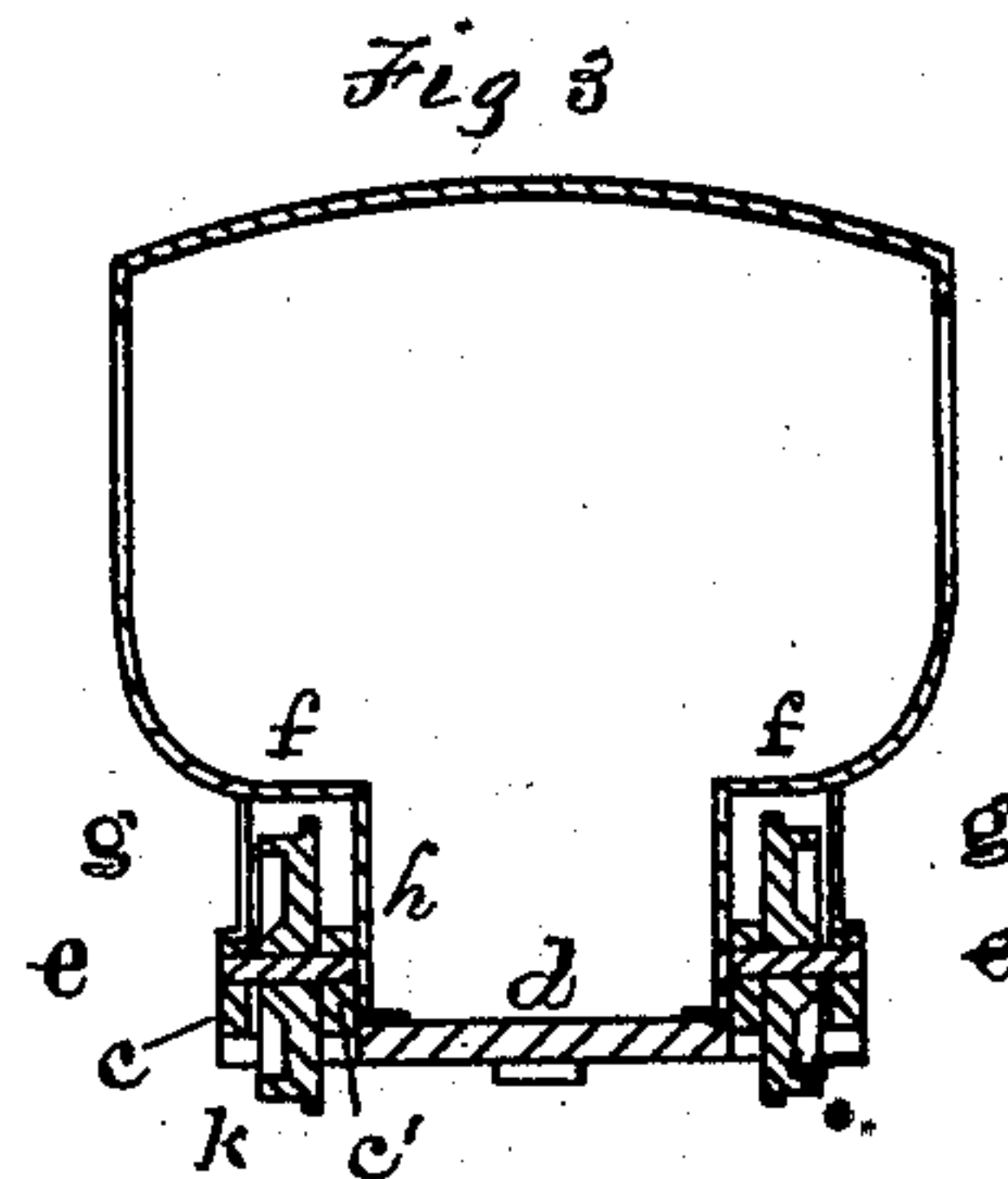
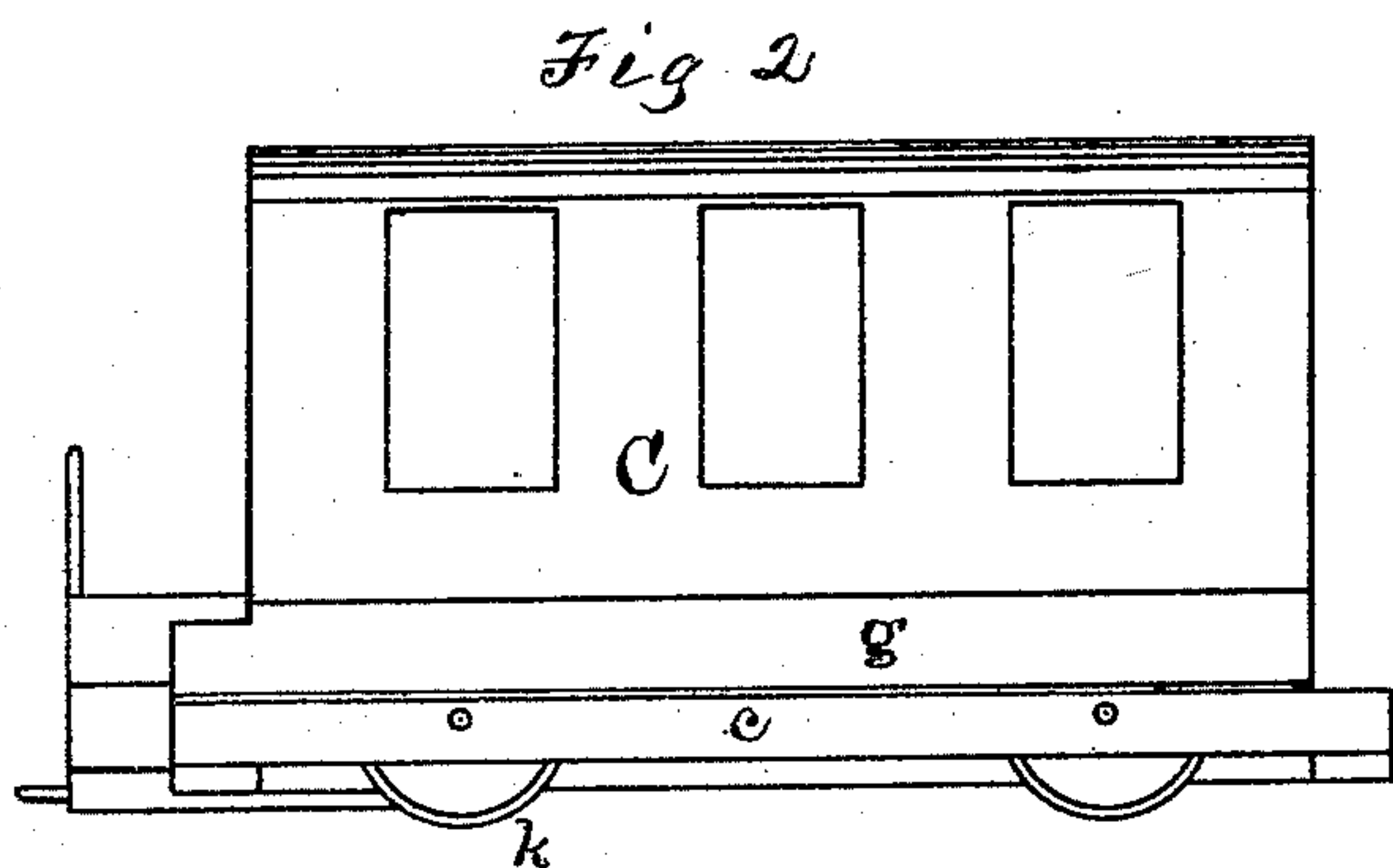
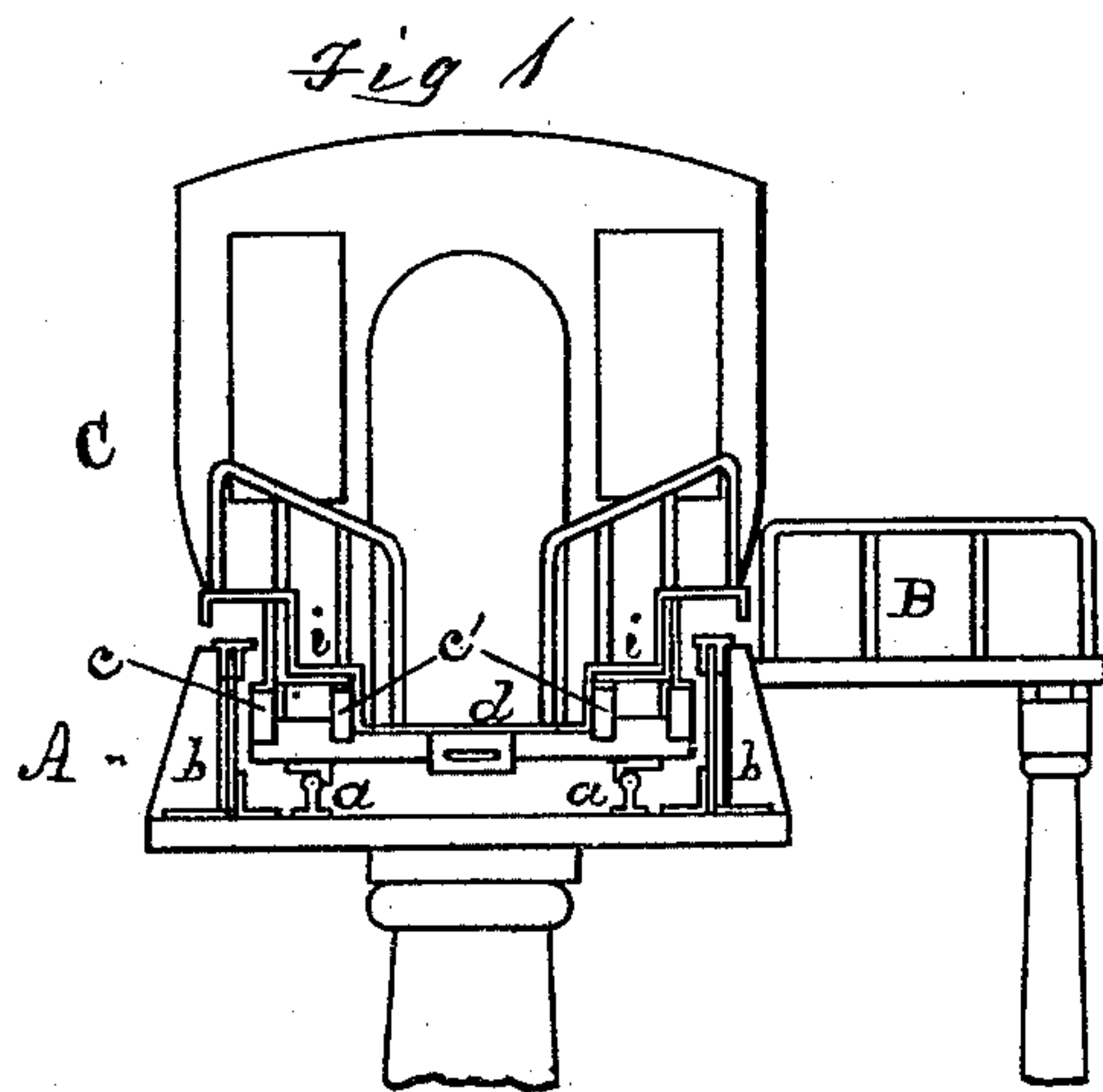


**J. M. HANNAHS.**  
**Elevated Railway-Cars.**

No. 156,023.

Patented Oct. 20, 1874.



Witnesses  
 James P. Dane  
 O. W. Bond

Inventor.  
 James M. Hannahs.  
 By Wm. & Bond.  
 His Atty's.

# UNITED STATES PATENT OFFICE.

JAMES M. HANNAHS, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN ELEVATED-RAILWAY CARS.

Specification forming part of Letters Patent No. **156,023**, dated October 20, 1874; application filed August 11, 1874.

*To all whom it may concern:*

Be it known that I, JAMES M. HANNAHS, of the city of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Railway-Cars for Elevated Railways, of which the following is a full description, reference being had to the accompanying drawings.

Figure 1 is an end elevation; Fig. 2, a side elevation; Fig. 3, a vertical section on line of Fig. 2; Fig. 4, a bottom view.

In Fig. 1 the car is shown in position on an elevated railway. In the other figures the railway is not shown.

I have heretofore obtained a patent for an elevated railway having protecting sides, to aid in preventing the cars from getting off the track.

The chief object of this invention is to so construct cars designed to be used upon an elevated railway that the liability to get off the track will be diminished; and this I accomplish by bringing the bottom of the car down near to the track, and by so forming the lower portion of the body of the car that it will be between the guards upon the sides of the railway, as more fully hereinafter described.

In the drawings, A represents an elevated railway; B, a platform by the side of the track for passengers; *a*, rails of the railway; *b*, guards, one on each side of the track; C, the body of the car, which is supported on a suitable frame; *c c'*, longitudinal bars, two on each side, forming a part of the frame. *d* is the bottom of the car, located near the track, and below the axles. *e* are the axles. As shown, they are short, and are supported in the side bars *c c'*, and do not extend through the car. *f f* are seats, beneath which are the wheels. The sides of the car are extended down to the outer bars *c*, as shown at *g*, covering the wheels on the outside. The space between the front of the seat and floor is filled by *h*, the wheels being between *g* and *h*. *i* are the steps for passengers. *k* are the wheels.

By this construction the load is brought

very near to the track, and the car will be less likely to leave the track than if made in the usual way, even though the side guards are not used; and when these guards are used, even if the car should leave the track, it could not be precipitated to the ground, since the side of the car would come in contact with the guards, and, the weight being so low, the car could not go over.

If it should be deemed necessary or advisable to have long axles, as usual, they can be so made, extending through the car, and being suitably boxed in or covered.

Suitable springs and brakes can be used with this car, as is customary, and suitable bearings can be provided for the axles.

The width of the lower part of the car is to be a little less than the distance between the two guards, so that the car can have the usual side movement without coming in contact with the guards; and the shape of this part of the car conforms substantially to that of the place where it is to be used.

There is danger attending the use of elevated railways as they were formerly constructed, since the cars were likely to be thrown from the track to the ground in case an axle should break, or if from any other cause the wheels should leave the track. This danger cannot exist if my improved car be used in connection with the side guards.

What I claim as new is as follows:

1. In elevated-railway cars, the combination of a car-body having bottom *d* of reduced size, and the axles journaled above the bottom of the car, adapting the bottom to run between the guards and near the track, as and for the purpose set forth.

2. In elevated-railway cars, the combination of a car-body with bottom *d* of reduced size, longitudinal bars *c* and *c'*, and axles *e*, journaled in the side bars above the bottom of the car, substantially as and for the purpose specified.

JAMES M. HANNAHS.

Witnesses:

E. A. WEST,  
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