

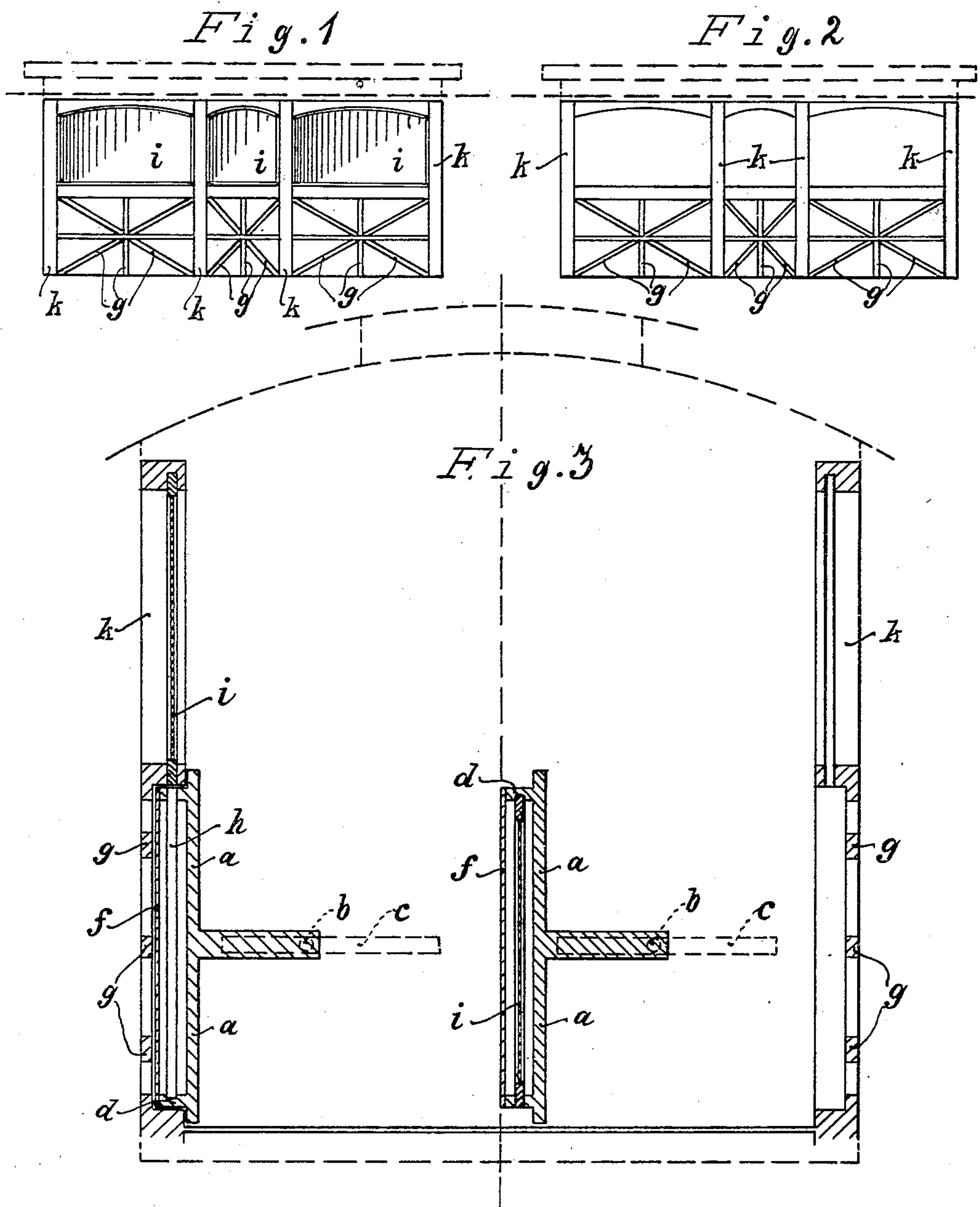
No. 704,067.

Patented July 8, 1902.

A. MAURER.
TRAMWAY CAR.

(Application filed Mar. 3, 1902.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLF MAURER, OF EHRENFELD, NEAR COLOGNE, GERMANY.

TRAMWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 704,067, dated July 8, 1902.

Application filed March 3, 1902. Serial No. 96,569. (No model.)

To all whom it may concern:

Be it known that I, ADOLF MAURER, a subject of the King of Prussia, German Emperor, residing at Ehrenfeld, near Cologne-on-the Rhine, in the Province of the Rhine, Kingdom of Prussia, German Empire, have invented new and useful Improvements in Tramway-Cars, of which the following is a specification.

It is already known how to construct tramway-cars so that they can be used as closed winter-cars or open summer-cars, according to requirements.

The object of the present invention is to provide a tramway-car of this kind as simple as possible in structure, such measures being taken that after the conversion of the winter-car into an open summer-car a railing or balustrade remains to prevent persons from falling out. The arrangement applies to those cars which have their benches arranged longitudinally and which are entered at the two ends.

In the drawings, Figure 1 shows one side of the winter-car, and Fig. 2 one side of the summer-car. Fig. 3 is a cross-section through the car, the left-hand side showing the position of the several parts for the winter-car and the right-hand side the position of those parts for the summer-car.

In all the figures only those parts essential to the invention are shown, everything else being omitted for the sake of clearness.

With regard to the position of the several parts in the winter-car, Fig. 1 and left-hand side of Fig. 3, the following is to be observed: The benches *a* are arranged, as is customary in winter-cars, with their backs against the side walls. These benches *a* are, as can be seen from Fig. 3, made double—that is to say, they have not only seats and backs directed upward, but have also exactly symmetrically-arranged seats and backs directed downward. At the ends of the seats of the benches pivots *b* (indicated by dotted lines) are arranged, which rest in the slots *c*. Such slots *c* are of course provided for each bench at each end wall of the car, and for each slot there is a pivot *b*. The backs of the benches are developed into frames *d* on their outer sides, to which frames the wall-plates *f* of the lower half of the side walls of the car are rigidly fastened. The frames *d* project into corre-

sponding recesses of the under parts of the side walls. The stays *g*, which in tramway-cars usually lie inside behind the plates *f*, being thus invisible, are in the present mode of construction placed outside, so that they remain visible from the side also in the case of the winter-car. Grooves *h* are let into the frame *d*, into which grooves the window *i* can be lowered. In the winter-car, however, the windows are in the raised position.

The process for converting a winter-car into a summer-car, Fig. 2 and right-hand half of Fig. 3, is as follows: First all the windows *i* are lowered into the grooves *h* of the frames *d*. The benches *a* are next drawn inward somewhat to release them from the walls of the car and are then simply turned over. Care must be taken that the benches take up the position shown on the right-hand side of Fig. 3—i. e., that the plates *f* come to lie exactly in the middle. The two benches back each other with these plates *f*, and seats and backs are again present in both directions, the said benches being now, however, no longer at the sides, but in the middle of the car. Of course the lower halves of the benches are now uppermost; but as both halves are of entirely uniform construction the desired effect is nevertheless attained. The windows *i* and the wall-plates *f* lie invisible between the backs of the benches. It must of course be borne in mind that fastenings must be arranged for the benches in their different positions, and, if necessary, also for the windows. These fastenings can be of any desired construction and are not included in the subject of the present invention.

The stays *g* remain on the lower halves of the side walls and serve as a railing or balustrade. Moreover, in the summer-cars the posts *k* naturally still remain; otherwise, however, the sides are quite open.

In converting a summer-car into a winter-car the process is obviously reversed. The slots *c* are sufficiently long to permit of the benches being pushed to and-fro under all circumstances, so that they can be conveniently turned over.

What I claim as my invention, and desire to secure by Letters Patent of the United States of America, is—

1. Benches for tramway-cars having seats

and backs directed not only upward but also exactly symmetrically-arranged seats and backs directed downward, and pivots provided at the ends of the benches respectively which pivots are connected with the end walls of the car, as and for the purpose set forth.

2. In tramway-cars the combination with the end walls of the car, having horizontal slots *c* arranged in such end walls of benches *a*, having seats and backs directed not only upward but also exactly symmetrically-arranged seats and backs directed downward and pivots *b* attached to the ends of the benches, respectively, which pivots rest in the said slots *c*, as and for the purpose set forth.

3. In tramway-cars the combination with the end walls and the side walls having recesses at their under parts of benches having seats and backs directed not only upward but also exactly symmetrically-arranged seats and backs directed downward, pivots provided at the ends of the benches and turnably attached to the end walls, respectively, frames *d* forming part of the backs of the benches and projecting into the said recesses of the side walls, the plates *f* of the latter be-

ing rigidly fastened to such frames, and stays *g* placed outside of the plates *f*, as and for the purpose set forth.

4. In tramway-cars the combination with the end walls and the side walls having recesses at their inner parts of benches having seats and backs directed not only upward but also exactly symmetrically-arranged seats and backs directed downward, pivots provided at the ends of the benches and turnably attached to the end walls, respectively, frames *d* forming part of the backs of the benches and projecting into the said recesses of the side walls, the plates *f* of the latter being rigidly fastened to such frames, grooves *h* let into the frames *d*, windows *i* movably arranged in the upper part of the side walls and adapted to be lowered into said grooves *h*, and stays *g* placed outside of the plates *f*, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLF MAURER.

Witnesses:

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