

No. 647,927.

Patented Apr. 17, 1900.

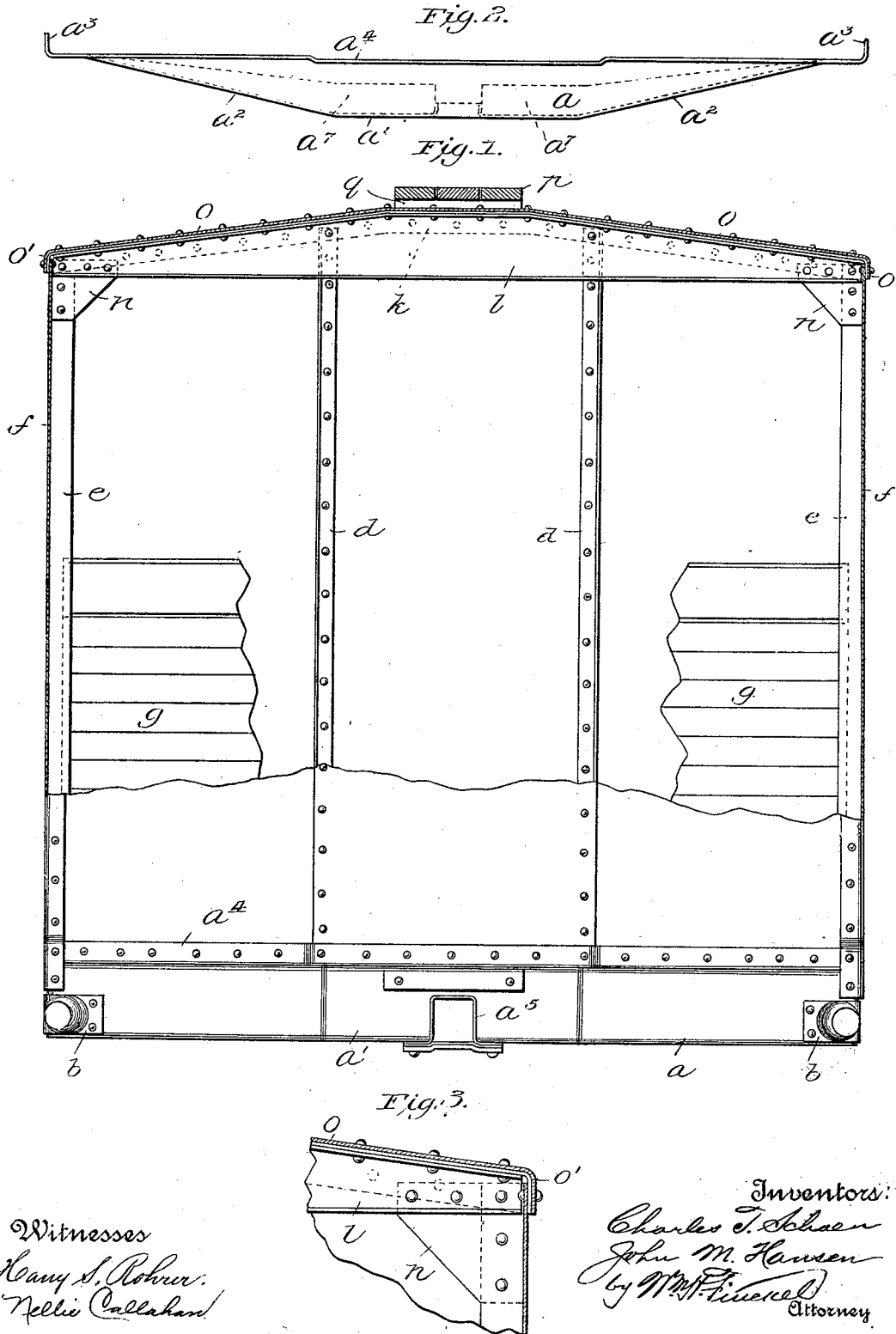
C. T. SCHOEN & J. M. HANSEN.

METALLIC CAR.

(No Model.)

Application filed Nov. 9, 1899.)

3 Sheets—Sheet 1.



Witnesses
Harry S. Rohrer.
Nellie Callahan.

Inventors:
Charles T. Schoen
John M. Hansen
by W. M. F. Finner
Attorney

No. 647,927.

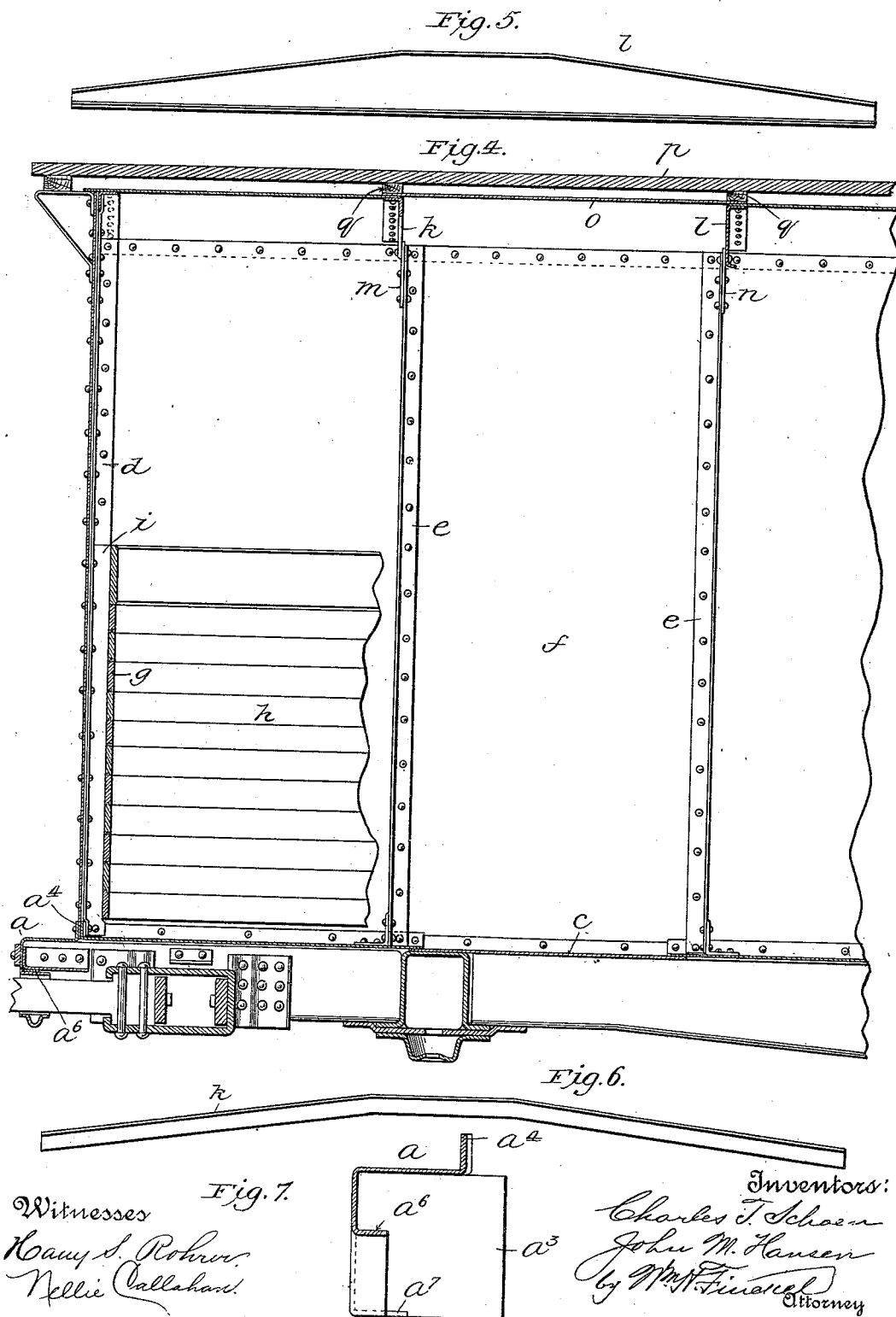
Patented Apr. 17, 1900.

C. T. SCHOEN & J. M. HANSEN.
METALLIC CAR.

(No Model.)

(Application filed Nov. 9, 1899.)

3 Sheets—Sheet 2.



No. 647,927.

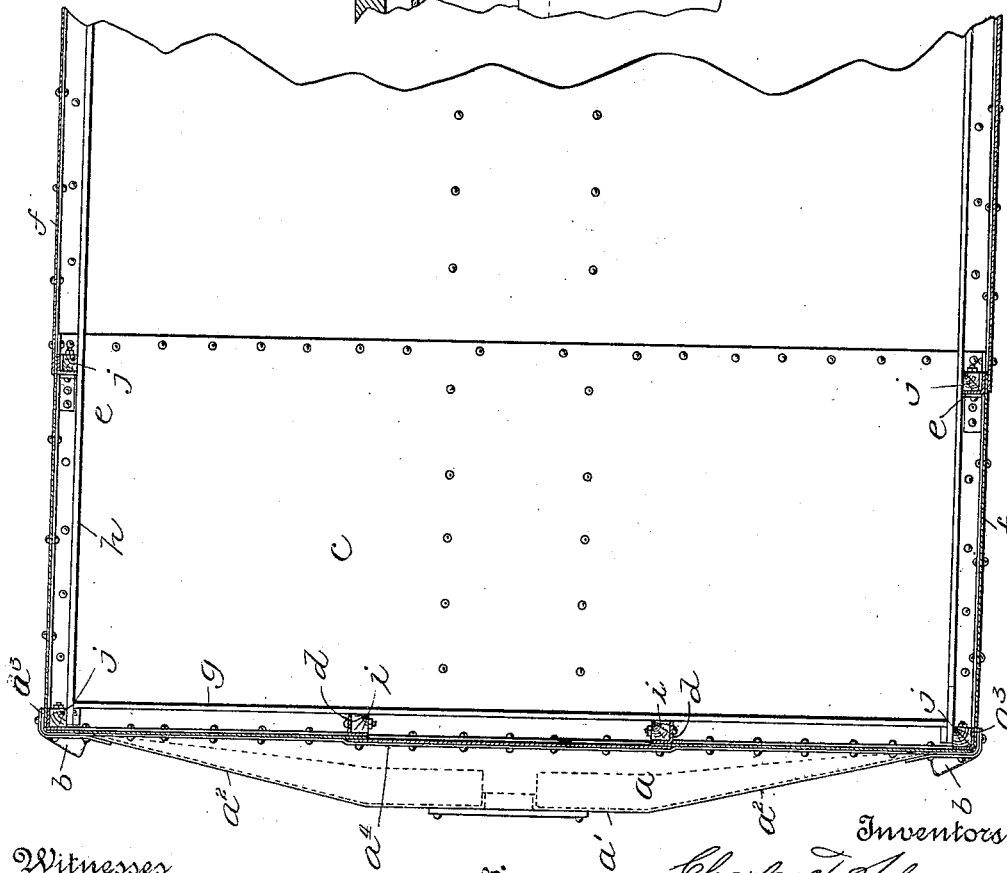
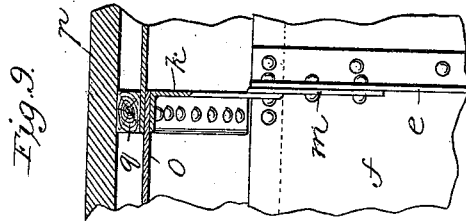
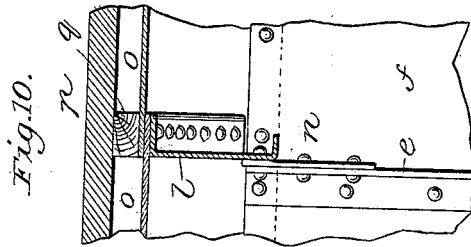
Patented Apr. 17, 1900.

C. T. SCHOEN & J. M. HANSEN.
METALLIC CAR.

(No Model.)

(Application filed Nov. 9, 1899.)

3 Sheets—Sheet 3.



Witnesses
Harry S. Rohrer
Nellie Callahan

Fig. 8.

Inventors:
Charles T. Schoen
John M. Hansen
by W. H. F. Linnell Attorney

UNITED STATES PATENT OFFICE.

CHARLES T. SCHOEN, OF PHILADELPHIA, AND JOHN M. HANSEN, OF BELLEVUE, PENNSYLVANIA, ASSIGNORS TO THE PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA.

METALLIC CAR.

SPECIFICATION forming part of Letters Patent No. 647,927, dated April 17, 1900.

Application filed November 9, 1899. Serial No. 736,362. (No model.)

To all whom it may concern:

Be it known that we, CHARLES T. SCHOEN, residing at Philadelphia, in the county of Philadelphia, and JOHN M. HANSEN, residing at Bellevue, in the county of Allegheny, State of Pennsylvania, citizens of the United States, have invented a certain new and useful Improvement in Metallic Cars, of which the following is a full, clear, and exact description.

This invention relates to the construction primarily of box-cars, and in which the underframe, including the end sills, and the body, including the roof, are formed of plates of metal, preferably steel, pressed or bent to shape. We do not limit our invention, however, to the use of its parts in all-metal cars.

In those cars in which is used an extension coupling-link in a substantially-straight end sill there is constant liability of uncoupling in passing around sharp curves in the road. One object of our invention is to avoid this difficulty, and we attain said object by employing an end sill having the greatest projection at the center, where is located the coupling or draw-bar, and tapering to nothing at each end—that is to say, at opposite sides of the car.

In the use of metallic roofs for cars it is difficult to make the joint of the roof-plates rain-tight; and another object of our invention is to construct a metallic car-body in a practically rain-tight manner. This object we attain by providing posts, to which the sides are fastened, and connecting these posts at the top by single-flange and double-flange carlines, preferably alternately arranged, and which support overlapped roof-plates, the ends of the roof-plates being overlapped upon the outside of the sides of the car.

In the accompanying drawings, illustrating our invention, in the several views of which like parts are similarly designated, Figure 1 is an end elevation with the upper portion of the body in vertical section. Fig. 2 is a plan view of the end sill detached. Fig. 3 is an enlarged cross-section of the roof-corner of one side of the car. Fig. 4 is a longitudinal section of one end of the car. Fig. 5 is a side elevation of the double-flange carline. Fig.

6 is a similar view of the single-flange carline. Fig. 7 is an enlarged central cross-section of the end sill. Fig. 8 is a horizontal section of one end of the car, taken just above the vertical flange of the end sill. Fig. 9 is an enlarged longitudinal vertical section showing more in detail the single-flange carline, and Fig. 10 is a similar view showing the double-flange carline.

The underframe may be of any approved construction, excepting that its end sills *a* are made of greatest cross-sectional width at their center *a'*, where the draw-bar is arranged, and taper thence, as at *a'' a''*, laterally and run out to nothing at their ends at the sides of the car and provided at such ends with the rearwardly-extending flanges *a'''* to overlap the sides of the underframe or side sills. The top portion of this sill is solid and is provided with a vertical flange *a''''*, which is riveted to the end of the car, and the face of the sill is made with an opening *a'''''* to receive the draw-bar, and the metal of this opening is turned back inwardly, as at *a''''''*, and the bottom flange *a'''''''* is provided on opposite sides of this opening and running out to nothing laterally of the car. The end sill thus described may be formed of a single piece of sheet or plate metal, preferably steel, pressed to shape. The end sill is adapted to receive the push-pole corner-plates *b*.

An end sill constructed in the manner described—that is to say, with the central projection and the disappearing or tapered sides—is especially adapted for use in connection with extension-link couplings and to prevent uncoupling in turning sharp curves, inasmuch as the ends of the adjacent cars have a longer radius of movement before coming into contact than is possible where the end sills are straight across their faces.

The floor *c* of the car may be composed of metal plates suitably secured to the under frame, and above these plates are erected the posts *d e*, to which the side plates *f*, of metal, are secured, with their meeting ends overlapped. If for any reason a wooden lining be desired, the boards *g h* of such lining are secured to wooden posts *i j*, fitted to the metal

posts *d e*, respectively. These metal posts *d e* may be sections of L shape for strength and lightness.

The car is provided with single-flange carlines *k* and double-flange carlines *l*, the former being bent to the cross-sectional contour or profile of the roof and secured at their ends to the posts through the intervention of gusset-plates *m* and the latter having their upper flanged surfaces formed to the cross-sectional contour or profile of the roof and their lower flanges made as chords and secured at their ends to the posts, also through the intervention of gusset-plates *n*, and these carlines *k* and *l* may be secured in alternation throughout the car-body.

The roof is composed of plates *o* of metal, having their meeting ends overlapped over and secured upon the several carlines. The roof-plates have their ends, at the sides of the car, flanged downwardly at *o'*, Fig. 3, to overlap the top edges of the sides of the car. This overlapping of the roof-plates at their meeting ends and over the carlines, to which they are secured, and at their ends over the sides of the car, where they are also riveted, insures a rain-tight construction. If desired, any suitable waterproof or other packing may be interposed at these points.

The use of the double-flange carlines *l*, which are practically trussed arches, greatly increases the strength and stiffness of the sides and roof.

The running-board *p* and its supporting cross-pieces *q* may be of any approved construction.

The parts shown but not described may be of any approved or usual construction.

What we claim is—

1. A pressed-steel end sill, for cars, having its vertical face provided with a central projection adapted to receive the draw-bar or coupling, and tapering thence to nothing at its ends next the sides of the car, a solid top having a vertical flange, and a bottom flange, substantially as described.

2. A pressed-steel end sill, having a central projection *a'*, tapered portions *a²*, end flanges *a³*, a solid top having a vertical flange, and a bottom flange, substantially as described.

3. In a car, the combination of side posts, a single-flange carline and a double-flange carline springing from said side posts and supporting the roof, the said double-flange carline having its upper flange of the contour of the roof and its lower flange a chord, substantially as described.

4. In a car, the combination of side posts, a single-flange carline bent to the contour or profile of the cross-section of the roof, and a double-flange carline having its upper flange conforming to the contour or profile of the cross-section of the roof and its lower flange made as a chord, and the roof secured to such carlines, substantially as described.

5. In a metallic car, the combination of metal posts, sides composed of metal plates secured to said posts, single-flange and double-flange carlines springing from said posts, metal roof-plates having their meeting ends overlapped and riveted to said carlines and having depending sides overlapped upon the sides of the car, substantially as described.

6. In a metallic car, the combination of metal posts, single-flange and double-flange metal carlines springing from said posts, and gusset-plates arranged at the juncture of the said carlines with the said posts, substantially as described.

7. A pressed-steel carline, having a flanged upper edge of the profile of the roof and a lower flanged chord, substantially as described.

In testimony whereof we have hereunto set our hands this 1st day of November, A. D. 1899.

CHARLES T. SCHOEN.
JOHN M. HANSEN.

Witnesses:

W. D. GEORGE,
C. E. POSTLETHWAITE.