C. E. DATH.

METALLIC END FRAME FOR CAR BODIES.

APPLICATION FILED APR. 17, 1908.

917,716.

Patented Apr. 6, 1909.

3 SHEETS—SHEET 1.

Fig. 1.

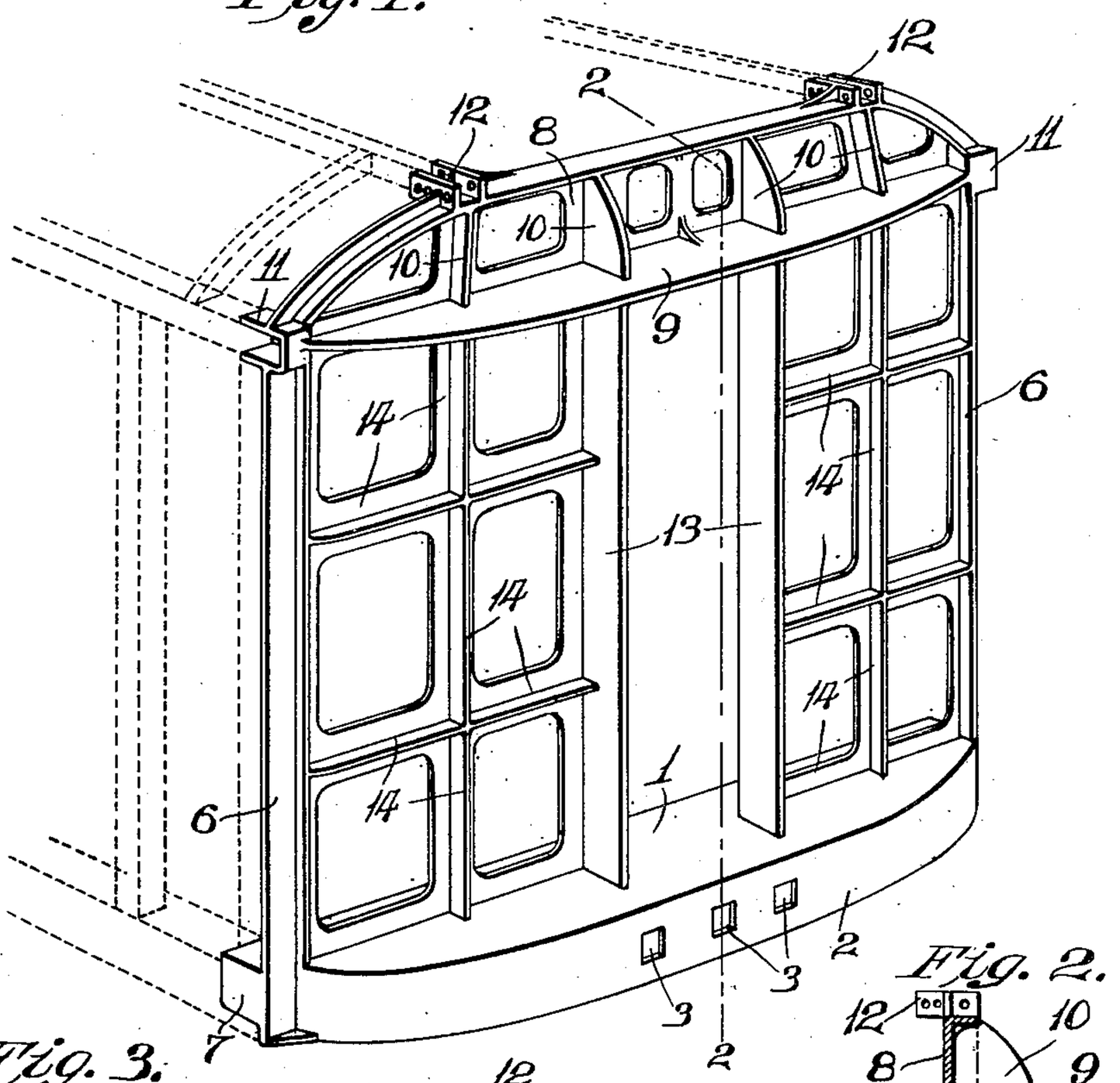


Fig. 3.

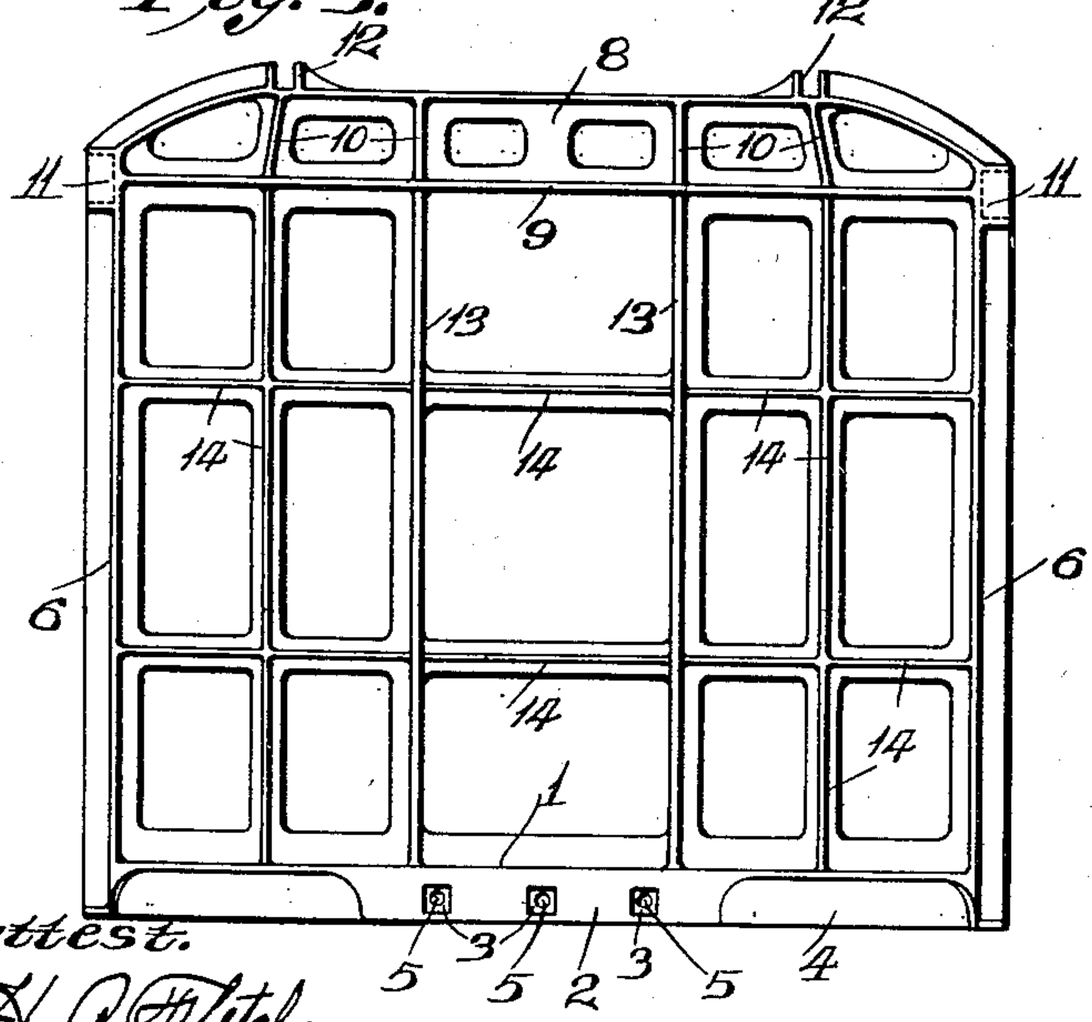
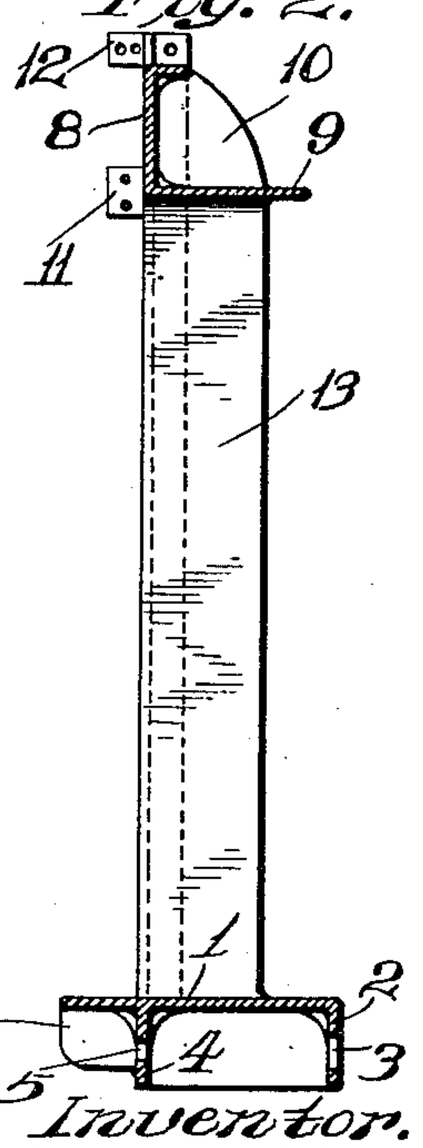


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 4.

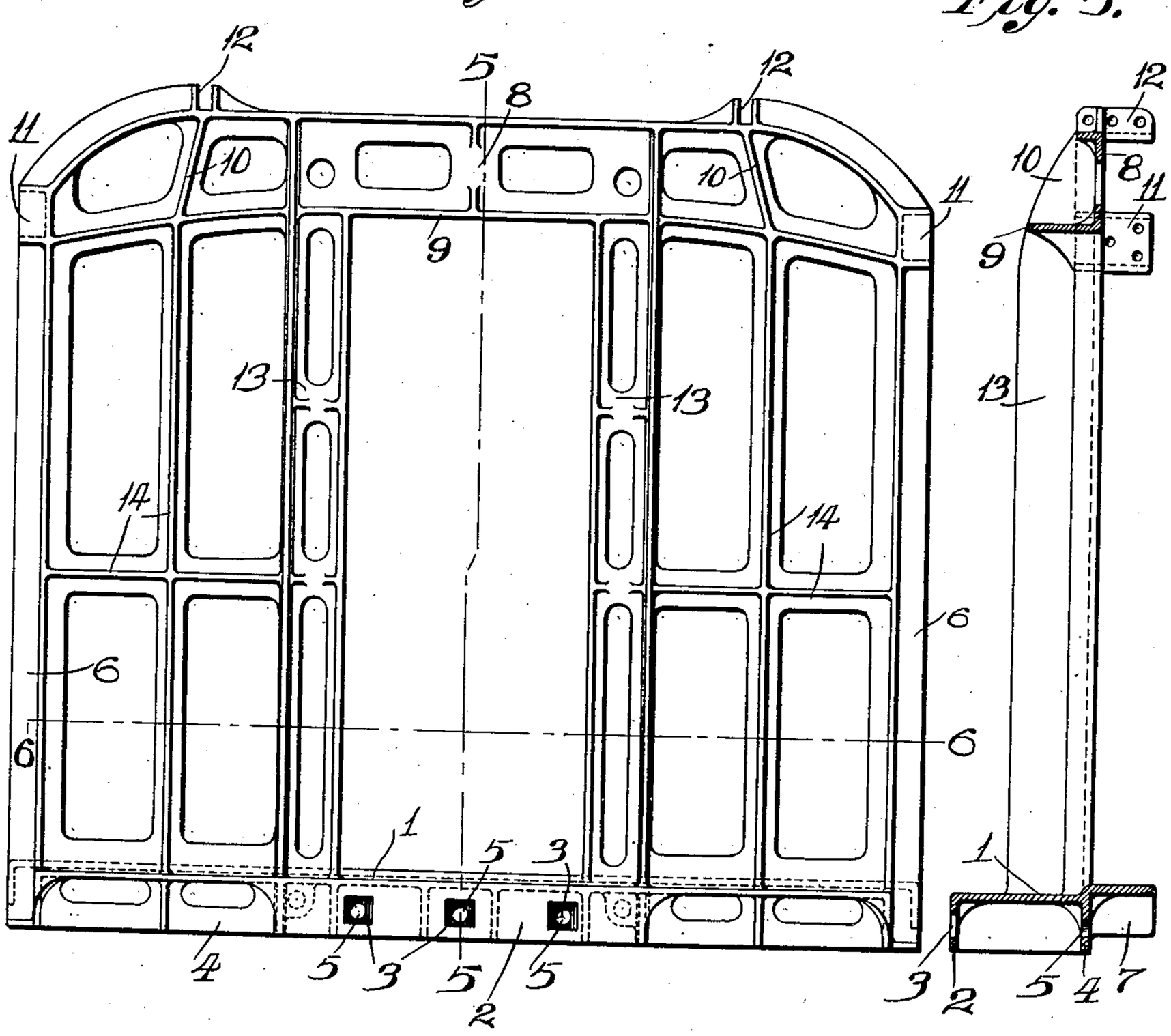
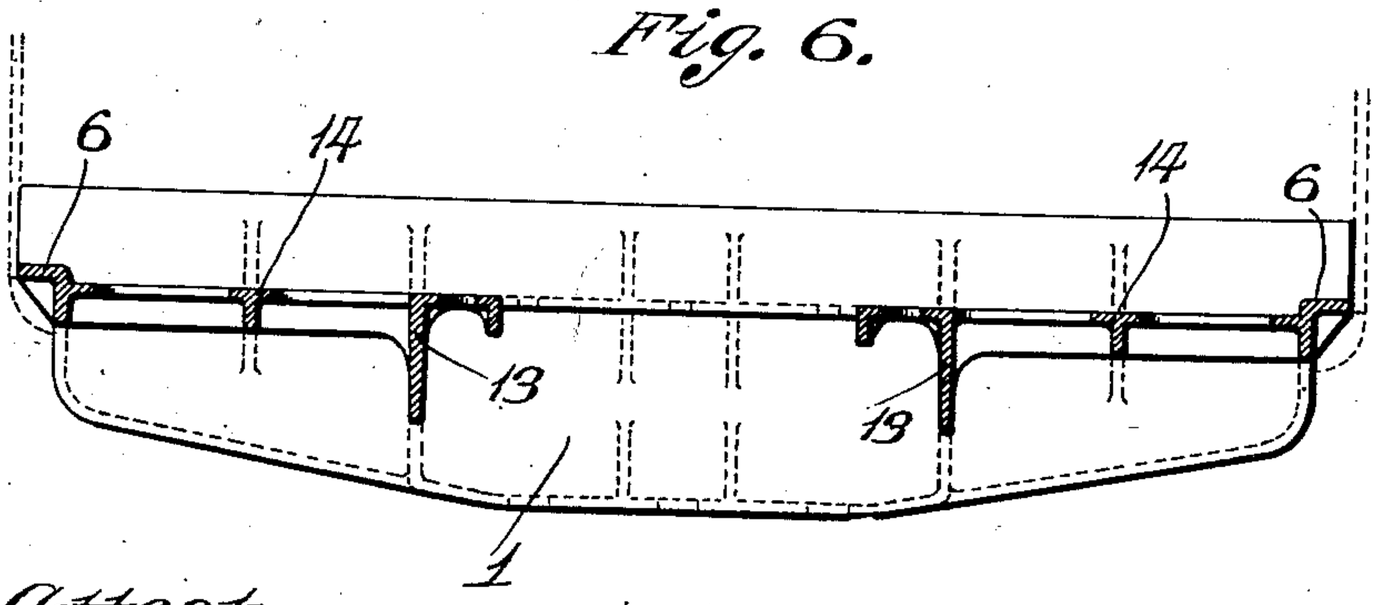


Fig. 5.

Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 8.

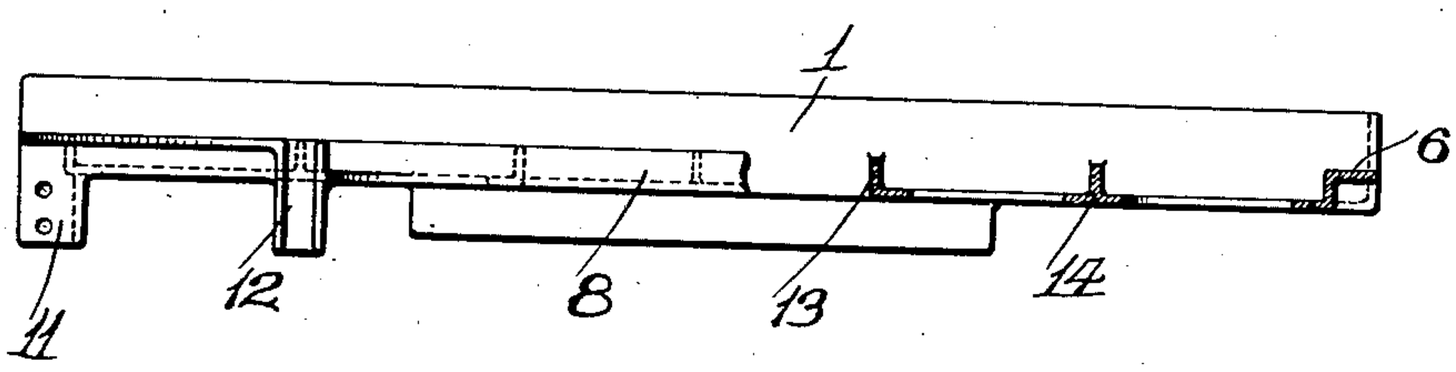


Fig. 7.

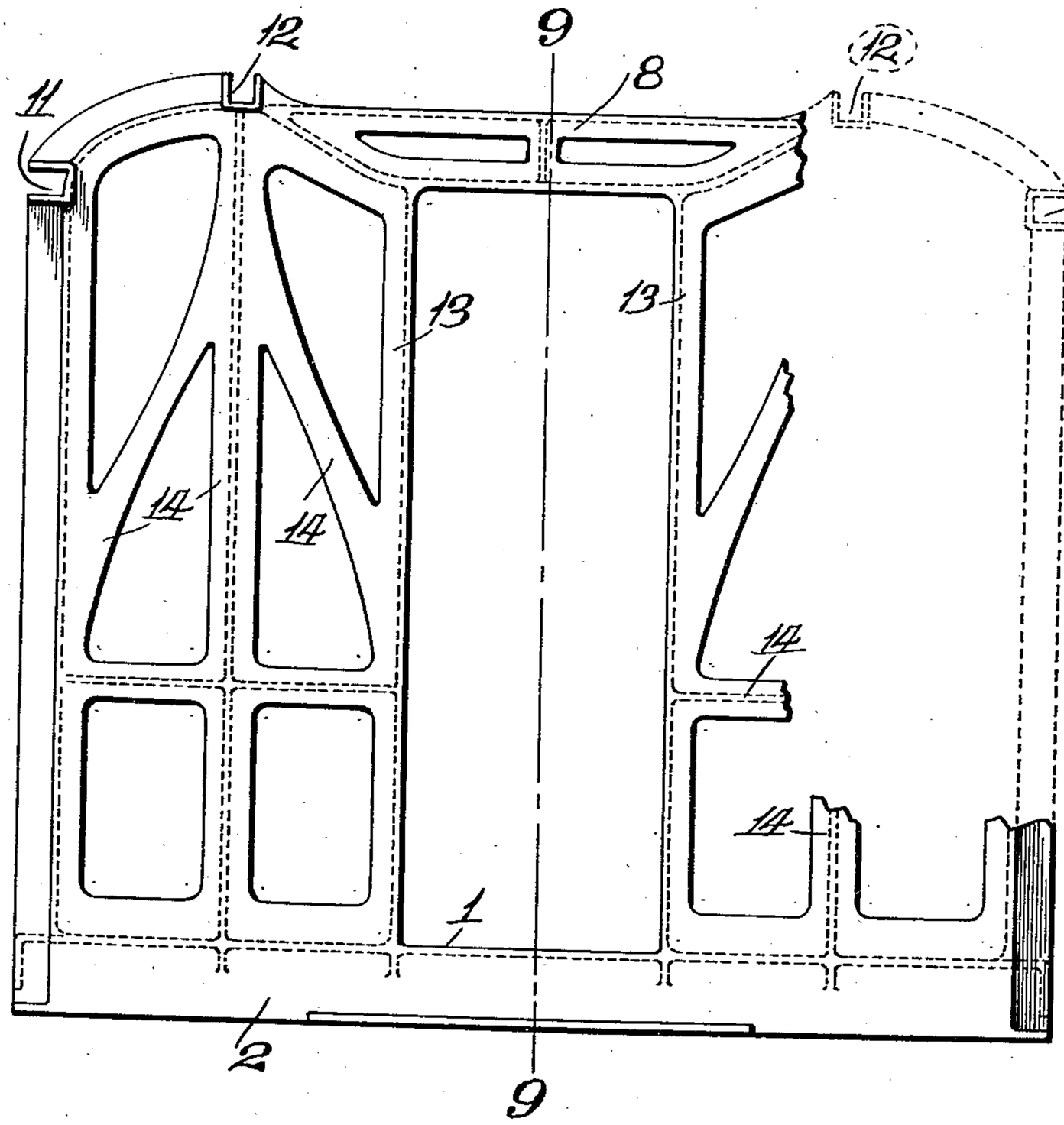
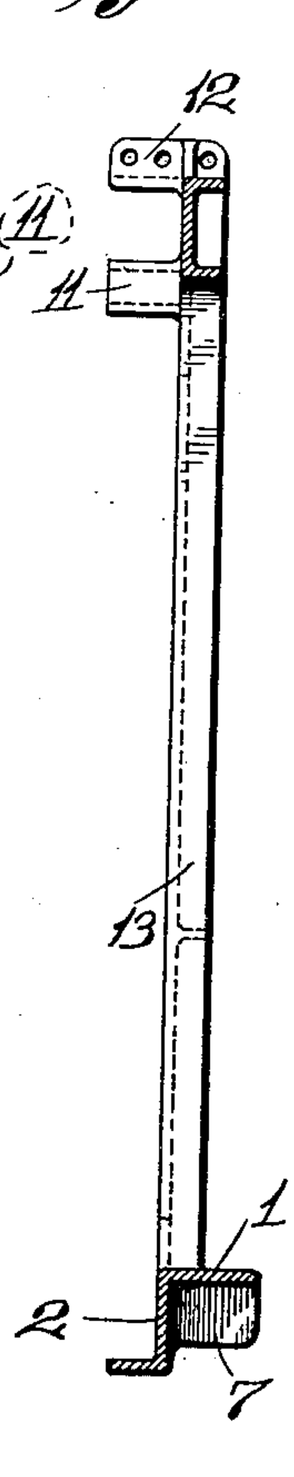


Fig. 9.



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UNITED STATES PATENT OFFICE.

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METALLIC END FRAME FOR CAR-BODIES.

No. 917,716. Specification of Letters Patent. Patented April 6, 1909.

Application filed April 17, 1908. Serial No. 427,645.

To all whom it may concern:

Be it known that I, CHARLES E. DATH, a citizen of the United States, and resident of Denver, Denver county, Colorado, have invented certain new and useful Improvements in Metallic End Frames for Car-Bodies, of which the following is a specification, containing a full, clear, and exact description, reference being had to the accompanying drawing, forming a part hereof.

My invention relates to a metallic end frame for car bodies, my object being to construct a rigid end frame, and which end frame is to be used in connection with a wooden or metallic car body, in order to greatly strengthen said body, and to uniformly and evenly distribute the stress or strain due to any impact or jar on the end of the car.

A further object of my invention is to construct a solid end frame with pockets which receive the side, center, and intermediate sills of the framework of the car body; and also the side plates and deck sills, thus providing great rigidity and strength at the ends of said sills, and tying the two sides of the car body in such a manner as to prevent them from spreading for any reason whatever.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of a solid metallic end frame as contemplated by my invention; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1; Fig. 3 is an elevation of a solid end frame constructed without a door opening; Fig. 4 is an elevation of a modified form of the end frame; Fig. 5 is a vertical section taken on the line 5—5 of Fig. 4; Fig. 6 is a horizontal section taken on the line 6—6 of Fig. 4; Fig. 7 is an elevation of a further modified form of the solid end frame; Fig. 8 is a plan view, partly in section, of the end frame seen in Fig. 7; Fig. 9 is a vertical section taken on the line 9—9 of Fig. 7.

In the construction of my improved end frame as shown, 1 designates a plate, the front edge of which is gradually rounded toward its ends; and formed integral with the front edge of said plate is a depending flange 2, in the center of which is formed a plurality of openings 3; and formed integral with the rear edge of this plate 1 is a depending flange 4, in which is formed a plurality of apertures 5. This plate and the flanges 2 and 4 perform the function of a buffer beam; and the space between the central portions of the flanges 2 and 4 may be occupied by the buffer springs, the stems of which pass through the coinciding pairs of apertures 3 and 5.

Formed integral with the ends of the plate 1 are vertically disposed posts or standards 6, which perform the function of corner posts for the car body; and formed integral with the lower ends of these posts or standards are sill pockets 7, which receive the ends of the sills of the car body. Formed integral with the upper ends of the posts or standards 6 is a vertically disposed member 8, which performs the function of an end plate for the car body; and formed integral with this end plate is a horizontally disposed web or flange 9, the ends of which are gradually rounded toward the posts or standards 9, which flange greatly strengthens the upper portion of the end frame. The end plate 8 is preferably made in skeleton form, and is strengthened by suitable webs and flanges 10; and formed at the ends of said end plate and at the upper ends of the posts or standards 6 are pockets 11, which are adapted to receive the side plates of the car body.

Formed integral with the top of the end plate, at points adjacent its ends, are pockets 12, adapted to receive the deck sills of the car body.

Formed integral with the top of the buffer beam and with the under side of the end plate 8, at points adjacent the centers of said beam and plate are vertically disposed posts or standards 13; and the space between said posts and standards provides a door opening through the center of the end frame; and extending between the corner posts or standards 6 and the posts or standards 13, and between the buffer beam and end plate are various strengthening webs and flanges 14, which are formed integral with one another and with the various parts just mentioned. All of the strengthening webs and flanges may be of any desired shape in cross section; for instance, in the shape of an angle bar, T, U, or Z-bar.

The end frame so constructed is applied to the end of the car body frame with the ends

of the sills bearing in the sill pockets 7 and being secured thereto, with the ends of the side plates seated in the pockets 11 and being secured thereto; and the ends of the deck sills being seated in the pockets 12 and secured thereto. The wooden door posts are positioned against the posts or standards 13; and the wooden corner posts are positioned against the posts or standards 6; and the inside and outside lining of wood or metal is applied to the end frame in any suitable manner so as to inclose the greater portion thereof and give the same a neat and finished appearance.

In Fig. 3 I have shown an end frame suitable for use on blind end cars, or cars without the usual door and window openings; and where such construction is made use of, strengthening webs or flanges extend across the door and window openings, and are formed integral with the posts or standards 13.

The forms of the end frames shown in Figs. 1 to 6, inclusive, are particularly adapted for mail and baggage cars; and it will be seen that the buffer beam and web or flange 9 project beyond the face of the body of the frame; whereas, in the construction shown in Figs. 7 to 9, inclusive, the end frame is particularly adapted for use for extended platform cars.

It is a well known fact that in nearly all collisions, the ends of the cars receive the greatest damage; and, in many cases said cars telescope one another; and it will be readily understood that by the use of a rigid solid metal end frame, as contemplated by my invention, the end of the car is greatly strengthened; and, therefore, will offer great resistance and consequent protection to the body portion of the car, and the occupants and contents thereof.

The impact or jar incident to the coupling of cars together is evenly distributed over the entire car frame by the use of end frames constructed as herein described, and said end frames are easily applied to the car bodies and greatly cheapen the car construction, owing to the fact that much time and labor incident to the building of car ends of ordinary construction is done away with.

In some instances, the end frame may be cast or formed in two or more sections, and which sections are rigidly fixed to one another by bolts or in any suitable manner.

I claim:—

1. As a new article of manufacture, a cast metal end frame for car bodies, which end frame is vertically positioned upon and rigidly fixed to the end of the car body.

2. As a new article of manufacture, a skeleton metallic end frame for car bodies constructed in a single piece, and adapted to be vertically disposed and rigidly fixed on the end of a car body.

3. The combination with a car body, of a vertically disposed metal end frame rigidly fixed to the end of said car body, and which end frame is formed in a single piece.

4. A metal end frame for car bodies, formed in a single piece and occupying a vertical position against the sills and plates of the car body so as to equalize and distribute to said sills and plates the force of any impact received by said end frame.

5. An end frame for car bodies, formed in a single piece and comprising a buffer beam, an end plate, and uprights connecting said buffer beam and end plate.

6. An end frame for car bodies, formed in a single piece and comprising a buffer beam, an end plate, uprights connecting said buffer beam and end plate, and strengthening webs between the uprights.

7. An end frame for car bodies, formed in a single piece and comprising a buffer beam, an end plate, uprights connecting said buffer beam and end plate, and pockets formed integral with the end frame for receiving the deck sills, side plates, and side sills.

8. A skeleton metal end frame for car bodies, rigidly fixed in a vertical position on the end of the car body, and provided with pockets for receiving parts of the car body construction.

9. As a new article of manufacture, a cast metal skeleton upright end frame for car bodies.

10. As a new article of manufacture, a cast metal skeleton upright end frame for car bodies, and strengthening ribs formed integral with said frame.

11. As a new article of manufacture, a cast metal upright end frame for car bodies, and strengthening ribs formed integral with said end frame.

12. As a new article of manufacture, a cast metal upright end frame for car bodies, provided with pockets for receiving parts of the car body construction.

13. As a new article of manufacture, a cast metal upright end frame for car bodies, provided with pockets for receiving parts of the car body construction, and strengthening ribs formed integral with said end frame.

14. As a new article of manufacture, a cast metal end frame for car bodies, in which is formed suitable door and window openings.

15. A cast metal end frame for cars, comprising a skeleton body portion, an end plate, and a buffer beam.

16. A solid end frame for car bodies, comprising a skeleton body portion, an end plate, and a buffer beam, which parts are rigidly fixed to one another.

17. An end frame for car bodies formed in a single piece and comprising a lower member, an upper member, and uprights connecting said members.

18. An end frame for car bodies formed in a single piece and comprising a lower member,

an upper member, uprights connecting said members, and strengthening webs between the uprights.

19. An end frame for car bodies formed in a single piece and comprising a lower member, an upper member, uprights connecting said members, and pockets formed integral with the end frames for receiving the deck sills, side plates and side sills.

20. A metallic end frame for a railroad car, comprising a horizontal bottom member extending across and adapted to bear against the end of the underframe, a horizontal top member extending across and adapted to bear against the ends of the side framing plates, upright members connecting the said horizontal members together, and means for fixing the end frame to the underframe and side framing plates, substantially as described.

21. A metallic end frame for a railroad car, comprising an end member arranged in vertical plane adapted to span the end of the car body and to bear against the ends of the underframe and longitudinal members of the said body, and means for fixing the end frame to the said body, substantially as described.

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

CHARLES E. DATH.

Witnesses:
M. P. SMITH,
EDWARD E. LONGAN.