

1,054,540.

Patented Feb. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

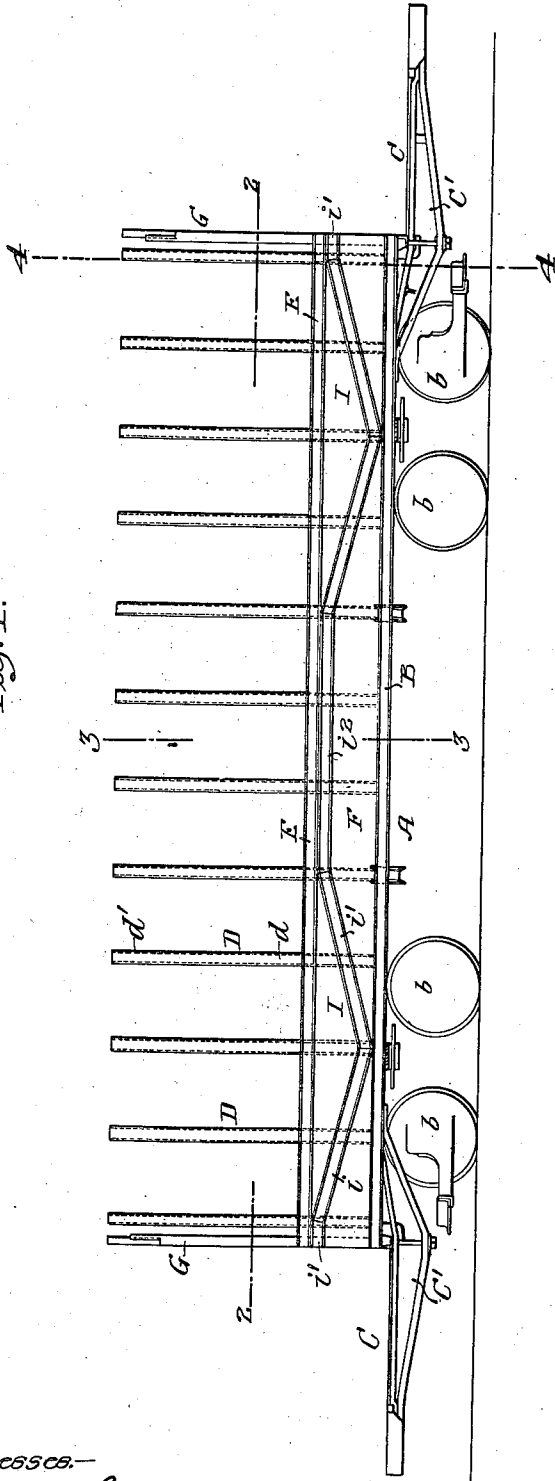
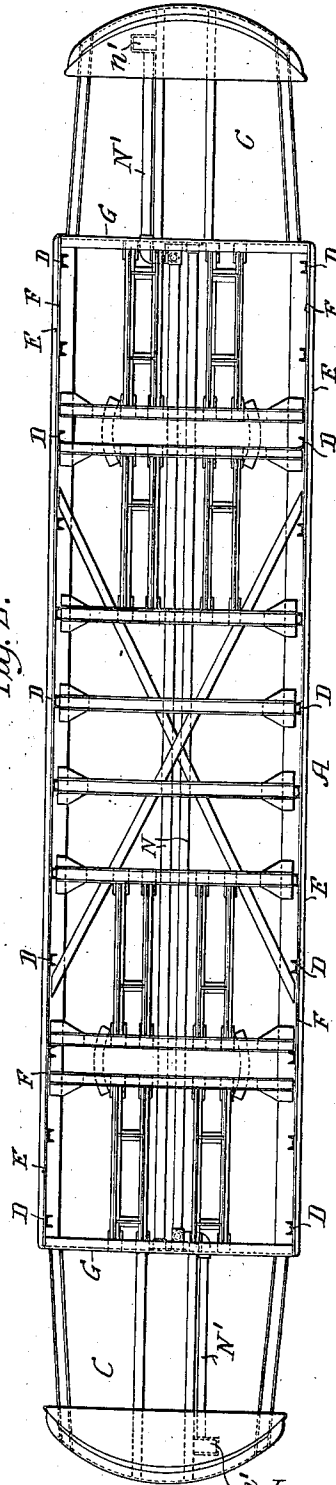


Fig. 2.



Witnesses—

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CAR CONSTRUCTION.
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2 SHEETS-SHEET 2.

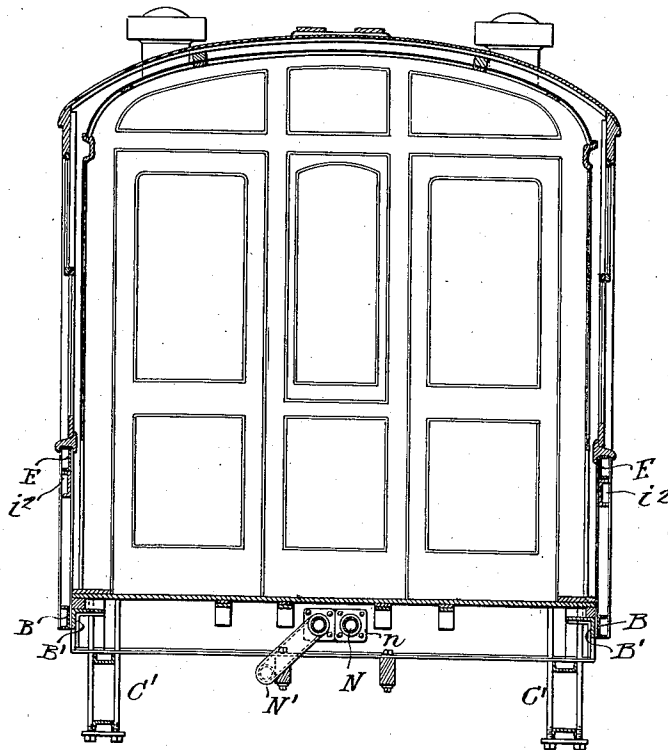


Fig. 4.

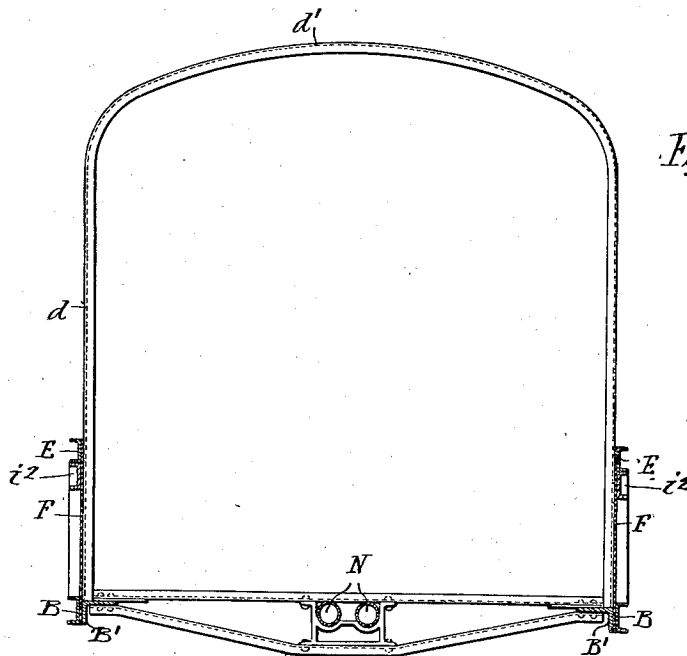


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY E. HADDOCK, OF CLEVELAND, OHIO, ASSIGNOR TO THE J. G. BRILL COMPANY,
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CAR CONSTRUCTION.

1,054,540.

Specification of Letters Patent.

Patented Feb. 25, 1913.

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To all whom it may concern:

Be it known that I, HENRY E. HADDOCK, a citizen of the United States, residing in Cleveland, Ohio, have invented certain Improvements in Car Construction, of which the following is a specification.

This invention relates to certain improvements in the construction of passenger cars used on city or inter-urban railways, although it will be understood that the invention can be applied to any type of car without departing from the essential features of the invention.

One object of the invention is to construct a car, of which the major portion is of metal and to so brace the car as to properly carry the weight and the platform load.

A further object of the invention is to utilize a part of the frame as a conduit for running electric cables.

In the accompanying drawings:—Figure 1, is an end elevation, showing the skeleton of a passenger car; Fig. 2, is a sectional plan view on the line 2—2, Fig. 1; Fig. 3, is a sectional view on the line 3—3, Fig. 1, drawn to an enlarged scale, and Fig. 4, is a transverse sectional view on the line 4—4, Fig. 1 of a completed car made in accordance with my invention.

A is the body of the car, mounted on suitable trucks, and having wheels *b—b*, shown in diagram in Fig. 1.

C is a platform at each end of the car and attached to the body structure by braces C'.

The frame of the car, in the present instance, is of steel and consists of two sills B, which extend the full length of the car body. A belt rail channel member E also extends the full length of the body portion and a series of bows D, forming posts *d* and rafters *d'*. These bows are preferably made in one piece and extend from one side of the car body to the other. Back of the channel members E is an angle sill member B'.

In order to properly support the body of the car and to carry the platform load, I provide at each side of the car a brace I, which extends in zig-zag form from the belt rail channel to the sill channel. This brace I is made in sections.

i—i are diagonal members.

i' are the short channel sections at each end of the car against which the channel members abut and *i''* is a central channel

member located directly under the belt rail channel and forms an abutment for the other channel members, thus making a very rigid construction.

F is the plate which extends the full length of the car and is secured to the sill channel and belt rail channel, as clearly shown in Fig. 3. Heretofore, this plate was made comparatively heavy and would sustain the platform load and the body of the car between the trucks, but in this instance the plates at each side of the car are made comparatively light as the load and strains are taken by the brace members; the plates simply acting as gussets to reinforce the channel braces. These channel braces may be made in sections as illustrated in Fig. 1, or they may be made in a continuous piece extending from end to end and bent into shape. The bow members D of the frame, as before remarked, are bent so as to form curved rafters to which the roof is secured, making a very stable structure. The ends of the bow members, which form the posts, are rigidly secured to the frame consisting of the plate F and channel members.

G—G are the bulk head frames or ends of the car and extending throughout the entire length of the car body proper are two pipes N, which act as the center braces of the car body and at the same time as conduits through which the electric cables and wires pass from both ends of the body of the car to the motor or motors, as the case may be.

The pipes N screw into plates *n*, which are in turn fastened to the end sills of the car body and extensions N' of the pipes are carried under the platform alongside the beams to a junction box *n'* directly below the controller, which is mounted on the platform so that these pipes or tubes not only act as strengthening members for the base frame of the car, but also act as means for the reception or protection of the electric wires, which, heretofore, were placed in separate tubes. Furthermore, it will be understood that the car can be constructed and the cables can be run in through the tubes after the greater portion of the structural work has been completed.

While my invention is particularly adapted for the construction of street and inter-urban cars, it will be understood that it can

be used in the ordinary long passenger cars without departing from the essential features of the invention.

I claim:

- 5 1. The combination in a car body, of side plates vertically arranged and extending along each side of the said body from end to end thereof, a sill channel at the lower end of the said plate, a belt rail channel
10 member at the upper side of the said plate, and braces extending throughout the length of the car body diagonally from one of said channel members to the other on one side of the plate, with a series of bows spaced
15 apart and forming the rafters and posts of the car.

2. The combination in a car body, of a

side frame consisting of a longitudinal sill member and a longitudinal belt rail member both extending from one bulk head to the other, a plate secured to the sill member and belt rail member, a continuous brace having angle sections at each end of the car body and located between the sill member and belt rail member, bows forming the roof, and
20 posts secured to said members.

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

HENRY E. HADDOCK.

Witnesses:

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