No. 775,952. PATENTED NOV. 29, 1904.

C. VANDERBILT.

RAILWAY CAR.

APPLICATION FILED FEB. 12, 1904.

NO MODEL. 6 SHEETS—SHEET 1.

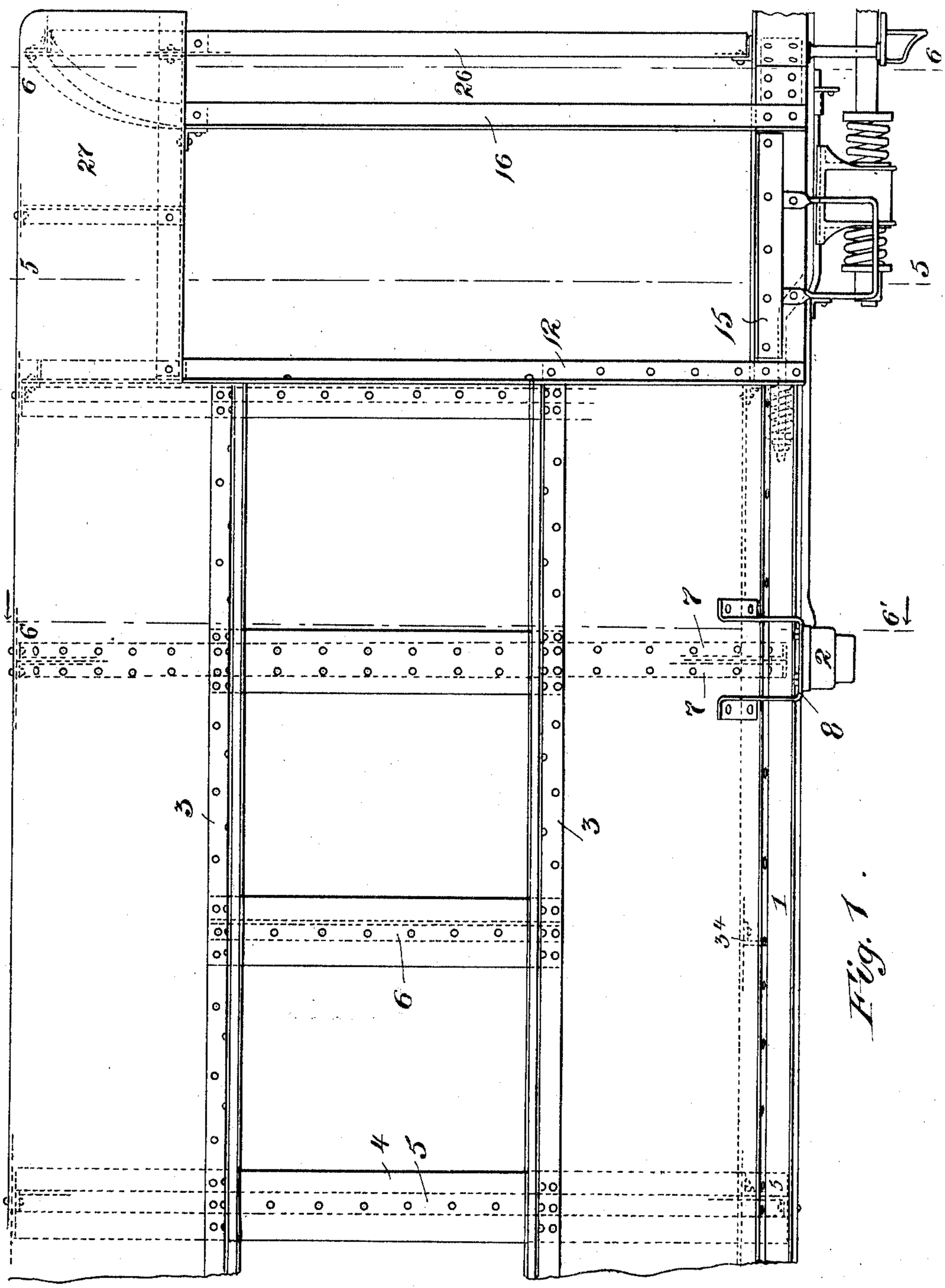

Fig. 1.

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NO MODEL. 6 SHEETS—SHEET 2.

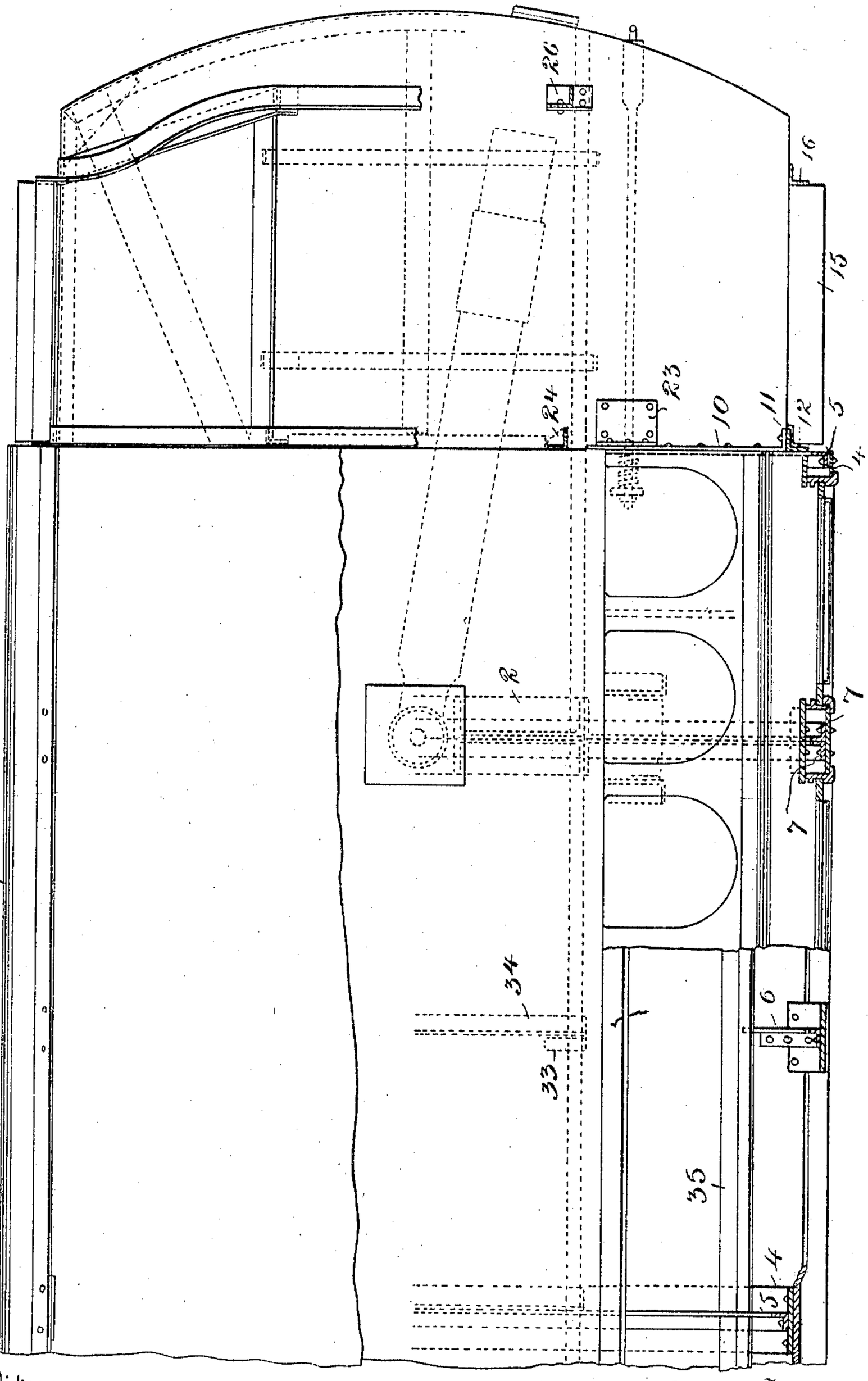

Fig. 2.

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NO MODEL. 6 SHEETS—SHEET 3.

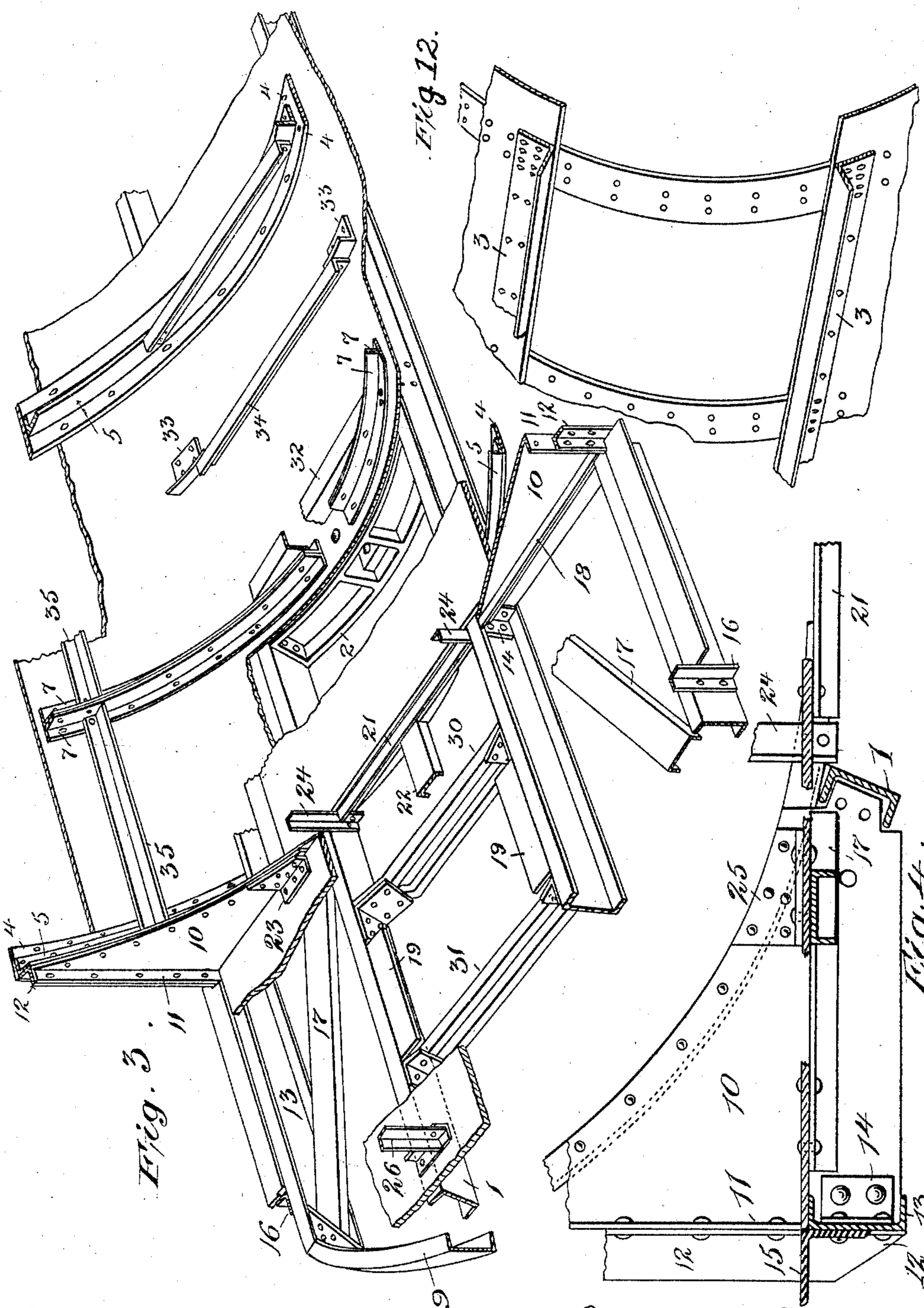

Fig. 3.

Fig. 4.

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NO MODEL. 6 SHEETS—SHEET 4.

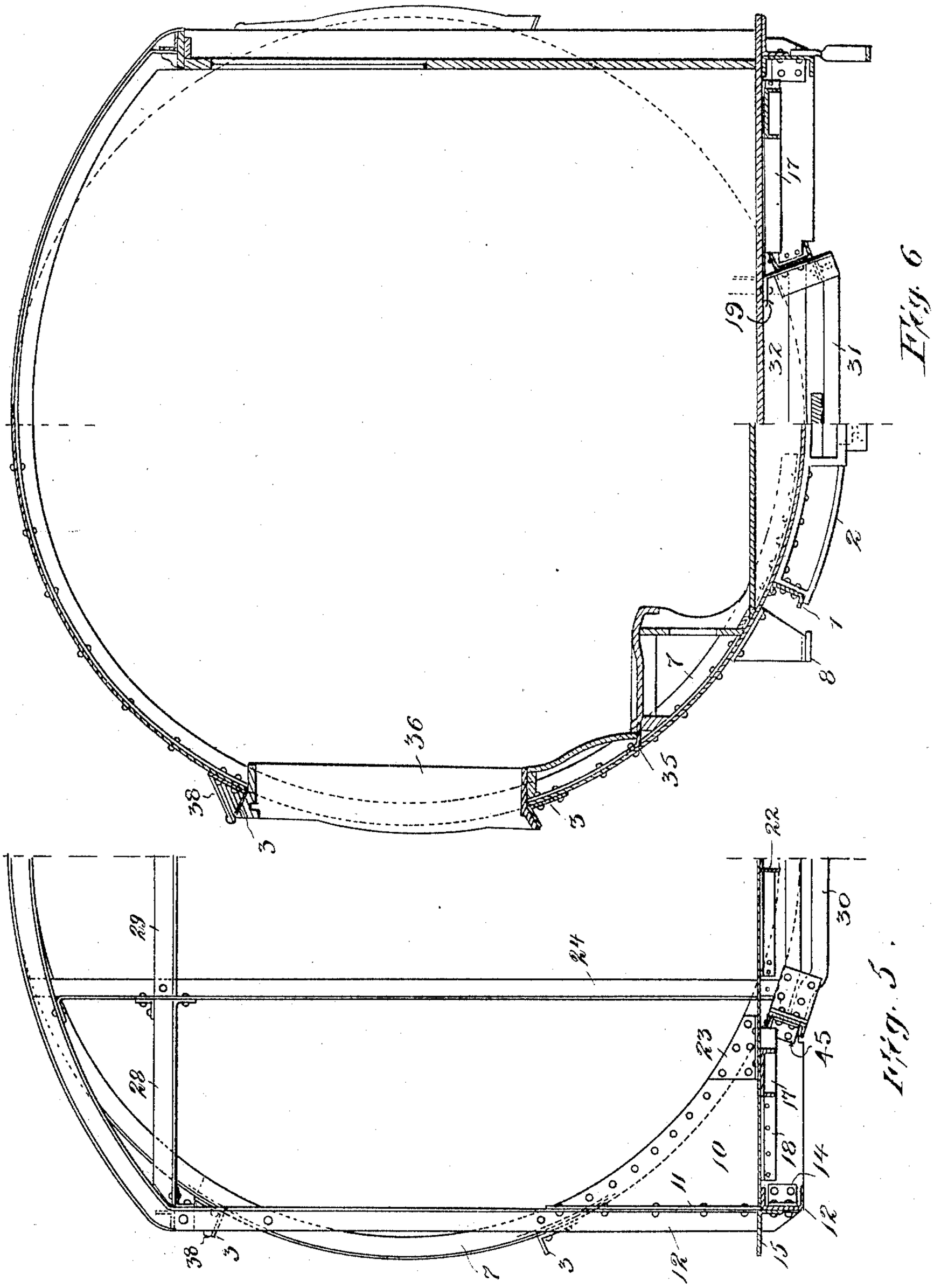

Fig. 6.

Fig. 5.

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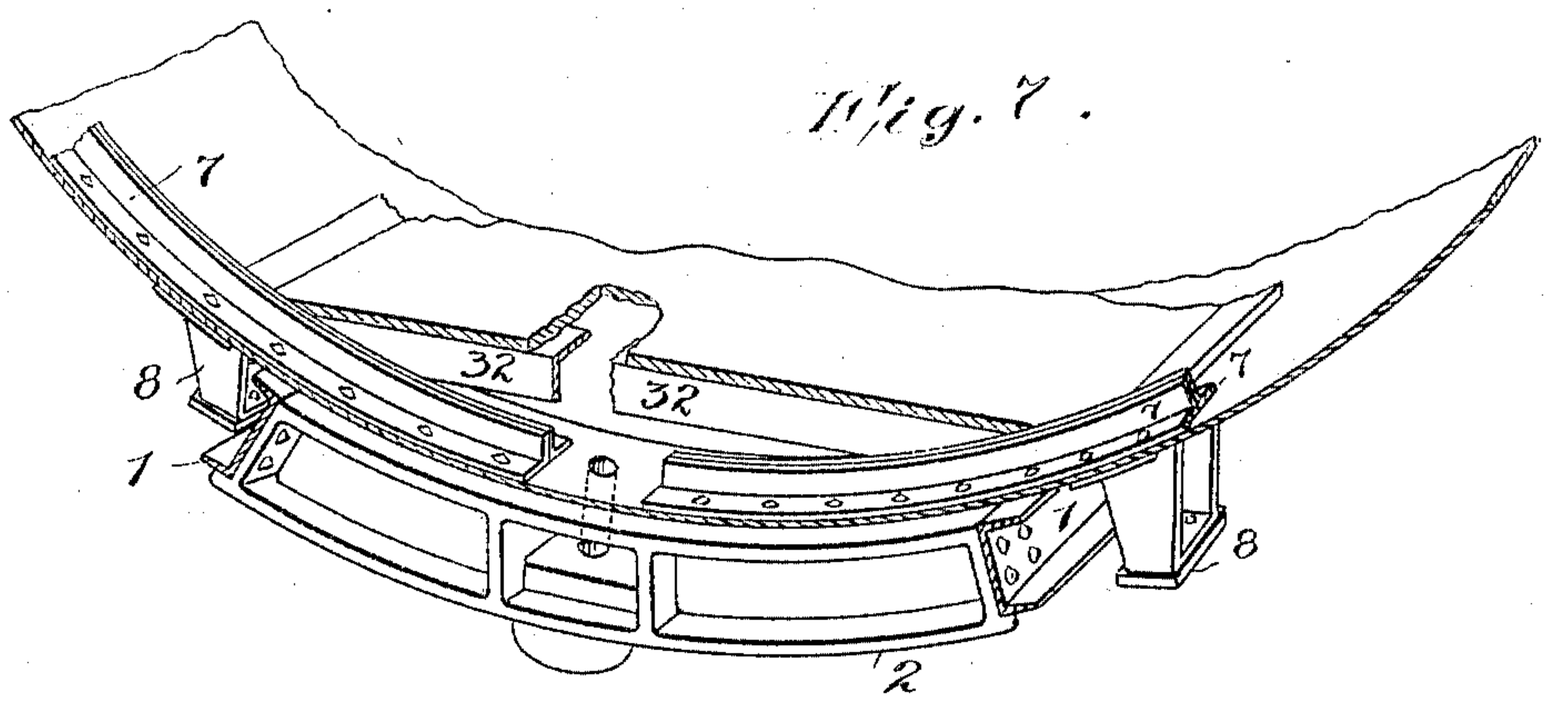
RAILWAY CAR.

APPLICATION FILED FEB. 12, 1904.

NO MODEL. 6 SHEETS—SHEET 5.

Fig. 7.



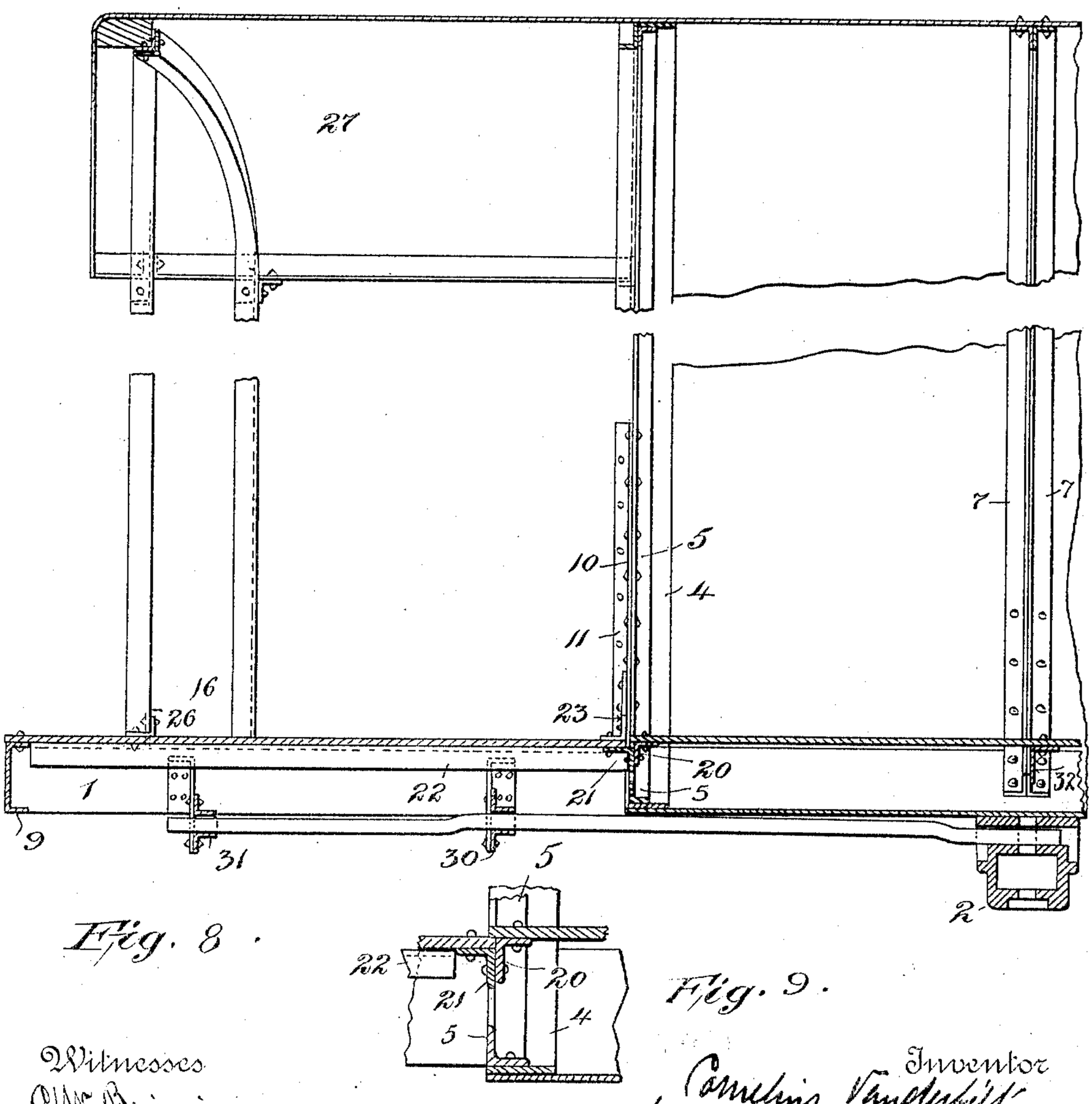


Fig. 8.

Fig. 9.

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No. 775,952. PATENTED NOV. 29, 1904.

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RAILWAY CAR.

APPLICATION FILED FEB. 12, 1904.

NO MODEL. 6 SHEETS—SHEET 6.

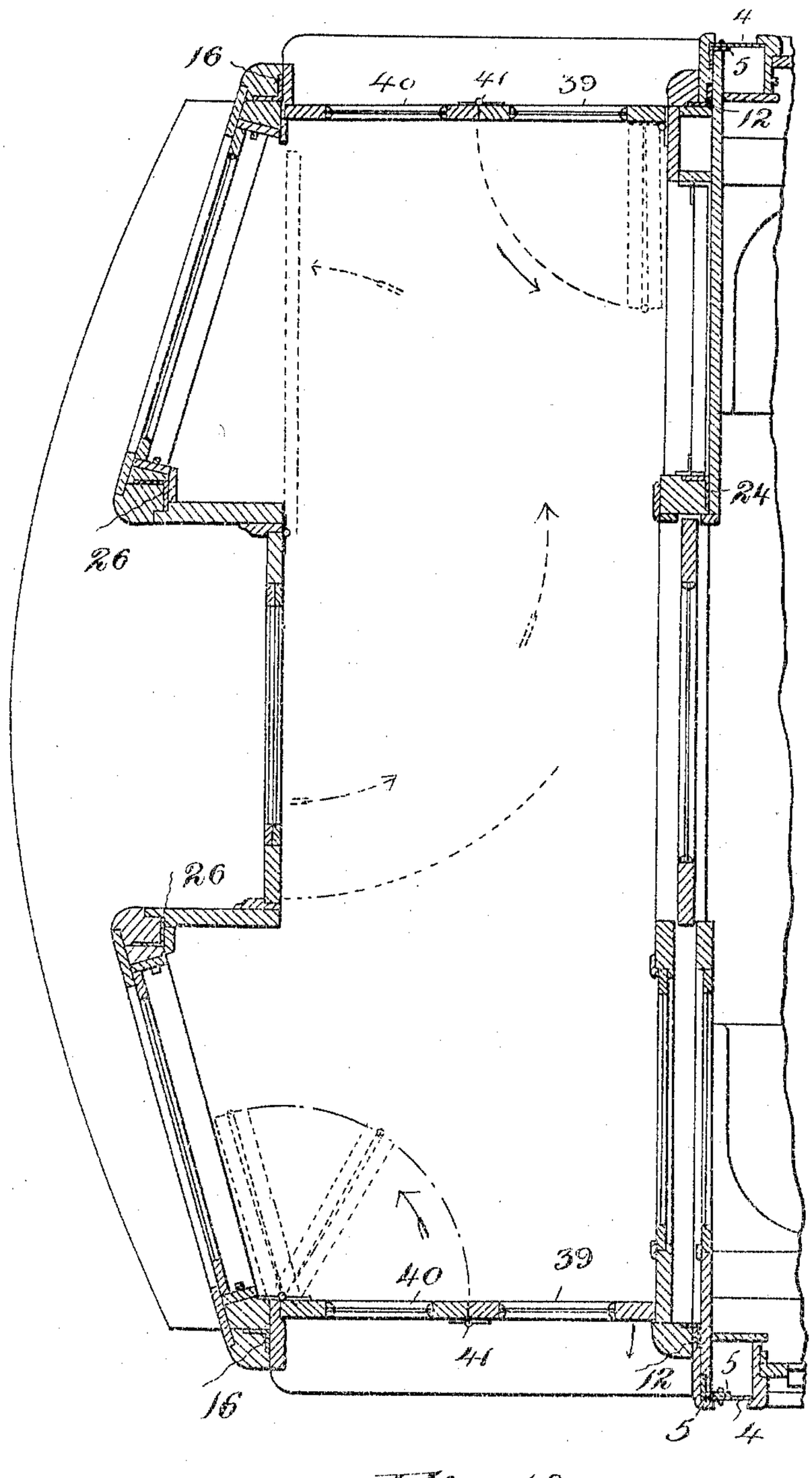

Fig. 10.

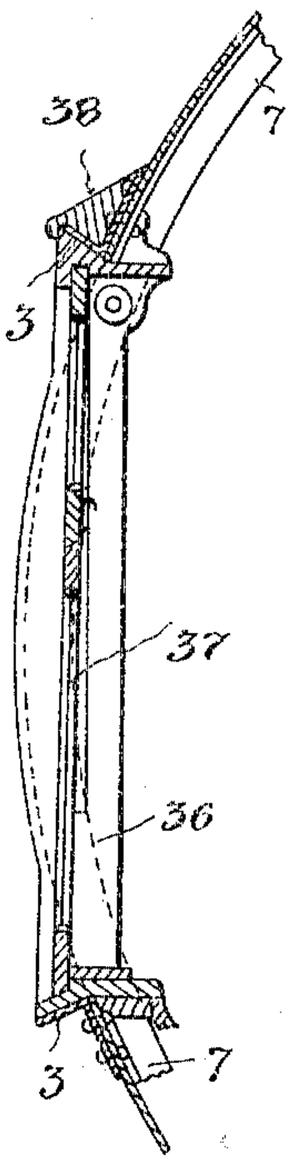

Fig. 11.

Witnesses
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Dyer Duell Hopkins & Dyer

No. 775,952. Patented November 29, 1904.

UNITED STATES PATENT OFFICE.

CORNELIUS VANDERBILT, OF NEW YORK, N. Y.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 775,952, dated November 29, 1904.

Application filed February 12, 1904. Serial No. 193,254. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS VANDERBILT, a citizen of the United States, residing in the city of New York, State of New York, and having a post-office address at No. 30 Pine street, borough of Manhattan, in said city, have invented certain new and useful Improvements in Railway-Cars, of which the following is a full, clear, and exact description, such as will enable those skilled in the art to construct the same.

My invention relates to improvements in railway-cars, and comprises a number of improvements generally applicable to the construction of railway-cars and also a number of improvements particularly applicable to passenger-cars.

The nature of these improvements fully appears from the following specification, taken in connection with the accompanying drawings, in which I have fully and clearly described the preferred form of my invention. It will be understood that in thus minutely describing the preferred form of my invention I do not intend to limit myself to the specific details set forth, since some of the features of my invention are capable of a number of variations and of a wide application.

The scope of my invention is particularly pointed out in the appended claims.

I have used ordinary commercial forms of metal in the construction of my car for the purpose of reducing the cost, and it is one of the advantages of my improved construction that it is possible to use such commercial forms.

Referring to the drawings, Figure 1 is a side elevation of one end of the framework of a car constructed in accordance with my invention before the outside finishings and trimmings have been applied. Fig. 2 is a plan view, partly broken away to show the interior of the car and further broken away to show the supporting-framework. Fig. 3 is a perspective view showing the framework of the under portion of the car and the platform. Fig. 4 is a detailed view of the construction of the end of the car-body and the platform. Fig. 5 is a cross-section of one half the car on the line 5 5 of Fig. 1. Fig. 6 is a cross-section, the right half taken on the line 6 6 of Fig. 1 and the left half on the line 6′ 6′ of Fig. 1. Fig. 7 is a detailed perspective sectional view just forward of the body-bolster. Fig. 8 is a longitudinal central section of one end of the car. Fig. 9 is a detail of part of Fig. 8. Fig. 10 is a sectional plan view of the platform. Fig. 11 is a detailed view of the window-frame. Fig. 12 is a detailed view showing the frame construction supporting the windows.

In the preferred form shown the framework of the car is cylindrical in shape and comprises annular ribs covered by metallic sheathing, and at the lower part of the car-body and bolted to the sheathing and through the sheathing to the annular ribs are the longitudinal sills 1 1, shown as channel-irons. Fastened between these sills—one near each end of the car—are the body-bolsters 2. The metallic sheathing is composed of an upper and a lower section, with an opening between the sections on each side of the car for the window-frames. Longitudinally-extending angle-irons 3 3 are fastened to the sheathing at the upper and lower edges of the openings. These angle-irons serve to strengthen the car longitudinally and also serve to support the window-frames. The annular ribs are of a compound construction, comprising bands 4, backed by the strengthening-rings 5, shown as angle-irons. The bands 4 where they bridge the openings in the sheathing serve to support the sides of the window-frames. In the construction shown the distance between the annular ribs is twice the distance from center to center of the windows. This necessitates a support for the window-frames intermediate the ribs. This support is furnished by a segment 6 of a ring similar in construction to the annular ribs 4 5, bolted to the sheathing at the top and bottom edges of the openings therein. It is obvious that instead of these segments 6 the ribs 4 5 may be used between the windows. The annular rib immediately above the body-bolster is of a modified construction. This rib is composed of two angle-irons 7 7, placed with their upturned flanges adjacent one another. These angle-irons are bolted to the sheathing and

to the body-bolster and are cut away immediately above the center of the body-bolster to allow for the removal of the draw-bar pivot-pin. The body-bolsters form part of the framework and do not extend beyond the longitudinal sills 1 1. The side bolster-bearings are formed by U-shaped steps 8, bolted directly to the sheathing of the car. Each body-bolster comprises a metallic casting fastened between the longitudinal sills 1 1, as clearly shown in Fig. 7.

The parts of the car above described are preferably of metal, and when assembled they form a car-frame of strong but inexpensive construction ready to receive the exterior and interior trimmings. These trimmings are preferably to be made entirely of fireproof material.

The plate 4 of the last annular rib of the car-frame is cut away so as to leave the upstanding flange of the angle-iron 5 as a flat surface at the extreme end of the framework. The sheathing and the angle-irons 3 3 also terminate at this line. The longitudinal sills 1 1 extend beyond the cylindrical body to form supports for the platform-framework and the draw-bar rigging, &c. These sills extend to the end sills 9 and are fastened thereto by knee-braces. (Not shown.) Depending from the end of the cylindrical frame at each side and bolted to the flange 5 of the end rib is a stiff-metal plate 10, with the flange 11 at its outer edge and fastened at its inner edge to the sill 1 by a knee-brace 45. Bolted to the flange 11 and to the flange 5 is an angle-iron 12, forming a vertical platform-post. The flange 11 is cut away below the level of the platform-floor to leave room for the outside platform-sill 13, which is in the form of a channel-beam fastened to the plate 10 by a knee-brace 14 at one end and at the other end to the end sill 9. Bolted to this channel-iron is the angle-plate 15, forming a projection of the platform-floor. At the end of this plate and bolted to the sill 13 is a second platform-post 16. A diagonal brace 17 extends from the junction of the sills 9 and 13 to the junction of the sill 1 and the plate 10. Bolted to the plate 10 and serving as a floor-support is an angle-iron 18, and bolted to the sills 1 are angle-plates 19, also serving as floor-supports. Extending horizontally across the lower portion of the end rib and bolted at its ends to the flange 5 is an angle-iron 20, and bolted to the depending flange of this angle-iron and extending between the sills 1 1 is an angle-iron 21, acting as a further floor-support. Extending longitudinally of the platform and at the center thereof is a further floor-supporting channel-iron 22. Upon this underframe the floor of the platform is laid. Bolted to the plate 10 is a knee-brace 23, serving as a clamp for the floor and a support for the brace 17, to which it is bolted. Bolted to the flange 5 are inner rear platform-posts 24, and near the forward end of the platform angle-plates 25 are bolted to the floor and to the flange of the sills 1, and to the upturned flange of these plates 25 are bolted the inner forward platform-posts 26. These posts 12, 16, 24, and 26 are connected at the top by curved angle-irons, which serve to support the hood 27, and the framework is further strengthened by cross-braces 28 and 29 in a manner which will readily be understood from the drawings.

Beneath the platform and fastened between the sills 1 1 are the draw-bar-supporting frames 30 and 31.

The particular construction of buffer-rigging used forms no part of the present invention and needs no detailed description.

In the interior of the cylindrical frame, extending transversely of the car and bolted to the flanges of the rings 5 and 7, near their lowest portion, are floor-supporting beams 32, similar to the beam 20, above described. Intermediate these beams 32 and bolted to the angle-plates 33 are transverse floor-supporting beams 34. The angle-plates 33 are bolted directly to the sheathing. Upon these the floor is laid, as shown in Figs. 6 and 7. Extending longitudinally of the car and fastened to the flanges of the rings 5 and 7 are the angle-irons 35, which serve to stiffen the framework longitudinally and also to support the seats. The channel formed by the upper angle-iron 3 is filled with fireproof material, preferably lignolith, to form an eave, as shown at 38 in Fig. 11.

In Fig. 10 I have shown the platform with the window frames and trimmings applied and with an improved form of door, comprising two sections 39 and 40, hinged at 41. This door may be manipulated in any of the well-known ways. The hinged construction renders it possible to fold the door into a small space, so that it does not interfere with passengers entering the car.

Having now fully described the preferred form of my invention, I proceed particularly to point out what I consider the scope thereof in the following claims:

1. In a car-frame, longitudinally-extending sills, body-bolsters supported between said sills, and a cylindrical casing fastened directly to said sills and body-bolsters.

2. In a railway-car, a cylindrical body portion, longitudinally-extending main sills, end sills fastened to the main sills, platform side sills, the forward ends of which are fastened to the end sills, and members depending from the cylindrical body portion and supporting the rear ends of the platform side sills.

3. In a railway-car, a cylindrical casing, annular ribs secured to the interior of said casing, longitudinally-extending beams spacing said ribs apart, and seats supported by said beams.

4. In a railway-car, a cylindrical shell, a

platform supported by projecting ends of longitudinal sills, by the parts 13, and by the flanges 10, substantially as described.

5. In a railway-car, a cylindrical shell, a platform, plates 10 attached to the cylindrical shell and to the platform for supporting and giving rigidity to the latter, substantially as described.

6. In a railway-car, a cylindrical body portion, sills extending beneath said body portion, body-bolsters secured between said sills, and side bolster-bearings secured to the body portion.

7. In a railway-car, separate center and side bolster-bearings, all secured to the car-body.

8. In a railway-car, a cylindrical casing, openings in said casing for window-frames, angle-irons fastened above said openings, and a filling in said angle-irons forming an eave for the windows.

9. In a car-body, longitudinally-extending sills, bolsters between said sills, a cylindrical casing attached directly to said sills and said bolsters and strengthening-ribs on the interior of said casing and opposite said bolsters, substantially as described.

10. In a cylindrical car-body, longitudinally-extending draft-sills directly connected to a cylindrical shell, bolsters connected to said longitudinal draft-sills and to said casing, and transverse strengthening-ribs on the interior of said casing, opposite said bolsters, substantially as described.

11. In a car-body, a cylindrical casing, body-bolsters attached directly to said casing, interior ribs opposite the body-bolsters and transverse floor-supports secured to said ribs, substantially as described.

12. In a car-body, a cylindrical casing, interior annular ribs secured to the casing, and transverse floor-supports secured to said annular ribs, substantially as described.

Signed in the city, county, and State of New York this 11th day of February, 1904.

CORNELIUS VANDERBILT.

Witnesses:

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EDWIN C. FARLOW.