J. B. HEVERLING.

CAR CONSTRUCTION.

APPLICATION FILED MAR. 15, 1909.

969,278.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 1.

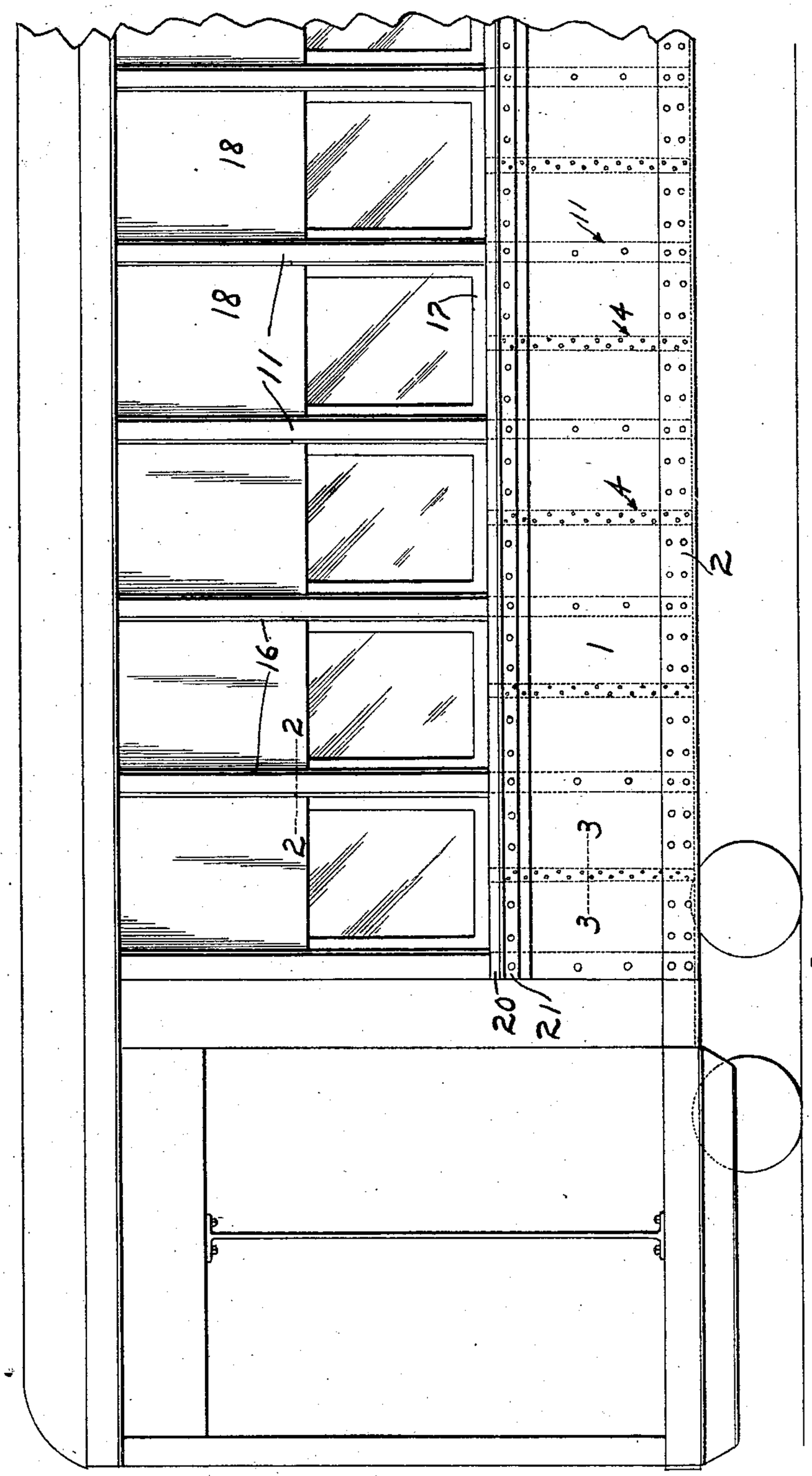

FIG. 1.

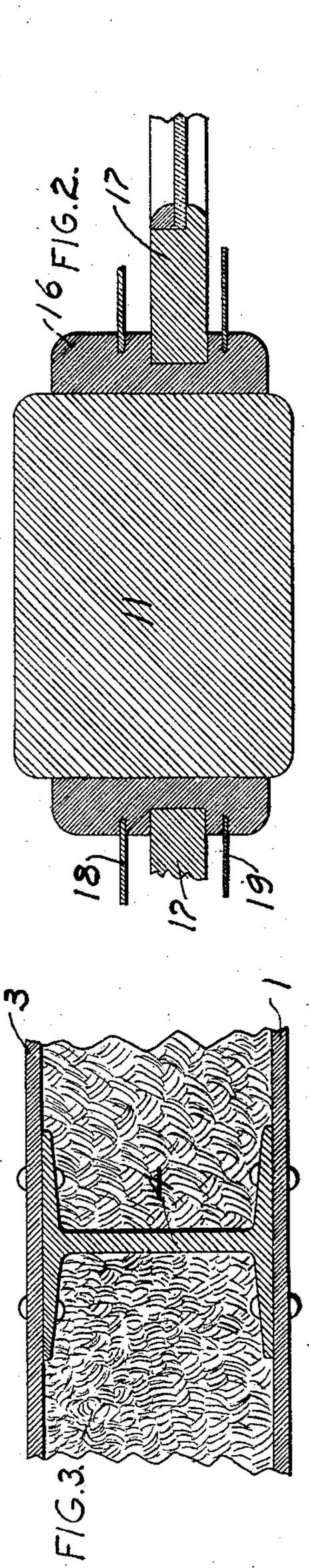

FIG. 2.

FIG. 3.

WITNESSES

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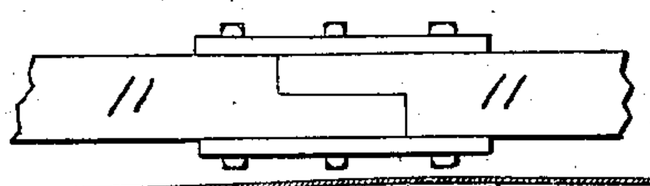
2 SHEETS—SHEET 2.

FIG. 5.



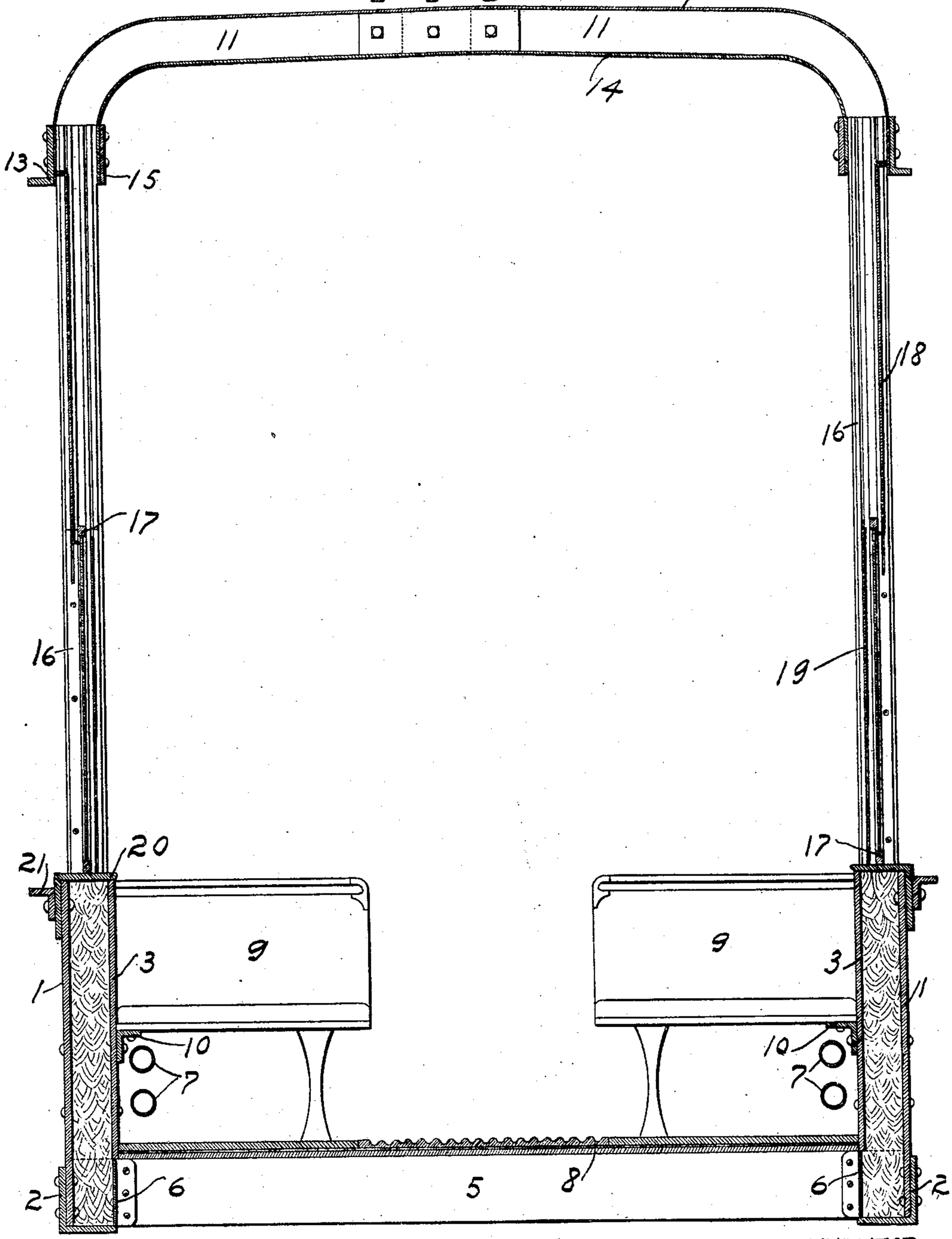


FIG. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN B. HEVERLING, OF ST. LOUIS, MISSOURI.

CAR CONSTRUCTION.

969,278. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed March 15, 1909. Serial No. 483,392.

To all whom it may concern:

Be it known that I, JOHN B. HEVERLING, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of one end of a car constructed in accordance with my invention. Fig. 2 is an enlarged sectional view on line 2—2, Fig. 1. Fig. 3 is an enlarged sectional view on line 3—3, Fig. 1. Fig. 4 is a cross sectional view. Fig. 5 is a detail view showing the manner of connecting the roof carlines.

This invention relates to a new and useful improvement in car construction of that type which is designed especially for carrying passengers, the object being to construct a car in a simple and cheap manner whereby the framing is supported by plate-girder sides, the posts thereof being bent inwardly to form the roof carlines.

Another object is to so arrange the side plates between these posts that they may be independently moved for ventilation purposes.

With these objects in view, the invention consists in the construction, arrangement and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, 1 represents a plate girder constituting the outer side wall of the car, to the lower end of which is attached a tension angle 2.

3 is the inner plate of the plate girder side, which is spaced apart therefrom by suitable I-beams 4 (see Fig. 3), constituting the posts between the window posts.

5 are the cross bearers or floor beams riveted to the plate girder sides and supported in position by the angle 2. Plates 6 are employed to close the spaces between these beams 5, so as to provide a closed pocket in which is arranged mineral wool, which not only acts as a sound-deadener, but being a non-conductor of heat, will protect the heating pipes 7.

8 is the floor of the car, which is preferably made up of two or more thicknesses of wood, between which is arranged asbestos, tar or other paper, acting as a sound deadener and also to prevent the entrance of dust into the car through the floor.

9 are the seats which are of any proper construction, their outer ends being supported by angles 10 extending along the plate 3 and acting as a stiffener for said plate, preventing bulging and buckling thereof.

11 are posts preferably made of wood secured between the plates 1 and 3 and extending up to the roof of the car where they are bent inwardly to form the roof carlines, their ends being connected by a scarf joint, as shown in Fig. 5. The outside roof sheeting 12 is supported by these carlines, the ends thereof terminating under angles 13 forming facia plates. The inside roof sheeting or veneering 14 is employed to provide an inside finish, its ends terminating under a finishing molding 15.

Secured to the posts 11 are grooved molding pieces 16 (see Fig. 2) in the lower ends of which are mounted the window sashes 17, said window sashes being guided in their vertical movement by the grooves in said posts and being held in their vertical positions by any of the wellknown sash-holding devices.

18 indicates a plate mounted in the outer groove or molding 16, which outer groove terminates at its lower end just below the upper edge of the sash, as shown in Fig. 4. Plate 18 has an inwardly extending flange at its lower edge to coöperate with the upper sash rail to make a tight joint. The upper edge of plate 18 is provided with an outwardly extending lip or flange to make a close joint with the vertical portion of the outside roof sheeting. Any suitable and well known means may be employed for holding the plates 18 in their vertically adjusted positions. When the plates are lowered a space is provided between the upper edges thereof and the facia plate for ventilating purposes. These plates 18 are independently movable and a ventilating opening, or a series of openings, may be thus provided at any desired point in the car body.

In the inside grooves or moldings 16 are arranged plates 19, and these plates 19 are also held in vertically adjusted positions by any of the well known holding means. Plates 19 serve as face shades and may be

moved up above the window sash to be entirely out of the way, if desired.

20 indicates an angle arranged at the upper edges of the plate girder sides and constituting the window sill, the horizontal leg of said angle being cut away for the posts 11. Angle 20 acts as a compression flange for the plate girder but may be reinforced if desired by a supplemental angle 21.

From the above construction it will be noticed that the plate girder sides located beneath the window openings constitute the main carrying members of the car body, the parts above the window sill being carried by these main carrying members. These carried parts are, therefore, made as light as possible, and I prefer the use of wood for my window posts and roof carlines, although it is obvious that commercially-rolled steel forms could be employed, if desired. Where steel is used, it is possible to bend the piece in an inverted U form and avoid the joint in the center of the roof, thus using a single piece of steel for both posts.

I deem it an important feature to preserve the simplicity of the design and the lightness of the parts entering into the construction because by so doing I am enabled to produce a car which is cheap and strong and one which is not liable to get out of order so as to need repairs, as is common in coaches consisting of wood or metal, where ornamentation prevails and where the moldings are either glued, inlaid or riveted in position and have to be cleaned and kept in prime condition. Another important feature in connection with the simplicity of the design illustrated is the fact that it is sanitary and easily kept clean.

Having thus described my invention, what I claim is:

1. In a car construction, the combination with plate girder sides consisting of two parallel webs having tension and compression flanges located on the outside of said plate girder, and a supplementary reinforcing compression flange.

2. In car construction, a plate girder side having a compression flange notched for the passage of window posts and forming a window sill or ledge, and a reinforcing angle adjacent said flange and whose horizontal leg extends outwardly, from the plane of the plate girder side.

3. In a car construction, plate girder sides comprising two parallel webs, spacing posts to which said webs are secured, a tension angle having its horizontal leg extending between the two webs, floor beams secured to the lower portion of said plate girder sides and a filling piece between the floor beams, forming a pocket for the retention of non-heat conducting, sound-deadening material.

4. In a car construction, a molding attached to window posts fastened between two plate girders and constituting a window guide, a sash mounted in said molding, a ventilating plate having a flange at its lower edge for coöperating with the upper sash rail and being movable to provide an opening near the upper portion of the car, said plate having a flange at its upper edge for coöperating with the side-plate and a face shade movable opposite the sash opening.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 13th day of March, 1909.

JOHN B. HEVERLING.

Witnesses:
F. R. CORNWALL,
LENORE CLARK.