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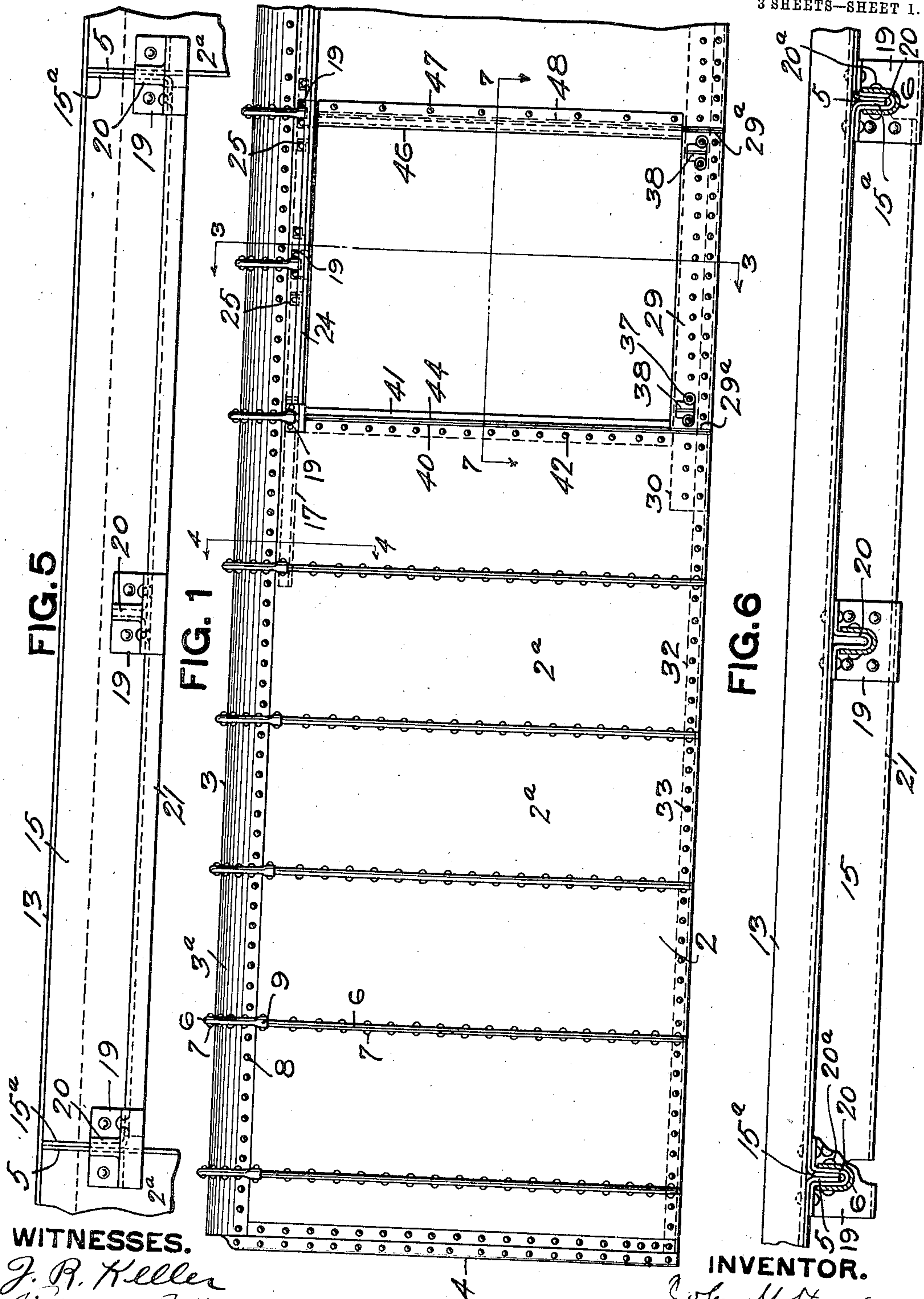
J. M. HANSEN.

BOX CAR.

APPLICATION FILED NOV. 17, 1909.

Patented June 21, 1910.

3 SHEETS—SHEET 1.



WITNESSES.

J. R. Keller
Robert C. Zotten

INVENTOR.

John M. Hansen
By Kay & Zotten
attorneys

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3 SHEETS—SHEET 2.

FIG. 2

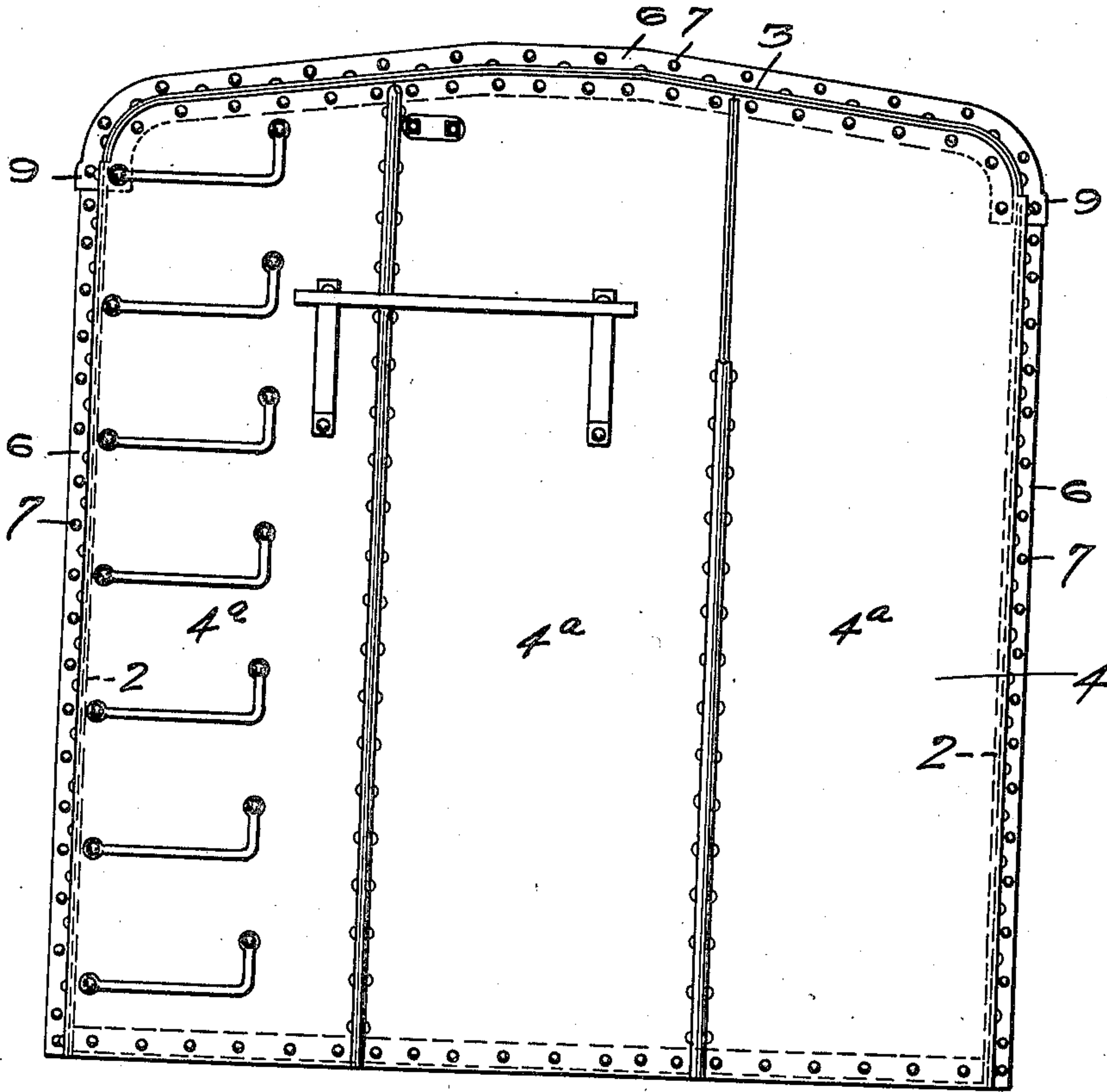


FIG. 7

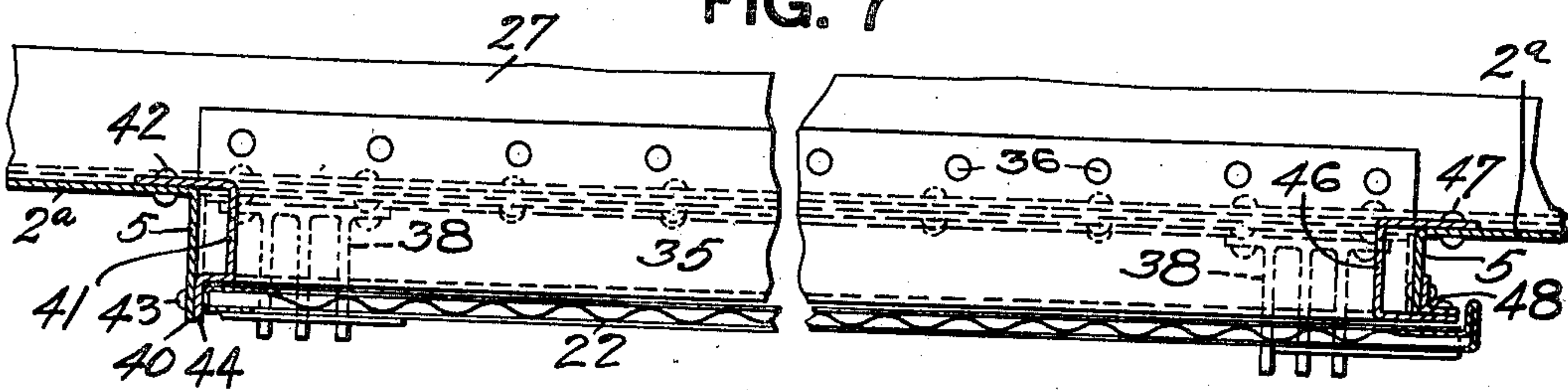
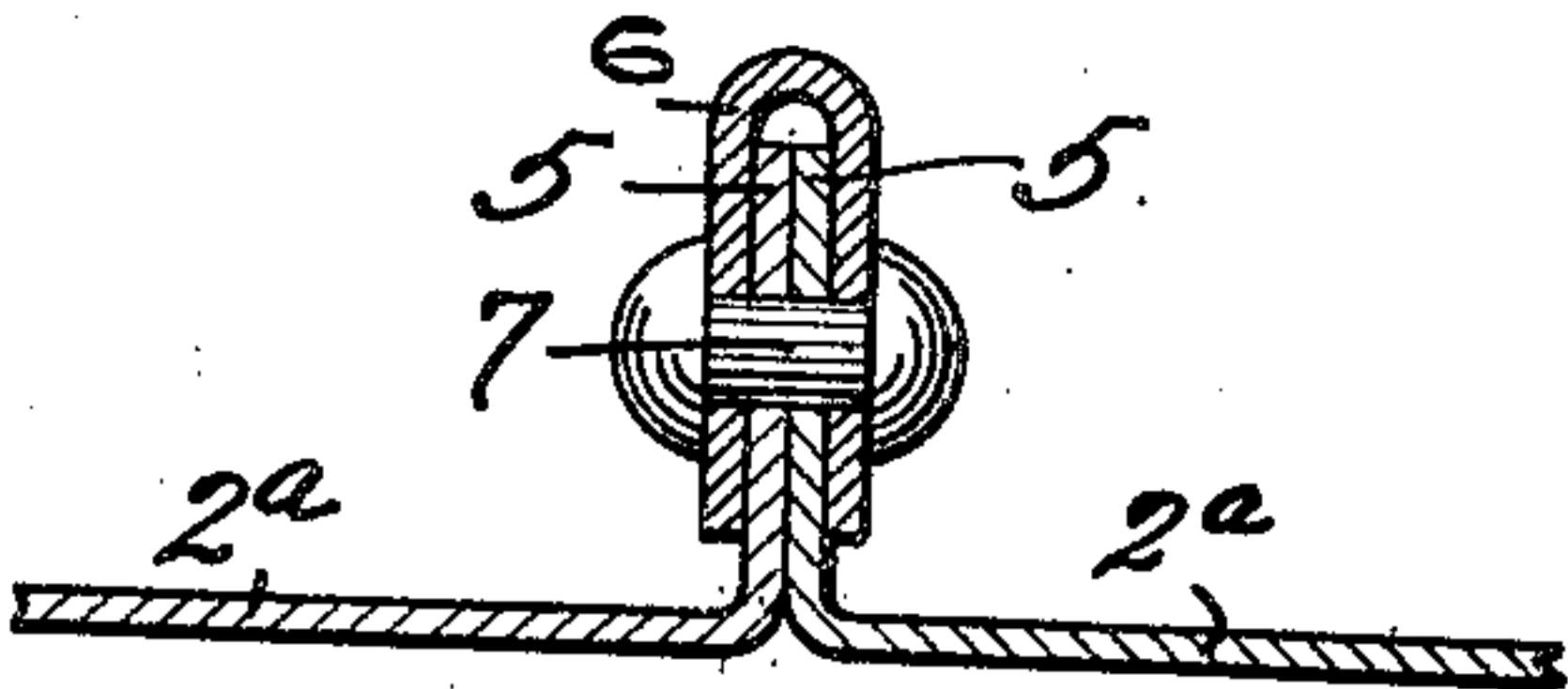


FIG. 8



WITNESSES.
J. R. Keller
Robert C. Fother

INVENTOR.
John M. Hansen
By Kay & Fother
Attorneys

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3 SHEETS—SHEET 3.

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FIG. 3

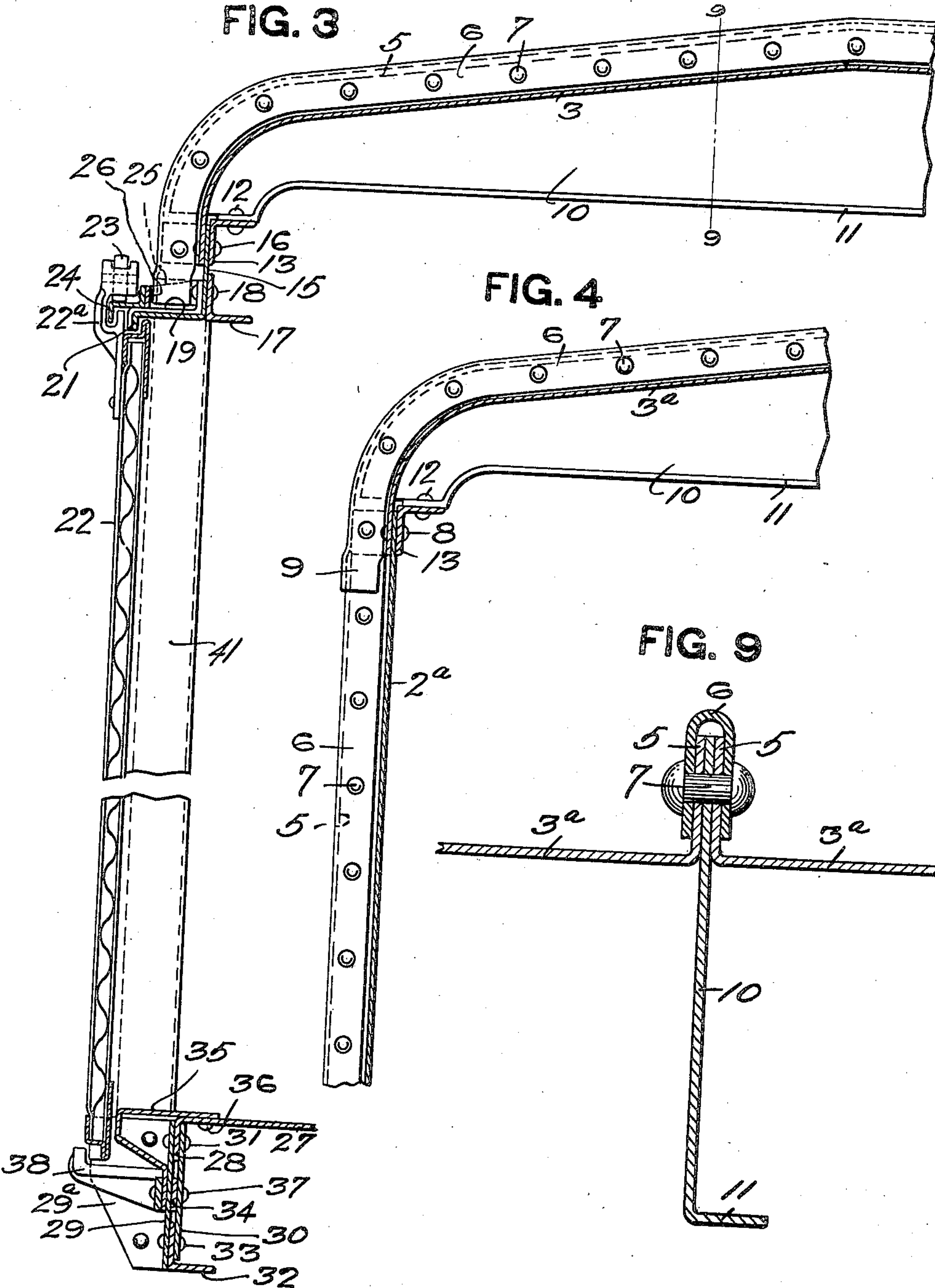


FIG. 4

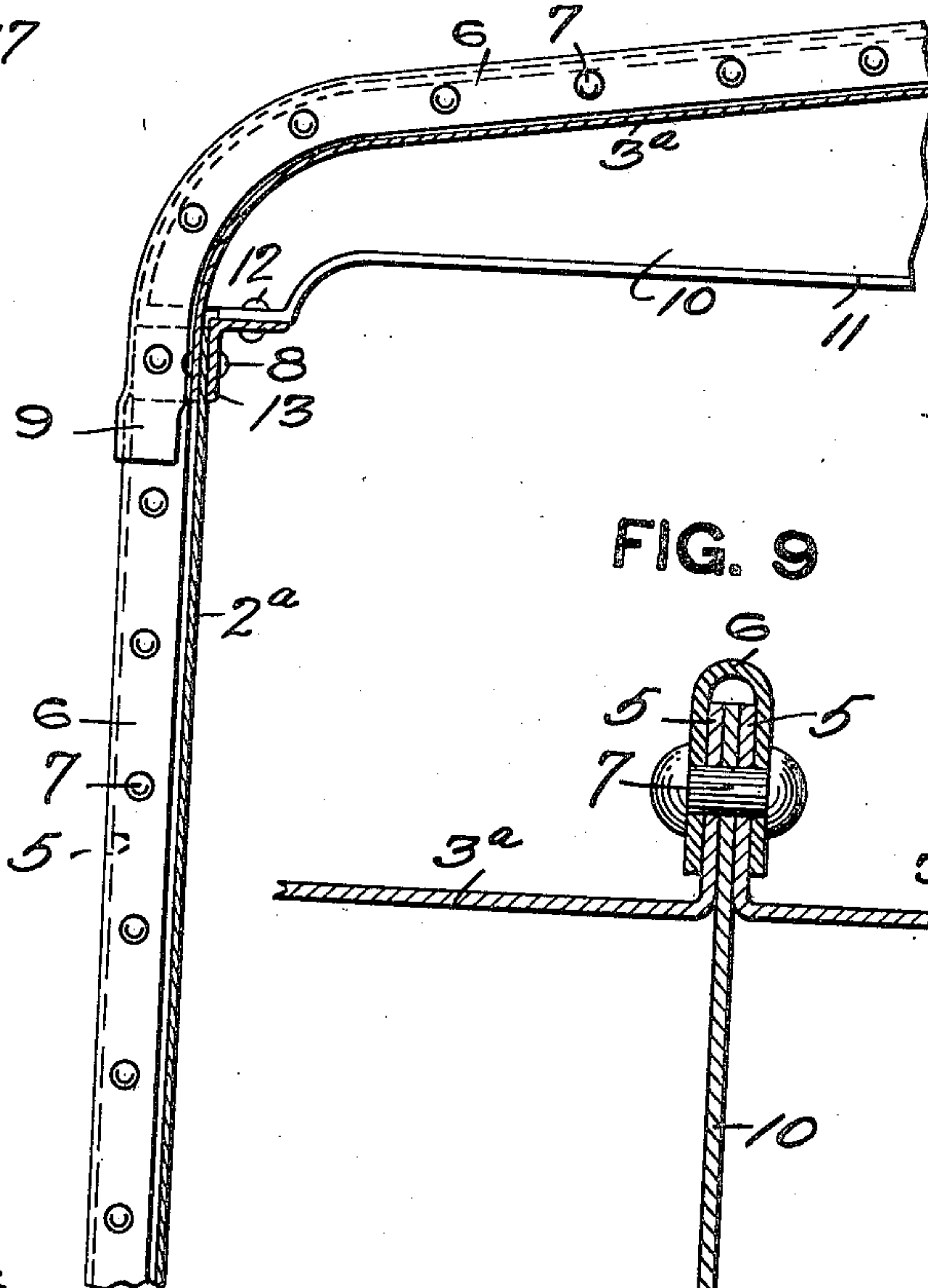
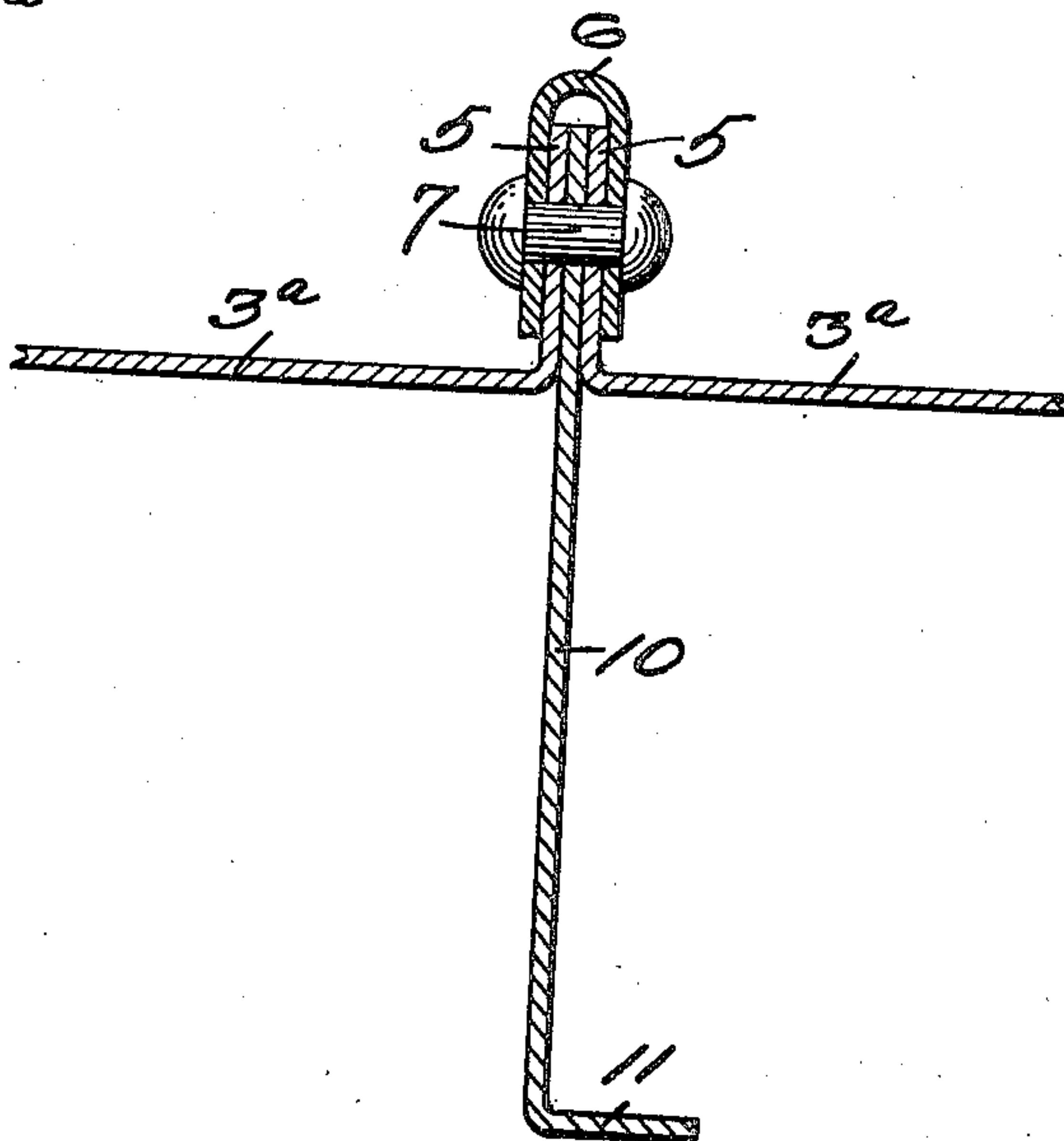


FIG. 9



WITNESSES.

J. R. Keller
Robert C. Follen

INVENTOR.

John M. Hansen
By Kay T. Follen
attorney

UNITED STATES PATENT OFFICE.

JOHN M. HANSEN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO STANDARD STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BOX-CAR.

961,773.

Specification of Letters Patent. Patented June 21, 1910.

Application filed November 17, 1909. Serial No. 528,579.

To all whom it may concern:

Be it known that I, JOHN M. HANSEN, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Box-Cars; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to metal box-cars.

One of the objects of my invention is to provide for the connecting of the plates composing the sides, ends and roof in such a manner as to provide a water-tight joint and at the same time give strength and rigidity to the car-body.

A further object of my invention is to improve the door-frame construction for the support of the sliding door, all as hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a side elevation of a portion of a car body showing my invention; Fig. 2 is an end view; Fig. 3 is an enlarged section on the line 3—3 Fig. 1; Fig. 4 is a section on the line 4—4 Fig. 1; Fig. 5 is a face view of the upper door frame; Fig. 6 is a plan view of the upper door frame; Fig. 7 is a cross sectional view of the side frames of the door; Fig. 8 is an enlarged view showing the connection between the plates or sheets composing the sides of the car; and Fig. 9 is an enlarged section on the line 9—9 Fig. 3.

As above stated, my invention relates to metal box-cars and as shown from the accompanying illustration said cars are made up of the sides 2, the roof 3 and the ends 4. The sides are made up of the plates 2^a; the roof is made up of the plates 3^a and the ends are made up of the plates 4^a. These plates are of suitable thickness to give the necessary strength and rigidity to the car and said plates are provided with the outwardly extending flanges 5 and the flanges of adjoining plates are brought into juxtaposition with each other as shown in Fig. 8, whereupon cover-strips 6 are slipped over the flanges, said cover-strips being U-shaped and inclosing the flanges as clearly indicated in Fig. 8. After the cover strips 6 have been adjusted in position the rivets 7 are inserted through openings in the cover plate 6 and flanges 5 and the parts riveted together so as to form a very tight and secure connection while at the same time the cover-strips act to prevent the entrance of water or moisture. In ad-

dition the effect of the flanged plates connected by the cover-strips in the above manner is to greatly strengthen the car-body and its rigidity is greatly increased. This construction makes it possible to dispense with vertical uprights or posts and greatly reduces the labor as well as the cost of construction of the car. The roof-plates are riveted to the side-plates and to the end-plates by means of rivets 8 and the cover-strips which unite the roof-plates are slightly enlarged or flared as at 9 where they slip over the ends of the cover-strips uniting the side-plates. By this construction the cover-plates are practically continuous and by overlapping in this manner all liability of the entrance of rain or moisture is prevented.

The carlines 10 are formed of metal plates increasing in width at the middle of the car and said carlines are provided with the flanges 11 which add strength and rigidity. Said carlines are inserted between the flanges 5 of the roof-plates 3^a, and the same rivets 7 which secure the cover-strip to the flanges also secure the carline in position. In this manner the carline is securely held in place without the employment of additional rivets and at the same time the insertion of the carlines between the flanges of the roof plates tends to increase the rigidity of the construction. The ends of the carline 10 are riveted as at 12 to the angle-bars 13 extending longitudinally of the car. These angle bars 13 are secured to the side-plates and roof-plates by means of the same rivets 8 which connect the said side and roof-plates.

I will now describe the door-frame construction which is adapted to receive the ordinary sliding door such as commonly employed in connection with box-cars of this character. Above the door opening 14 is the plate 15 which is pressed in the form of a Z-bar and said plate is secured to the roof-plates by means of the rivets 16 which pass through said plate and also through the angle-bar 13. In order to further stiffen and strengthen the plate 15 an angle-bar 17 is provided which is riveted to the rear face of the plate 15 by means of the rivets 18. The ends of the Z-bar 15 are flanged as at 15^a and said flanges are brought into juxtaposition with the flanges of the side-plates forming the doorway. Angle pieces 19 are

riveted at intervals to the Z-plate 15, said angle pieces being likewise Z-shaped in section and said angle-pieces are provided with the struck-up portions 20 which are adapted to receive the flanges 5 and 15^a. The flared end portions 9 of the cover-strip 6 of the roof-plates above the door space fit over the portions 20 and rivets 20^a unite said flanges, portions 20 and cover-strip. These struck-up portions 20 thus fill up the flared end portions of the cover-strips and a strong construction is obtained. The Z-bar 15 with its downwardly projecting flanges 21 forms the upper guide-way for the door 22 which may be of any suitable construction, this door being provided with the ordinary hanger brackets 22^a with the rollers 23. These rollers 23 rest upon the Z-bar 24 which is riveted to brackets 25 arranged at intervals above the door opening. These brackets as indicated in Fig. 1 are U-shaped in construction and the flanges 26 are riveted to the Z-bar 15.

At the bottom of the door-way the floor-plates 27 are bent downwardly to form the flange 28 which is riveted between the outer plate 29 and the inner reinforcing plate 30, respectively, by the rivets 31. Flanges 29^a are formed in the ends of the plate 29 and said flanges are riveted to the flanges 5 of the side-plates. An angle-bar 32 extends longitudinally of the car and this angle-bar is secured between the plates 29 and 30 by rivets 33. The filling strip 34 is interposed between the inner and outer plates 30 and 29. A sill 35 is riveted to the floor-plate 27 by rivets 36 and is secured to the plates 29 and 30 by the rivets 37 which also hold the filling strip 34 in place and at the same time secure the bracket 38 in position which forms the guide for the lower end of the door 22.

To form one side-frame of the door opening a plate metal door post 41 is riveted by rivets 42 to the side-plate and is secured by rivets 43 to the flange 5 of said side-plate. The door 22 at that side abuts against the united flanges 40 and 44 of the post 41. At the opposite side the side-frame 46 is riveted to the flange 5 of the side-plate by means of the rivets 47. The outer portion of the frame 46 is connected to the flange 5 by the angle 48. In this way a strong and durable door frame is provided which will withstand the severe shocks and jolts to which such door frame may be subjected in operation.

What I claim is:

1. A metallic box-car comprising a plurality of side and roof-plates united together, outwardly extending flanges formed on said plates, cover-strips engaging the flanges of adjoining plates, fastening means uniting said flanges and cover-strips, the cover-strips of one set of plates overlapping the cover-strips of another set of plates.

2. A metallic box-car comprising a plurality of plates forming the sides and roof connected together, outwardly extending flanges formed on said plates, cover-strips engaging the flanges of adjoining plates, fastening means uniting said flanges and cover-strips, the ends of the cover-strip of one set of plates being flared and engaging the cover-strips of another set of plates.

3. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway and connected to the roof and side-plates.

4. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway and supported by the side and roof-plates, and a reinforcing bar secured to the inner face of said Z-bar.

5. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway and supported from the roof and side-plates of said car, and an angle-bar secured to the inner face of said Z-bar.

6. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway and supported from the roof and side-plates of said car, an angle-bar extending longitudinally of said Z-bar on the inner face thereof along the top and bottom thereof and secured to said Z-bar.

7. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway, flanges formed at the ends of said Z-bar, the side plates forming said doorway having outwardly extending flanges, and fastening means uniting the flanges of said Z-bar and the flanges of said side-plates.

8. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway, flanges formed at the end of said Z-bar, outwardly extending flanges on the side-plates forming said doorway, roof-plates having outwardly extending flanges, cover-strips engaging said flanges, and fastening means uniting said cover-strips and flanges, the ends of said cover-strips engaging the united flanges of said Z-bar and side-plates.

9. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway, flanges formed at the ends of said Z-bar, outwardly extending flanges on the side-plates forming said doorway, roof-plates having outwardly extending flanges, cover-strips engaging said flanges and secured thereto, said cover-strips having flared ends, angles secured to said Z-bar, said angles having struck-up portions to receive the flanges at the ends of said Z-bar and the flanges of the sideplates, the flared ends of the said cover-strip engaging said struck-up portions, and fastening means passing through said flared end portions,

said struck-up portions, the end flanges of said Z-bar and the flanges of said side-plates.

10. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway supported by the plates forming said car, brackets connected to said Z-bar, and a second Z-bar secured to said brackets and forming a track for the door-hanger.

11. A metallic box-car having a doorway formed therein, a Z-bar extending across the top of said doorway and supported by the plates forming said car, U-shaped brackets secured to said Z-bar, and a second Z-bar secured to said brackets forming a track for the door-hanger.

12. A metallic box-car having a doorway formed therein, a plate extending across the bottom of said doorway, flanges formed at the ends of said plate, side plates of the car forming said doorway having outwardly extending flanges, fastening means uniting said plate with the flanges of the side-plates, floor-plates having downwardly extending flanges, and fastening means uniting said plate to the flange of said floor-plate.

13. A metallic box-car having a doorway formed therein, a plate extending across the bottom of said doorway, flanges formed on the end of said plate, side-plates forming

said doorway having outwardly extending flanges, fastening means uniting the flanges of said plate with flanges of said side-plates, and the reinforcing plate on the inside of said plate.

14. A metallic box-car having a doorway formed therein, a plate extending across the bottom of said doorway, flanges formed on the ends of said plate, side-plates for the doorway having outwardly extending flanges, fastening means uniting said plate with the flanges of said side-plates and reinforcing plate, the floor-plate having a downwardly extending flange between said plate and said reinforcing plate, an angle-bar inserted between said plate and reinforcing plate at the lower end thereof, and fastening means uniting said parts together.

15. A metallic box-car having a doorway formed therein, a plate extending across the bottom of said doorway and secured to the side plates of the car, and a plate-metal sill secured to the floor-plate and to said plate.

In testimony whereof, I the said JOHN M. HANSEN have hereunto set my hand.

JOHN M. HANSEN.

Witnesses:

ROBERT C. TOTTEN,
J. F. WILL.