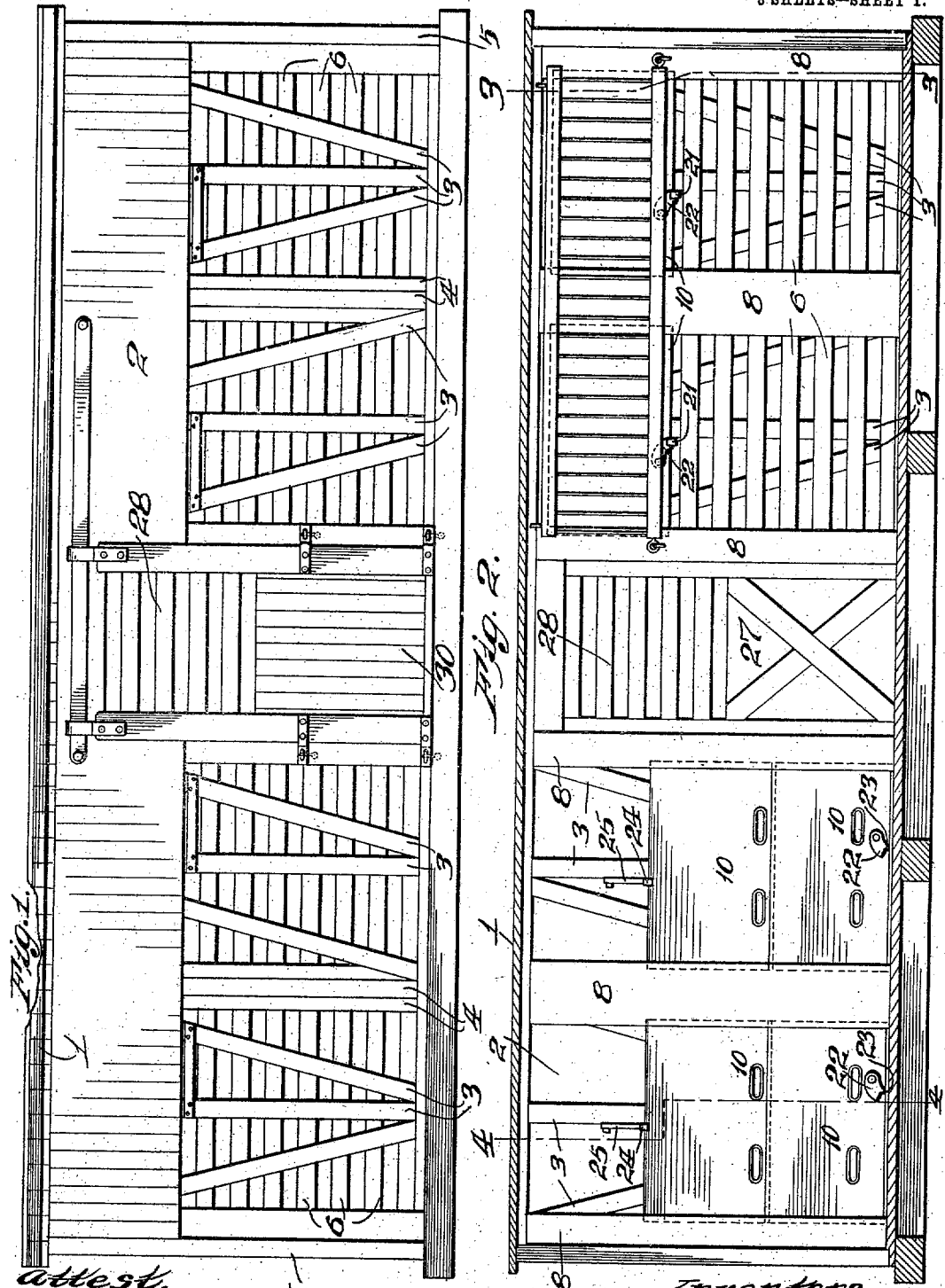


961,876.

Patented June 21, 1910.
 3 SHEETS—SHEET 1.



Attest.
 A. G. Fletcher.
 C. L. Haller.

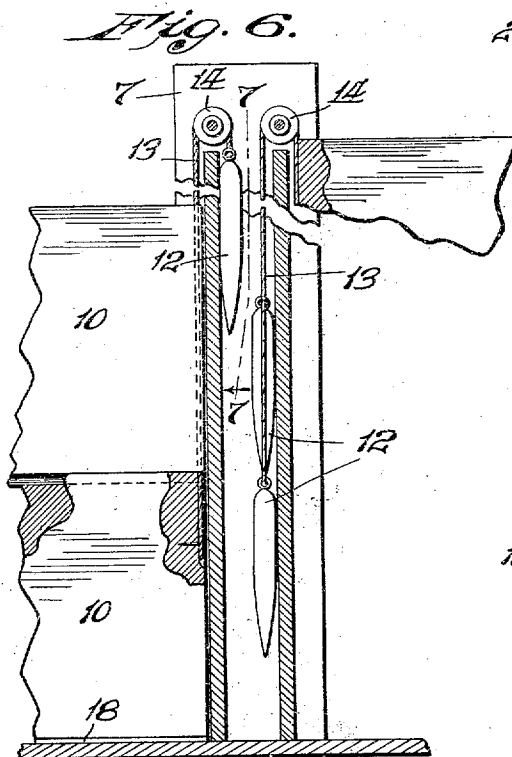
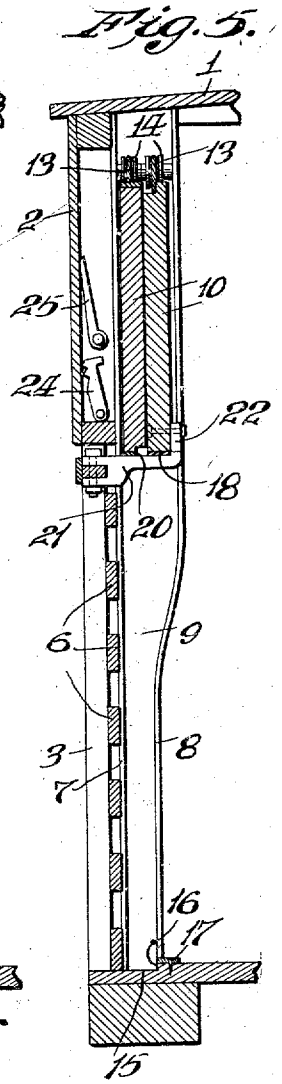
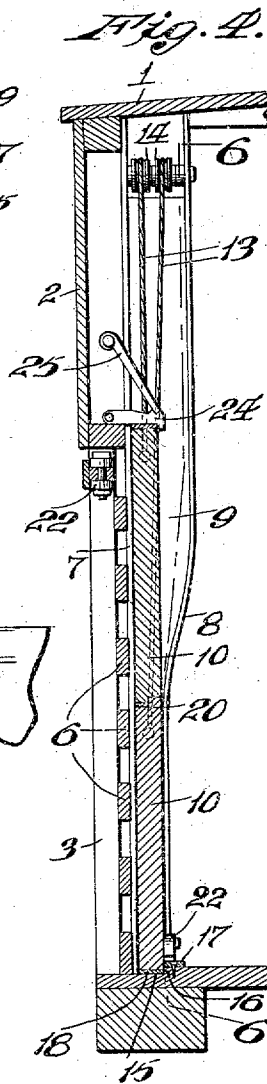
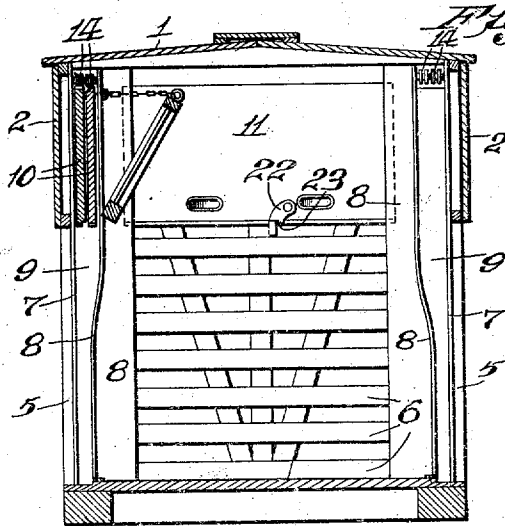
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J. J. METZ & A. MOSLEY.
 CONVERTIBLE CAR.
 APPLICATION FILED APR. 12, 1909.

961,876.

Patented June 21, 1910.

3 SHEETS—SHEET 2.



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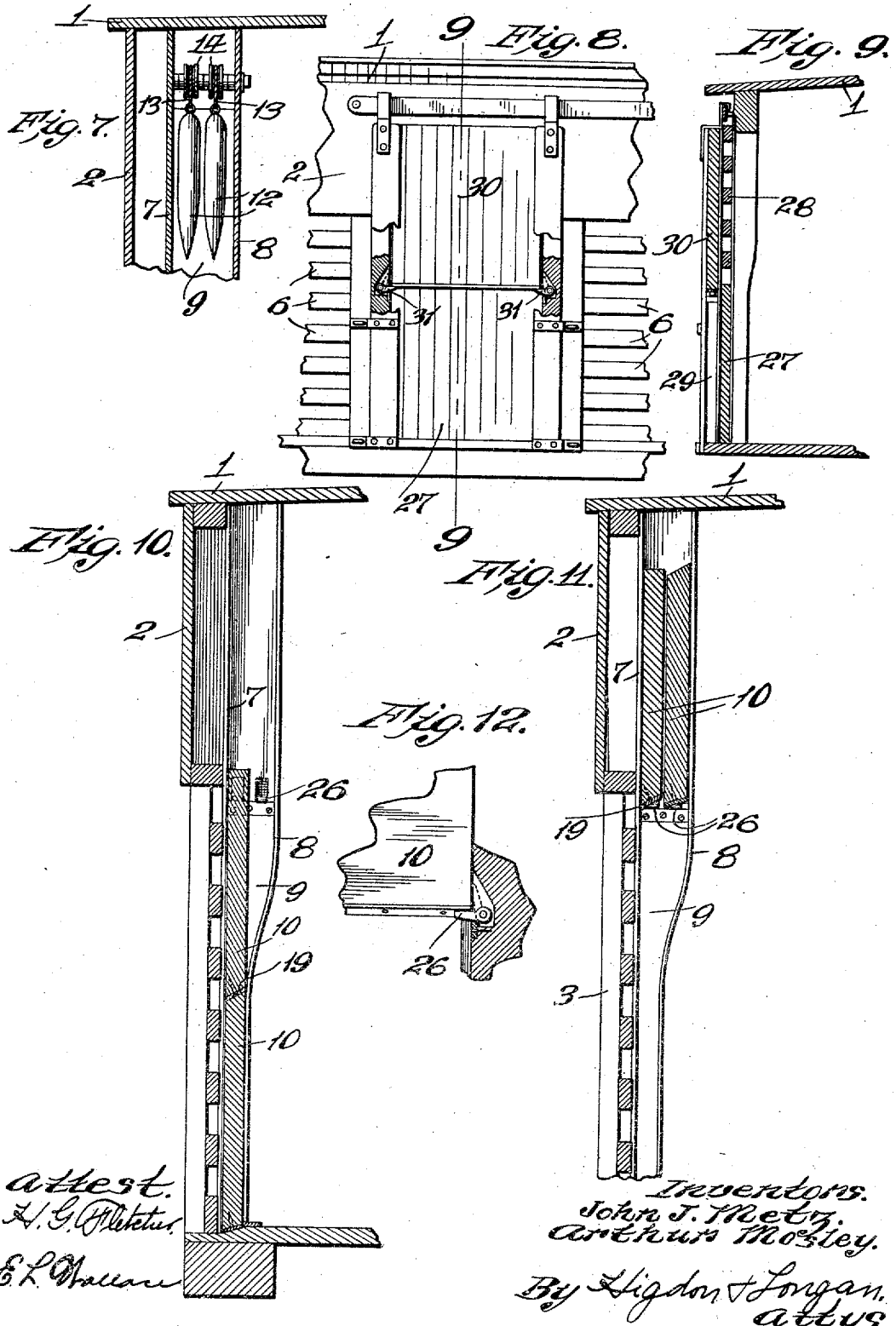
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APPLICATION FILED APR. 12, 1909.

Patented June 21, 1910.

961,876.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JOHN J. METZ AND ARTHUR MOSLEY, OF ST. LOUIS, MISSOURI.

CONVERTIBLE CAR.

961,876.

Specification of Letters Patent. Patented June 21, 1910.

Application filed April 12, 1909. Serial No. 489,512.

To all whom it may concern:

Be it known that we, JOHN J. METZ and ARTHUR MOSLEY, citizens of the United States, and residents of St. Louis, Missouri, have invented certain new and useful Improvements in Convertible Cars, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates generally to improvements in convertible cars, the principal object of our invention being to construct a car which may be converted either into a box car for the shipping of merchandise, etc., or which may be converted into a stock car for the shipping of stock, etc.

To the above purposes, our 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 an outside elevation of one side of the car; Fig. 2 is a view showing the inside construction of one side of the car; Fig. 3 is a sectional view showing the inside of one end of the car and taken on the line 3—3 of Fig. 2; Fig. 4 is a section taken on the line 4—4 of Fig. 2 and in this view the sliding doors which are employed are shown down; Fig. 5 is a similar view showing said doors in an elevated position; Fig. 6 is a section taken approximately on the line 6—6 of Fig. 4; Fig. 7 is a detailed sectional view showing the weights which are employed for the doors; Fig. 8 is an outside elevation, partly in section, of the door which may be employed on our invention; Fig. 9 is a section taken on the line 9—9 of Fig. 8; Fig. 10 is a vertical section of a modified form of the side of the car wherein the doors are closed; Fig. 11 is a similar view where the doors are elevated; and Fig. 12 is a detailed view, partly in section, of the catch which holds the doors elevated in the modified construction.

As heretofore stated, our object is to construct a car body which may be used as a stock car, and which car may be converted into a box car for the purpose of shipping merchandise, etc. The improvements especially relate to an improved construction in the ends of the car, in the car door and a

slight modification of the car bottom, which enables the ready conversion of the car either into a box car or into a stock car.

Referring by numerals to the accompanying drawings, and in Fig. 1 where we have shown an outside elevation of one side of the car, 1 indicates the roof, which may be formed of any suitable construction.

2 indicates the upper portion of the side of the car, which is boxed in for practically a third of the side of the car. This portion of the side of the car is boxed in in any suitable manner. The side framing of the side of the car may be made in any suitable manner, and we have shown the side framing composed of the bracing timbers 3, the vertically disposed upright timbers 4, and corner posts 5.

The lower portion of the side of the car, or about two-thirds of the side of the car, is an open construction which is constructed by using the horizontal strips 6, spaced apart. These side strips are properly secured to the upright frame timbers, and the lower portion of the car body, including the ends and sides thus constructed, will present the appearance as illustrated in Figs. 1 and 3.

Secured to the vertical side frame timbers 4 and to the corner posts 5 are metal guide strips 7. These guide strips extend from the floor of the car almost to the roof. Secured to the inside of the timbers 4 and to the corner posts are metal guide strips 8. The metal guide strips 7 and 8 are spaced apart so as to form guide ways 9. It will be seen that these guide-ways are of greater width at the top than at the bottom, and the function of these guide-ways will be hereinafter more fully described.

10 indicates vertically sliding doors, by means of which the open lattice-work of the sides and ends of the car is closed.

In the construction which we have shown, we have provided for eight vertically sliding doors arranged in pairs, two pairs being on each side of the door opening in the side of the car, and the ends of the cars are closed by similar sliding doors 11; that is to say, we employ two sliding doors for each end of the car, and eight for each side of the car. The ends of these sliding doors are located in the passage-ways 9 formed by the guide-strips 7 and 8.

In our preferred construction, we employ

weights 12 for these sliding doors. These weights are secured to the sliding doors by means of weight cords 13, passing over pulleys 14, one end of said weight cords being attached to the weights 12 and the other end to the doors. These weights are employed for the usual purpose of assisting in the elevation of the doors, and we make use of one weight on each end of each sliding door, and as the space for the weights is comparatively small, we have constructed a special form of weight, such as 12. These weights are tapering, so that they may readily pass each other. In some cases we may not use weights, in which cases we elevate the doors solely by hand. In the illustrations in Figs. 3, 4, 5, 6 and 7 we have shown the weight construction for the doors.

The floor of the car is of the usual construction, except along the sides a depression 15 is formed and a shoulder 16, and adjacent said shoulder we make use of a metal protection strip 17, behind which the lowermost one of the doors rests when said door is in its closed position.

The bottom one of each of the doors is provided with a wearing strip 18. The meeting edges of the doors when they are closed may be provided with beveled faces, such as 19, as illustrated in Figs. 10 and 11, or they may be provided with a lap joint 20, as illustrated in Figs. 4 and 5, it only being necessary that the joints shall be as tight as possible when the doors are closed.

In order to hold the doors in an elevated position, as illustrated in Fig. 5, that is to say, the doors provided with weights, we secure to the framework of the sides of the car a pivoted dog 21. Said dog is adapted to be swung outwardly out of the path of the doors so that the same may be elevated, and when said doors have been elevated and lie side by side, as illustrated in Fig. 5, this dog is swung under the lower edge of said doors and holds them in an upright position. The pivoted movement of said dog is limited in one direction by means of the upright framing timbers, and in order to keep said dog from working out from under the doors by the vibration of the car, we secure to the bottom of each door a pivoted dog 22, and said pivoted dog 22 has a shoulder 23.

When the dog 21 has been positioned beneath the lower edges of the doors when they are in an elevated position, one of the upright framing timbers of the sides and ends of the car will prevent said dog from moving in one direction, and the pivoted dog 22, with its shoulder 23, will prevent said dog 21 from moving in an opposite direction. From this construction, the dog 21, which supports the doors in their elevated position, is prevented from being displaced from beneath the lower edges of the doors by the vibration of the car.

In order to hold the doors closed, as illustrated in Fig. 4, we secure to one of the upright framing timbers a pivoted dog 24, and above said dog 24 a pivoted pawl 25. The lower end of said pawl is adapted to engage with a notch on the upper face of the pivoted dog 24. In Fig. 5 we have shown the pivoted dog 24 and the pawl 25 in an elevated position so that the doors may be elevated, and in Fig. 4 we have shown the doors closed and the pivoted dog 24 and pawl 25 in the proper position to hold said doors in a closed position.

The object in having the guide-ways wherein the doors are located and moved wider at the top than at the bottom is to permit said doors to pass each other and lie side by side when they are in an elevated position. In other words, the lower portion of said guide-ways is about the width of the thickness of the door, and the upper portion of said guide-ways is about the width of the thickness of both doors when lying side by side. When the doors are closed the lower edge of the lowermost door passes behind the metal strip 17, virtually making a water-tight joint.

In the construction where we do not employ weights for assisting in the elevation of the doors, the doors are held in their elevated position by means of pivoted dogs, such as 26, mounted on the framework of the car or in the guide-ways. In Fig. 12 we have shown the pivoted dog 26 in engagement with the lowermost one of the doors, and to release the same for the closing of the doors it is only necessary to elevate said door and push the dog out of the path of travel of the door.

In the carrying out of our invention, we also make use of a specially constructed car door, the same being illustrated in Figs. 8 and 9. Said door is of the sliding type, the bottom half, 27, being closed, and the upper half, 28, being open-work, said door being provided with vertical guide-ways 29 on each of its vertical sides, and located in said guide-ways and adapted to move up and down so as to open and close the upper portion of the door, is a closed door section 30. In order to make a closed door, this section 30 is elevated, as illustrated in Figs. 8 and 9, and said section 30 is held in its elevated position by means of pivoted dogs 31 carried by the door. These dogs may be moved out of the path of travel of the door section 30 so as to permit the lowering or elevating of said section, and when said section is elevated they engage the lower edge of said section, as illustrated in Fig. 8.

The operation of our invention, briefly stated, is as follows: When the car has been constructed as heretofore described, if it is desired to ship live stock, all the sliding doors carried by the sides and ends of the

car are elevated, as illustrated in Figs. 1 and 5, and the door section 30 is lowered. This will virtually convert the car into a stock car with the proper ventilation. If it is desired to convert the car into a box car, the operation is reversed; that is to say, the sliding doors carried by the sides and ends of the car are lowered and locked down by the means heretofore described, and the door section 30 is elevated. When the doors have been moved into this position, a car is formed complying with all the substantial requirements of a box car for the purpose of shipping merchandise, etc.

A car of the type of our invention costs very little more, if any, in its construction than an ordinary box car or a stock car, and when so constructed has the double advantage in that the same car may be used for the shipment of live stock and easily converted into a box car for the shipment of merchandise.

We claim:

1. A car, having a portion of its sides and ends boxed in, the remaining portion of its sides and ends constructed of open-work, sliding doors independently mounted in passage-ways of varying widths carried by the sides and ends of the car for the closing in of the open-work of the sides and ends, means for holding said doors in an elevated position, and means for locking said doors in a closed position.

2. A car having a portion of its sides and ends boxed in, the remaining portion of its sides and ends constructed of open-work, sliding doors independently mounted in passage-ways of varying widths arranged along the sides and ends of the car for the closing in of the open-work in the sides and ends, means for holding said doors in an elevated position, and means for locking said doors in a closed position.

3. A car, having a portion of its sides and ends boxed in, the remaining portion of its sides and ends constructed of open-work, sliding doors independently mounted in passage-ways of varying widths arranged at intervals along the sides and ends of the car for the closing in of the open-work in the sides and ends, a pivoted dog for holding said doors in an elevated position, and

a pivoted dog for holding said doors in a closed position.

4. A car of the class described, having a portion of its sides and ends closed in and the remaining portion constructed of open-work, a roof for said car, a floor provided with longitudinal recesses along its sides, guide-ways of varying widths carried by the sides and ends of said car, independent sliding doors positioned in said guide-ways for closing and opening the open portions of said sides and ends, means for holding said sliding doors side by side in an elevated position, and means for locking the said doors in a closed position.

5. A car of the class described, having a portion of its sides and ends closed in and the remaining portion constructed of open-work, a roof for said car, a floor provided with longitudinal recesses along its sides, guide-ways carried by the sides and ends of said car, independent sliding doors positioned in said guide-ways for closing and opening the open portions of said sides and ends, means for holding said sliding doors side by side in an elevated position, means for locking said doors in a closed position, said guide-ways being widest at their upper ends to hold two doors in their elevated positions.

6. A car having a portion of its sides boxed in, the remaining portion of its sides constructed of open-work, sliding doors independently suspended and mounted in passage-ways carried by the sides of the car for the closing in of the open-work of the sides, means for holding said doors side by side in elevated position and means for locking said doors in closed position the upper end of each of the passage-ways being of a width sufficient to hold two doors and the lower end being of a width sufficient to receive one door only.

In testimony whereof, we have signed our names to this specification, in presence of two subscribing witnesses.

JOHN J. METZ.
ARTHUR MOSLEY.

Witnesses:

E. E. LONGAN,
E. L. WALLACE.