

S. OTIS.

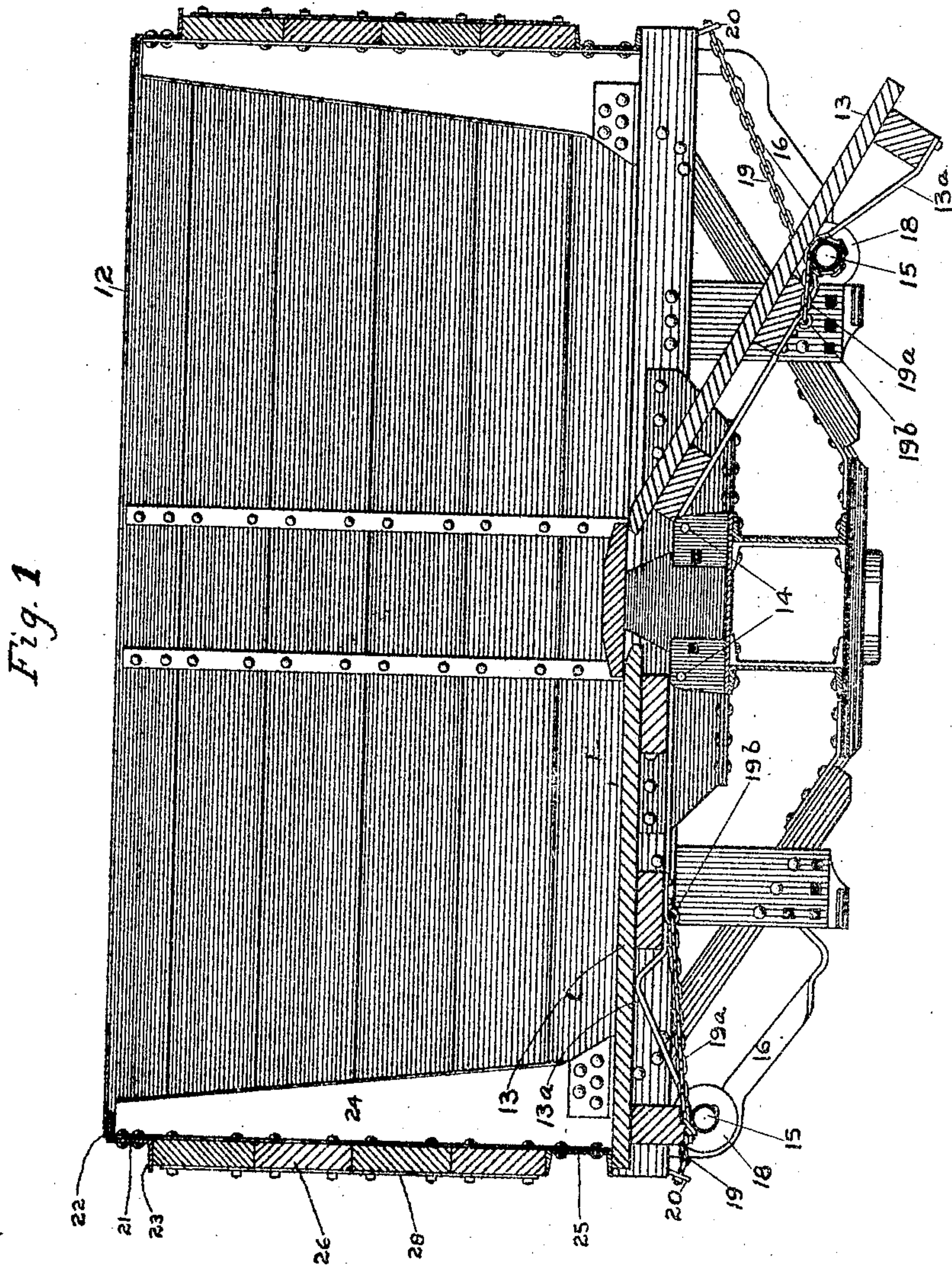
RAILWAY CAR.

APPLICATION FILED SEPT. 6, 1907.

917,114.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.



Witnesses:

Grace McLaughlin

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Spencer Otis

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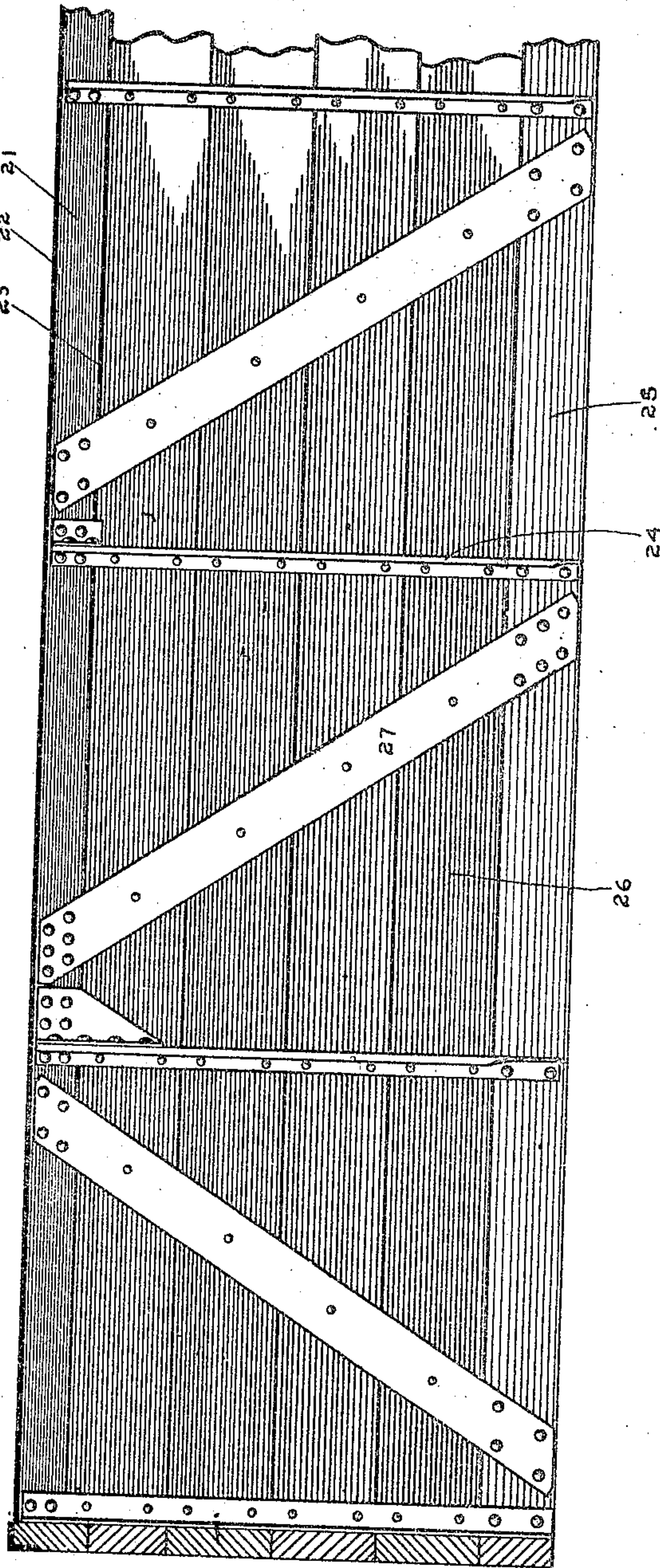
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3 SHEETS—SHEET 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

SPENCER OTIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL DUMP CAR COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF MAINE.

RAILWAY-CAR.

No. 917,114.

Specification of Letters Patent.

Patented April 6, 1909.

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To all whom it may concern:

Be it known that I, SPENCER OTIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

My invention relates to railway cars and more particularly to dump cars.

One of my objects is to provide an improved mechanism for operating and controlling dump car doors.

Another object is to provide an improved side frame for cars.

In the accompanying drawings—Figure 1 represents a cross-section of my improved car; and Fig. 2 is an inside elevation of a side frame, with the side wall attached thereto.

The car body 12 has dumping doors 13 pivotally attached thereto at 14. Each dumping door 13 has on its under side a track 13^a which rests on a roller 15, and this roller in turn rests on a fixed track 16. A chain 19 has one end attached to a fixed point 20 and the other end wrapped about the drum 18 on the roller 15. Another chain 19^a has one end attached to the door at the point 19^b and its remaining end wrapped about the roller or the shaft 15.

At the top of the side wall is a horizontal Z-bar comprising the web 21 and the flanges 22 and 23. This is supported by the side stakes 24, the web 21 being riveted thereto. At the bottom of the side frame there extends a horizontal channel bar 25 having its web riveted to the side stakes 24. The boards of the side wall 26 are bolted to the side stakes 24, and to the inclined members 27 which have their ends riveted to the top and bottom flanged members 21 and 25. These inclined members 27 constitute a part of the side frame, and are inside the side walls 26. Metal cleats 28 are on the outside of the side walls opposite to the respective side stakes 24.

If the shaft 15, shown at the right of the drawing, be rotated in a counter-clockwise direction it will wind the chain 19 thereon, at the same time unwinding the chain 19^a. It will thus move to the right sliding up the inclined track 16, rolling along the opposed track 13^a and thereby closing the door 13. When closed the chain 19 will be almost completely wrapped about the drum 18, while the chain 19^a will be nearly unwrapped from the shaft 15. When in this state, rotation in a

direction opposite to that described will start the shaft 15 down the track 16 and permit the door to open. I have not disclosed mechanism for rotating the shaft 15, for that forms no part of my present invention and is well-known to those familiar with the art here involved.

Among the advantages of the specific type of door-controlling mechanism herein disclosed, I wish to call attention to the freedom from complications due to dirt or debris falling on the chains 19 and 19^a. It will be noted that such dirt falls on that side of the chains which naturally winds outwardly on the roller 15, and that it is then free to fall off. On the other hand, if the chains were wound on the roller 15 in the opposite directions to those shown, then the dirt would fall in between the chain and the roller, and would thus necessitate the cleaning of the chain before further operation of the device.

My improved side frame has great strength for the weight of material employed in its manufacture. The Z-bar at the top is subjected to a compression stress, and the aggregate width of the flanges effectively opposes the tendency to lateral buckling.

My improved construction constitutes a trussed side capable of carrying practically all of the load of the car and so constructed as to present the maximum resistance to buckling. In the car illustrated, the center sill serves principally as a means of taking care of the buffing and draft strains, reliance being placed principally upon the side trusses for carrying the load. This being the case, it is of the utmost importance to provide against the sides becoming buckled by side thrusts due to accident or other causes. The strength of the side truss becomes seriously impaired as soon as it becomes distorted from the plane in which it is built. The Z-bar at the top of the side—as illustrated and claimed—provides an effective resistance against buckling, its flanges being placed in horizontal planes.

I claim:

1. In door operating mechanism, a roller on a track, two oppositely wound chains attached to the roller and extending therefrom on the side of the roller toward the door.

2. In a door operating mechanism, a roller on a track, two oppositely wound chains attached to the roller and extending therefrom on the side of the roller toward the

door, one of said chains being also attached to the door.

3. In a car, a side frame comprising side stakes, a side wall, and a flanged member along the top of the side frame, one flange thereof extending over the side wall and another flange extending over the top ends of the side stakes.

4. In a car, a side frame comprising side stakes, a Z-bar having its web attached to the sides of the stakes with one flange extending over the tops thereof, and a side wall under the other flange.

5. In a car, a trussed side frame comprising a top Z-bar with its web in a vertical plane, side stakes with their top ends riveted to the web of the Z-bar, a tie-member connecting the lower parts of the side stakes, and inclined braces extending between the Z-bar and the tie-member.

6. In a car, a trussed side frame comprising a top Z-bar with its web in a vertical plane, side stakes having their upper parts

attached to the Z-bar, a tie-member connecting the lower parts of the side stakes, and inclined braces within the side frame.

7. In a car, a trussed side frame comprising a top Z-bar with its web in a vertical plane, side stakes having their upper parts attached to the Z-bar, a channel bar attached to the lower parts of the side stakes, and inclined braces within the side frame.

8. In a car, a side frame, comprising a Z-bar having its web in a vertical plane and its flanges horizontal, a lower channel member, side stakes and diagonal braces secured to the webs of said Z-bar and channel, side planks secured to the outer side of said stakes and braces, said planks lying between the lower flange of said Z-bar and the upper flange of said channel.

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Witnesses:

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