No. 680,943. Patented Aug. 20, 1901.

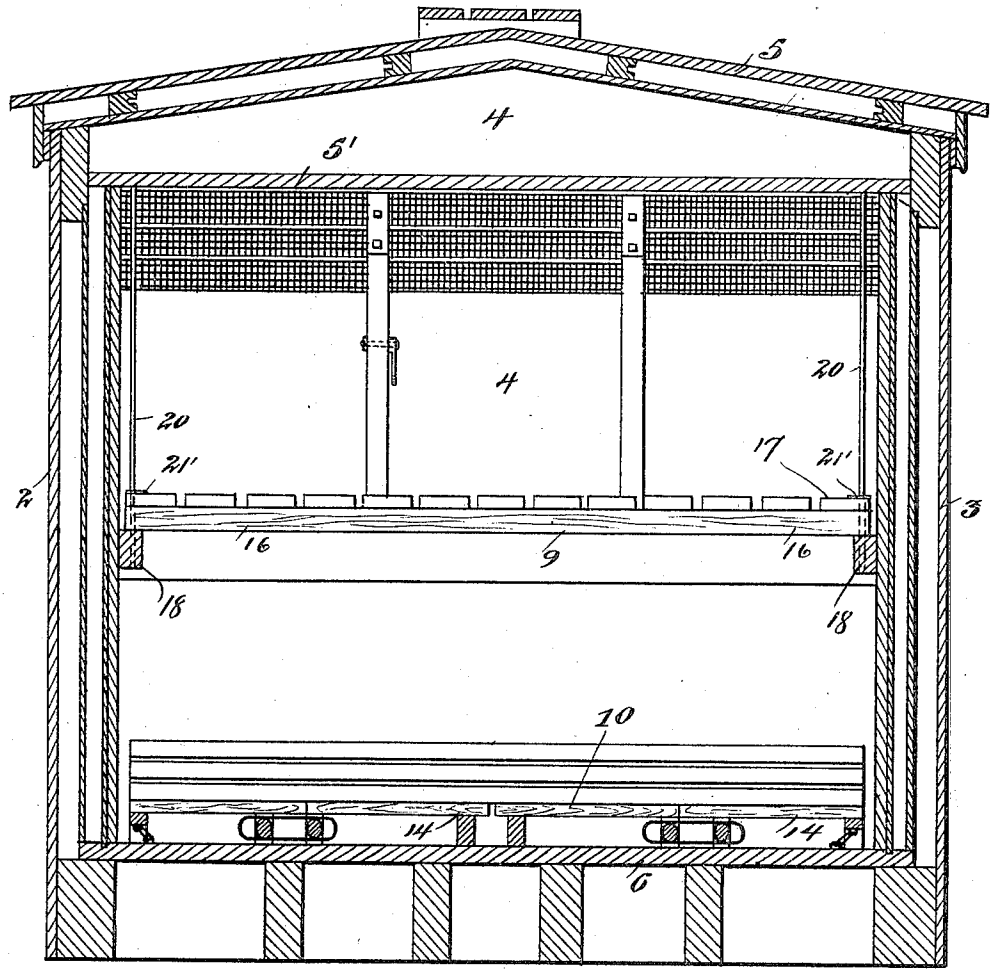
W. E. SHARP.

DOUBLE DECK CAR.

(Application filed Apr. 15, 1901.)

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Fig. 1.



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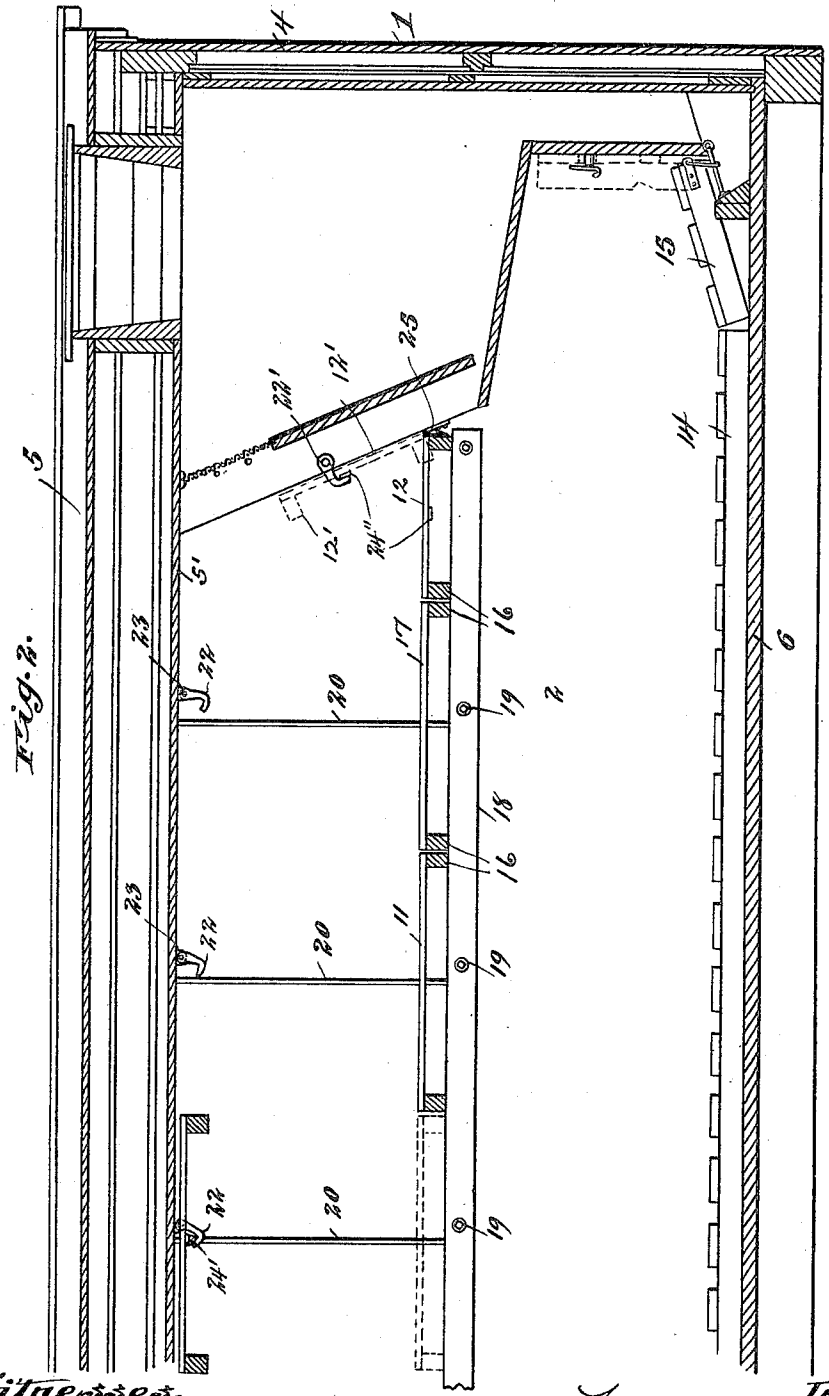


Fig. 2.

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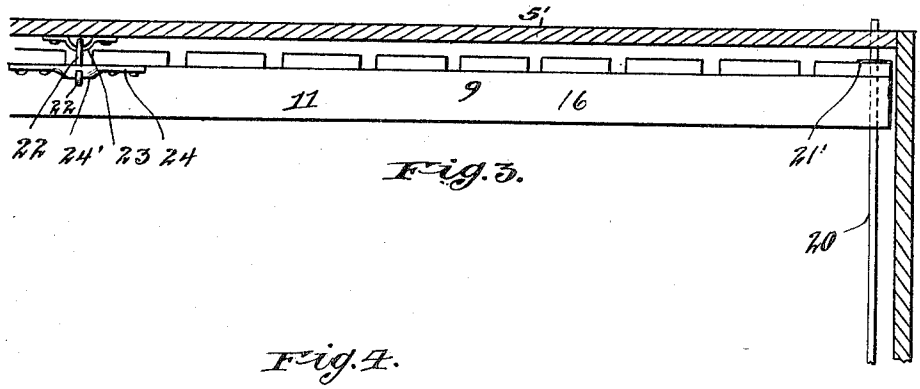
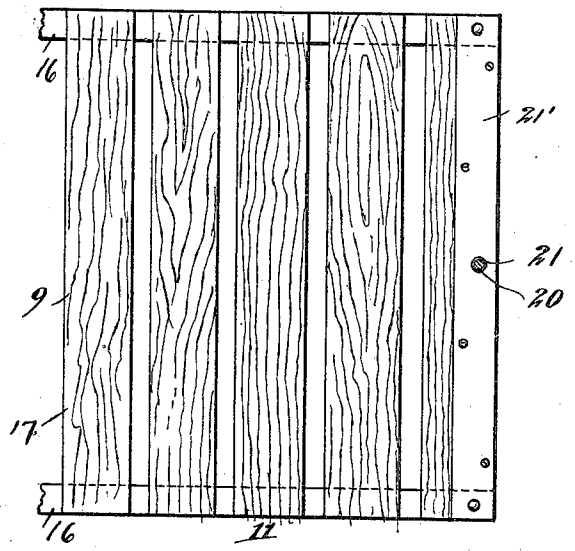
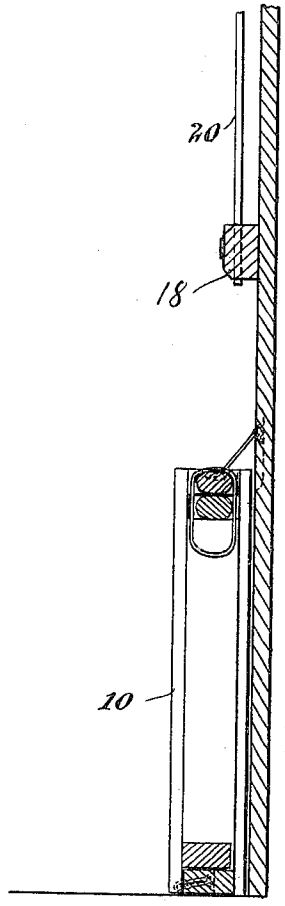


Fig. 3.

Fig. 4.





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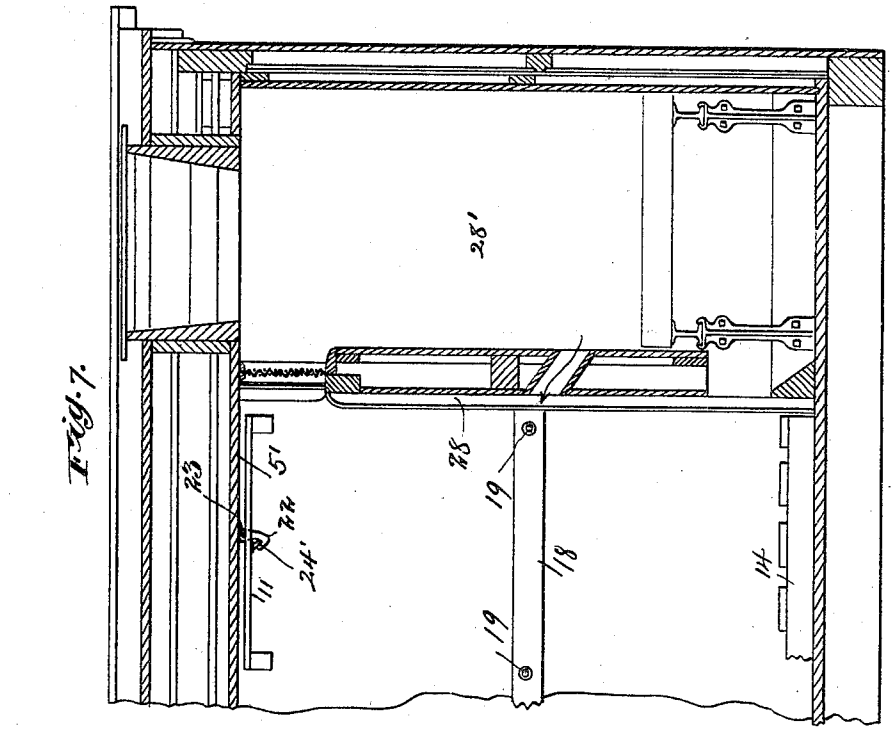


Fig. 7.

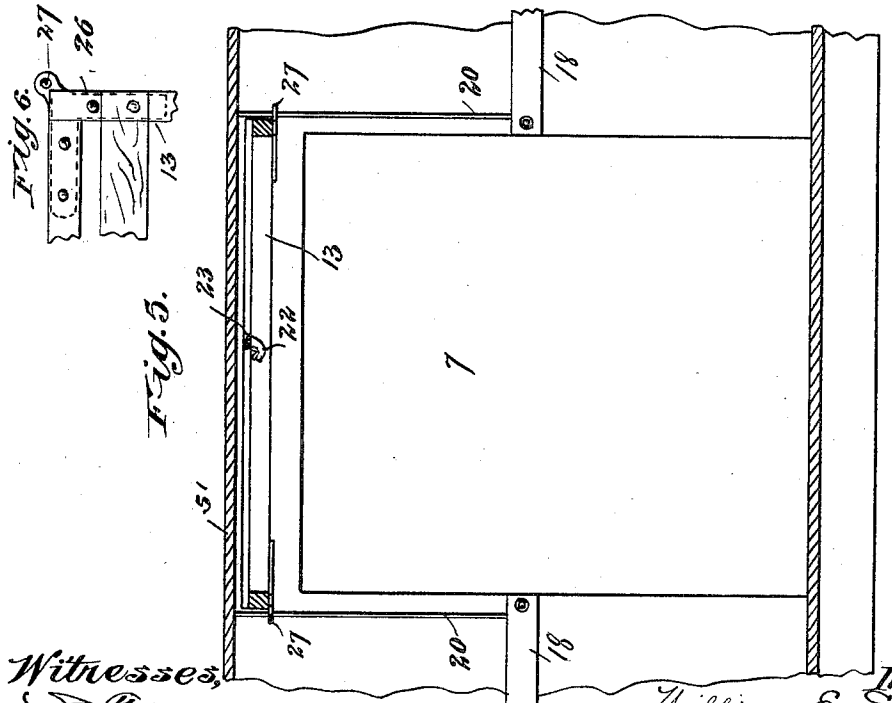


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM E. SHARP, OF CHICAGO, ILLINOIS, ASSIGNOR TO ARMOUR & COMPANY, OF SAME PLACE.

DOUBLE-DECK CAR.

SPECIFICATION forming part of Letters Patent No. 680,943, dated August 20, 1901.

Application filed April 15, 1901. Serial No. 55,964. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SHARP, of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Double-Deck Cars, of which the following is a specification.

This invention relates to improvements in freight-cars, and refers more specifically to improvements in collapsible racks or floor-sections for use in such cars.

The object of the invention is to provide for a car, which may be of ordinary construction, two series of collapsible racks, one series for the floor of the car and a second series supported to form an intermediate floor or double deck, the sections of each series being so constructed that they may be shifted out of the way and stored within the car when not in use without occupying more than an insignificant amount of space, in which stored position the sections are safely and securely fastened.

To this end the convention consists in the matters hereinafter described and particularly pointed out in the appended claims, and will readily be understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse vertical sectional view taken through the body of a car and showing the arrangement of the rack-sections therein. Fig. 2 is a central longitudinal sectional view taken through an end portion of the same car. Fig. 3 is a fragmentary transverse sectional view showing the racks in their stored positions. Fig. 4 is a plan view of a portion of one of the rack-sections. Fig. 5 is a fragmentary longitudinal sectional view showing the construction and arrangement of the rack-sections located opposite the side doors of the car. Fig. 6 is a fragmentary detail in plan view of one corner of the central upper deck-section, and Fig. 7 is a central longitudinal sectional view of one end of a car of different construction from that shown in Fig. 2.

As will be obvious from the following description, the present invention is not limited to any particular type of freight-car, these rack-sections and their mountings being suitable for use either in refrigerator-cars or in any ordinary freight-car, although certain specific features are capable of use only in a refrigerator-car of the type herein illustrated in Figs. 1 to 6, inclusive.

Referring to the drawings, 1 designates as a whole the body of a closed car, comprising side walls 2 3, respectively, end walls 4, roof 5, and the usual floor 6.

7, Fig. 5, designates the usual side door, of which there are commonly two, arranged opposite each other at points midway of the length of the car.

9 and 10 respectively designate as a whole the two series of racks or floor-sections, the individual ones of the upper series being designated 11, 12, and 13, respectively, while the individual ones of the lower series are designated 14 and 15, respectively.

It may be stated at this point that the lower series of rack-sections 10 are constructed and arranged substantially in accordance with the construction described in Letters Patent granted to T. B. Kirby October 21, 1900, No. 656,462, to which patent reference is made for a more detailed description of the same, such description being omitted herein, inasmuch as the construction and arrangement of said rack-sections *per se* form no part of the present invention.

Describing in detail the construction and arrangement of the upper series of rack-sections, it will be understood that while the sections are herein shown as of open or slatted construction, suitable for shipment of such products as require circulation of air through the car, yet said sections may nevertheless be equally within the scope of the invention constructed with close joints, so as to constitute a practically continuous floor when in operative position. Each rack-section, as 11 12 13, is made of a length to extend entirely across the width of the interior of the car and is preferably made considerably narrower, measured lengthwise of the car, in order that the sections may be more conveniently manipulated, as will hereinafter appear. In the preferred construction shown each section comprises a pair of longitudinal supports 16, one adjacent to each side margin of the section, across which are secured at regular intervals a series of slats or strips

17, forming the supporting-floor of the rack. The rack-sections 11 occupy the main length of the car and are preferably made of uniform size and construction, so as to be interchangeable, while the rack-section 12 is made somewhat narrower (see Fig. 2) for a purpose which will hereinafter appear, and the rack-sections 13, which occupy a position opposite the side door 7, is made of full width of said doors.

18 18 designate a pair of side supports secured against the respective side walls of the car midway of the height of the latter and arranged to extend from one end of the car to a point adjacent to the refrigerator occupying the opposite end of the car, except for the interruptions at the side-door openings. These longitudinal supports may be rigidly secured to the side walls in any suitable manner—as, for example, by means of bolts 19—and form ledges upon the upper edges of which the ends of the rack-sections rest, as indicated clearly in Fig. 1.

20 designates a series of guide-rods arranged to extend from the ceiling 5′ of the car vertically downward to and preferably through the longitudinal supports 18, said guide-rods being arranged in pairs laterally opposite each other, the individual members of each pair, respectively, passing through the central portions of the ends of the rack-section located opposite thereto. The two end slats of each rack-section are so located that the guide-rods 20 extend through the same, suitable guide-apertures 21 being provided to accommodate said rods, as best shown in Fig. 4, and in order that said end slats may be amply strong and to prevent undue wear of the guide-apertures 21 therein they are desirably, and as herein shown, provided with reinforcing or surface plates 21′, suitably bolted to their upper surfaces, as best indicated in Figs. 1 and 4.

The pairs of guide-rods 20 obviously serve to guide the rack-sections when the latter are lifted vertically upwardly to a definite position against the ceiling of the car, and means are provided for locking the several rack-sections in such stored position, constructed and arranged in the present instance as follows: 22 designates a series of hooks, one for each rack-section, mounted upon the ceiling of the car conveniently by means of staple-plates 23, (see Fig. 3,) suitably bolted to the ceiling and serving to attach the hooks to the ceiling pivotally.

24 designates catch-plates, one of which is provided upon the under side of each rack-section in position to register with and be engaged by the corresponding hook 22. As a convenient construction said catch-plates are made of strap or bar metal of sufficient length to reach across portions of the two adjoining slats of the rack and suitably bolted to the same, the intermediate portion 24′ of the catch-plate, which bridges the space between the adjoining slats, being twisted downwardly at one edge out of the main plane of the strap, so as to stand obliquely, as best shown in Fig. 2, in position for firm engagement with the hook 22. The hook 22 when the rack is lifted into proximity to the ceiling extends down through the opening between the adjacent slats and is hooked beneath the catch portion 24′ of the catch-plate, as indicated in Figs. 2 and 3. In the case of said section 12, adjacent to the refrigerator-tank, by reason of the overhanging construction of the refrigerator-tank the guide-rods 20 are dispensed with and the rack-section hinged at its lateral edge to the structure of the refrigerator-tank, as indicated at 25. When it is to be stored, it is simply tilted up against the side of the tank into the position indicated in dotted lines at 12′ in Fig. 2 and is secured in this position by means of a pivoted hook 22′, which engages a latch-bar 24″, secured to the under side of the rack in a manner substantially like that described in connection with the racks 11.

In the case of the middle rack-section 13, which is supported opposite the side-door openings, in order that the guide-rods may be so placed as not to interfere with the said door-openings, two pairs are provided, respectively arranged to extend through the corner portions of the said section, and inasmuch as it is desirable that this section be no wider than is necessary to enable the guide-rods to be located at each side of the respective door-openings guide-plates 26 are secured to each of the four corners of the rack, each guide-plate consisting of an angular casting or forging (see detail Fig. 6) adapted to be bolted to the under side of the rack and provided at its exterior angle with an eye 27, through which the corresponding guide-rod 20 extends. This central rack-section 13 is provided with a hook and latch plate in all respects like that described in connection with the racks 11.

When it is desired to use the intermediate deck, the several rack-sections which form the latter are severally disengaged from their respective hook and lowered into position, and vice versa. When they are not required for use, they are stored by being elevated and fastened up by their several hooks in the manner hereinbefore clearly described. The use of the lower set of rack-sections is clearly set forth in said prior patent referred to and need not therefore be detailed herein.

In Fig. 7 is shown a modified construction of a car in which the refrigerator-tank has a substantially vertical inner side wall 28 extending from near the ceiling to the floor of the car and separating the refrigerator-space 28′ from the interior of the car. In this instance, therefore, the hinged rack-section 12 is dispensed with, since the rack-sections 11 may be extended back entirely to the said wall 28, and likewise the hinged section 15 of the lower set of rack-sections is omitted for the same reason. In other respects the con-

struction is substantially like that hereinbefore described in connection with the preceding figures and need not therefore be enlarged upon. Obviously where these rack-sections are used with a car which is unprovided with a refrigerator-tank the supporting-rails and series of rack-sections will be extended to the end of the car, and the construction of said rack-sections and their supports may in such cases be substantially that shown in Fig. 7. It will be understood from the foregoing description that I attain the object of my invention and provide a simple, cheaply-constructed, and durable attachment which may be applied to most cars of ordinary construction without substantial change in the construction of the cars. It will be further understood that the details may be modified to some extent without departing from the spirit of the invention, and I do not therefore wish to be limited to the exact details described, except to the extent that they are made the subject of specific claims.

I claim as my invention—

1. An attachment for cars, a double-deck apparatus comprising horizontal longitudinally-extending supporting-bars arranged at opposite sides of the car and upon both sides of the side openings thereof, a series of rack-sections adapted to be supported upon said bars, each comprising longitudinal stringers arranged to extend transversely from one support to another, and a series of cross-slats secured to said longitudinal stringers, a series of guide-rods extending from said supporting-bars vertically up and secured to the ceiling of the car, a pair for each individual rack-section, with which pairs of guide-rods the respective rack-sections are slidingly engaged, a suspension-hook mounted upon the ceiling of the car vertically above each rack-section, a catch-plate adapted to engage and hold the rack-section in proximity to the ceiling, and a similar rack-section located opposite the side-door openings of the car provided with parts arranged to project laterally to overlap the side margins of said openings and engage said horizontal supporting-bars at each side thereof, a vertical guide-rod located at each of the several corners of said rack-sections and extending from the supporting-bar upwardly to the ceiling of the car, and means for holding said rack-section in elevated position, substantially as described.

2. As an attachment for cars, a double-deck apparatus comprising horizontal longitudinally-extending supporting-bars arranged at opposite sides of the car and upon both sides of the side openings thereof, a series of rack-sections adapted to be supported upon said bars, each comprising longitudinal stringers arranged to extend transversely from one support to another, and a series of cross-slats secured to said longitudinal stringers, a series of guide-rods extending from said supporting-bars vertically up and secured to the ceiling of the car, a pair for each individual rack-section, with which pairs of guide-rods the respective rack-sections are slidingly engaged, a suspension-hook mounted upon the ceiling of the car vertically above each rack-section, a catch-plate mounted upon each rack-section, with which its corresponding suspension-hook is adapted to engage and whereby the rack-section is held in proximity to the ceiling, and a similar rack-section located opposite the side-door openings of the car, of a sufficiently greater width than the width of said openings to overlap the side margin of said openings, and rest upon said horizontal supporting-bars at each side of the door, a vertical guide-rod located at each one of the four corners of said rack-section and extending from the supporting-bar upwardly to the ceiling of the car, and an angle-plate secured upon each corner of said rack-section and operatively engaged with the respective guide-rod, substantially as described.

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Witnesses:

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