

No. 656,462.

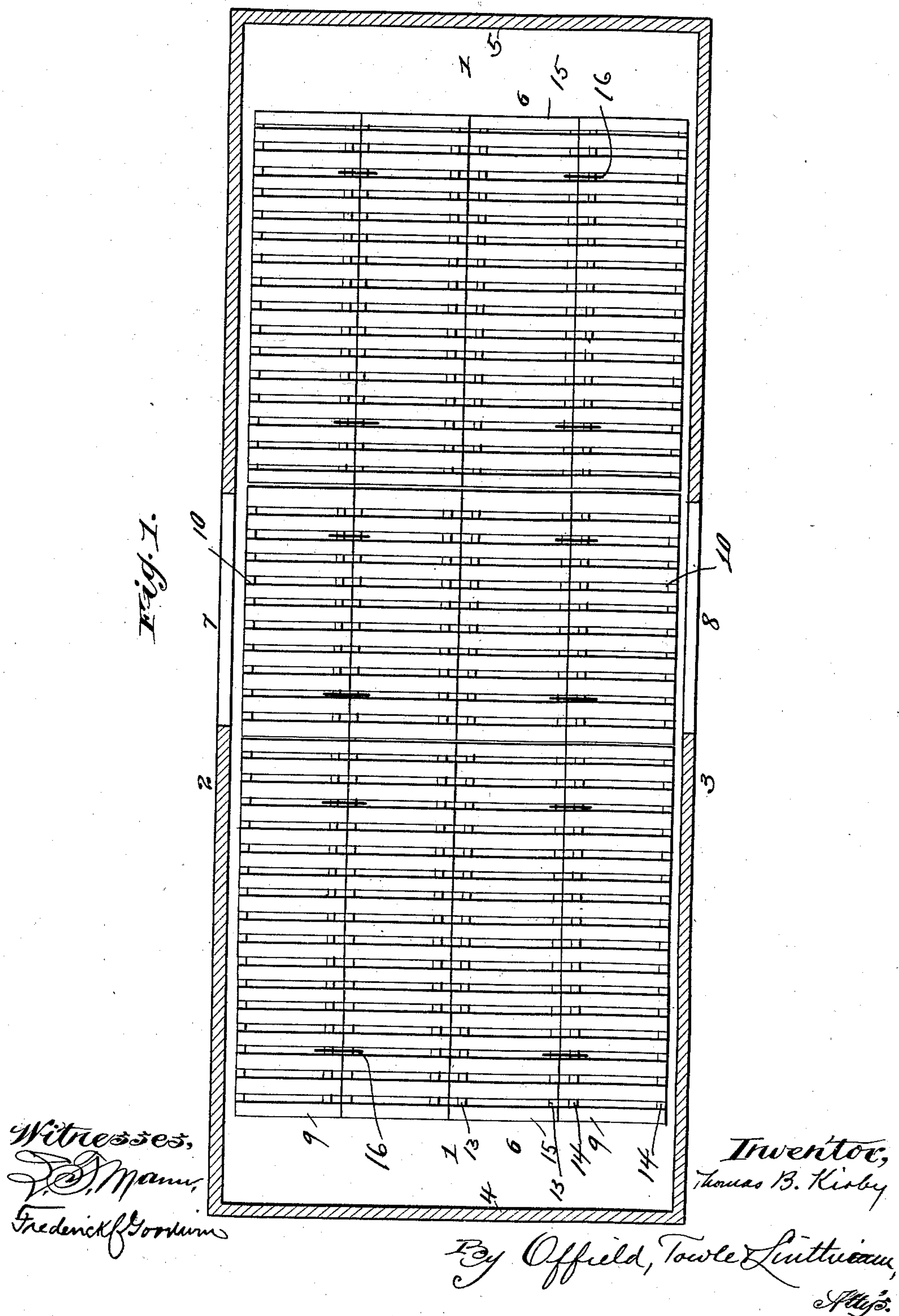
Patented Aug. 21, 1900.

T. B. KIRBY.
REFRIGERATOR CAR.

(Application filed Jan. 29, 1900.)

(No Model.)

4 Sheets—Sheet 1.



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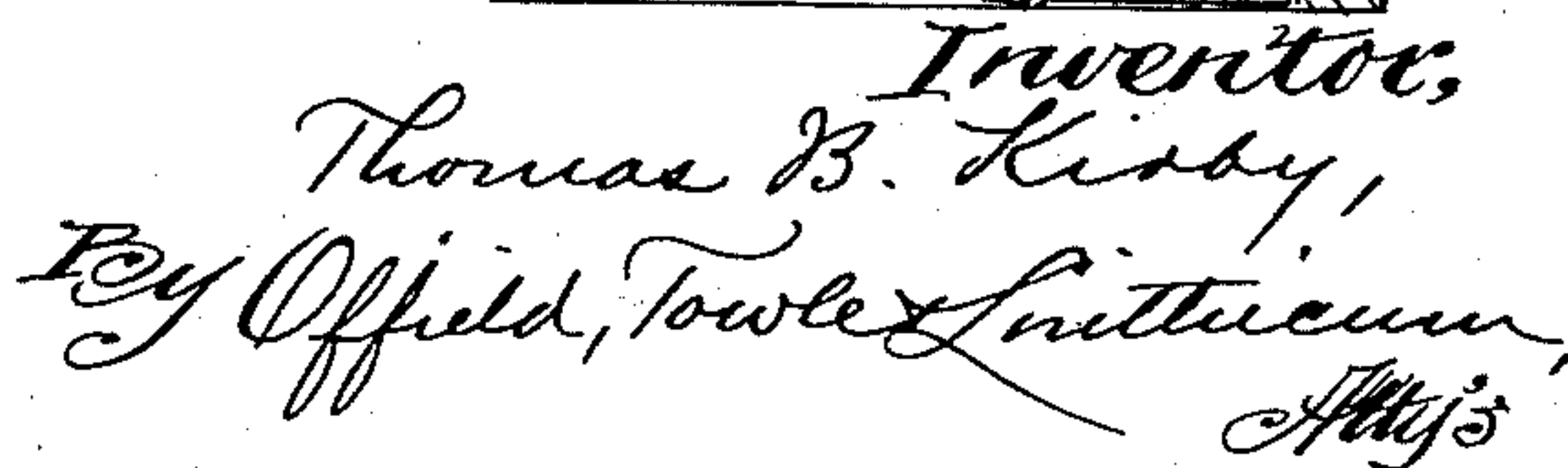
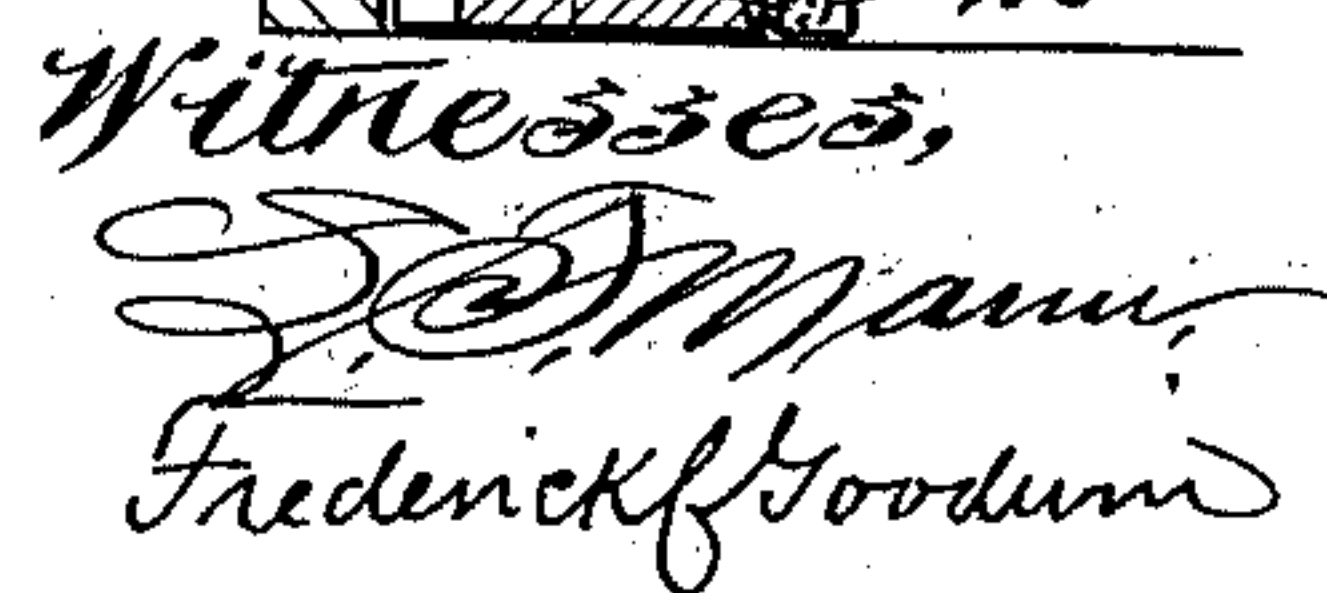
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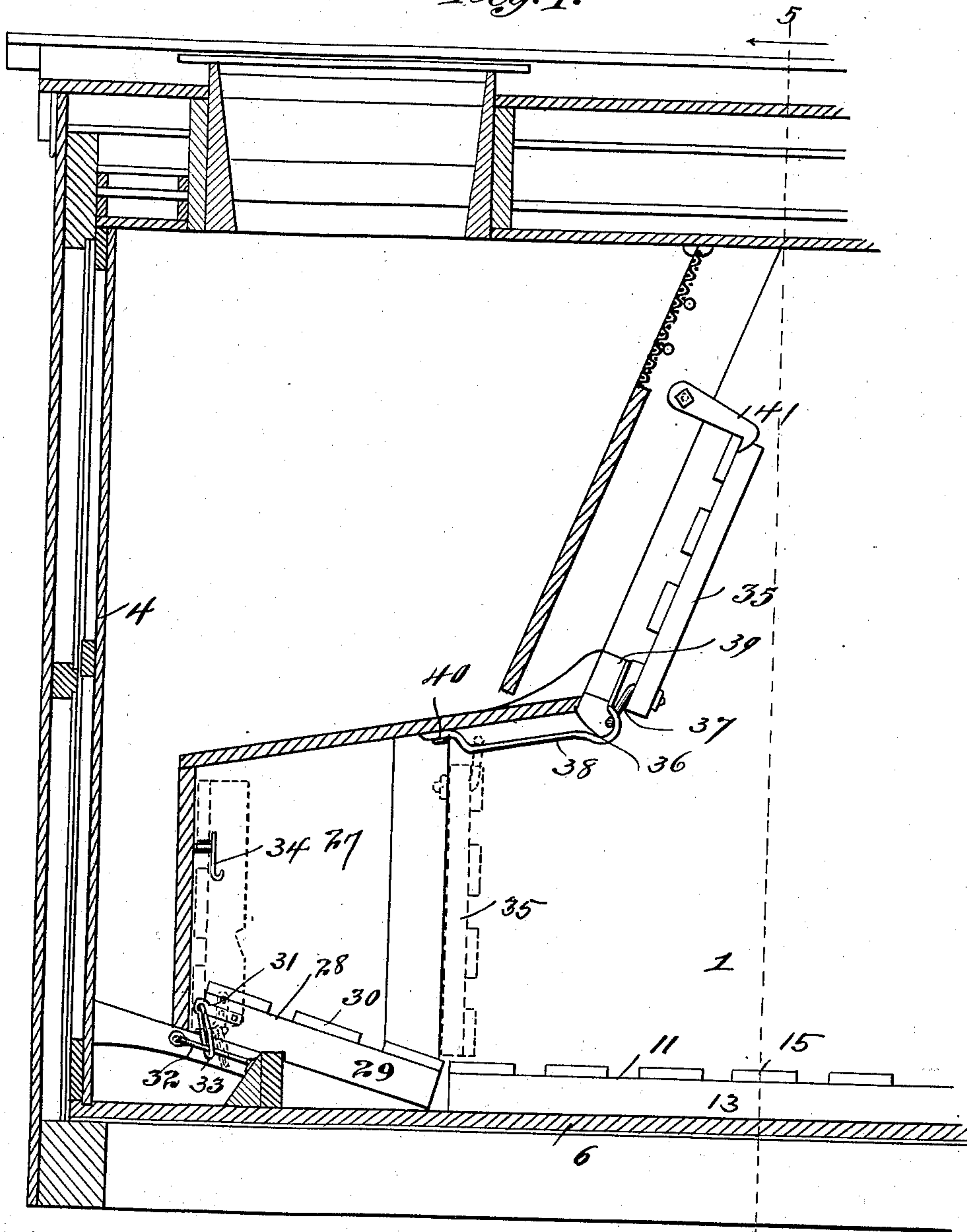
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(No Model.)

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Fig. 4.



Witnesses,
J. M. Mann,
Frederick Goodwin.

Inventor,
Thomas B. Kirby,
By Offield, Towler & Smith,
Attys.

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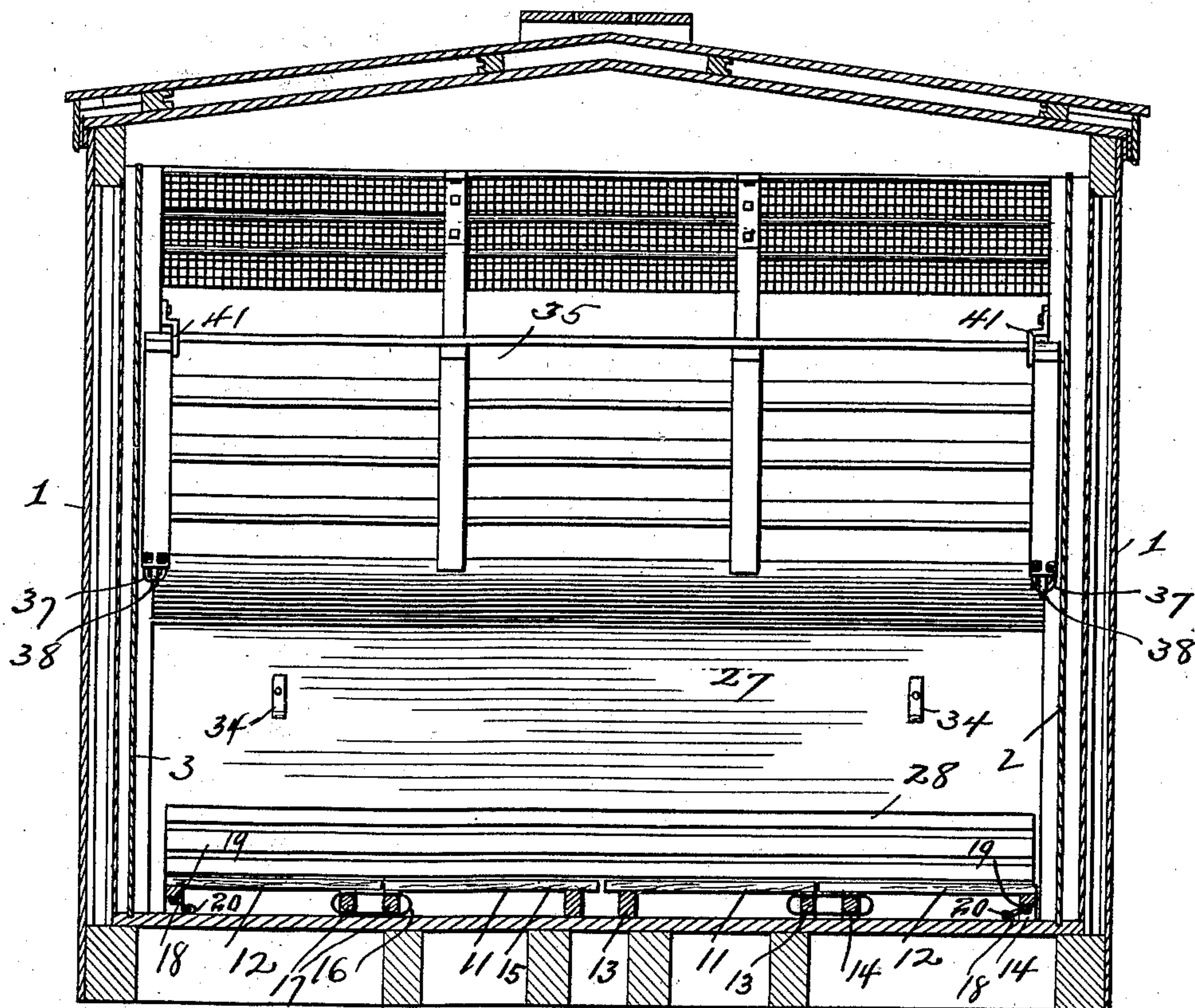
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4 Sheets—Sheet 4.

Fig. 5.



Witnesses,
J. D. Mann,
Frederick Goodwin

Inventor,
Thomas B. Kirby,
By Offield, Towler & Little,
Attys.

UNITED STATES PATENT OFFICE.

THOMAS B. KIRBY, OF CHICAGO, ILLINOIS, ASSIGNOR TO ARMOUR & CO.,
OF SAME PLACE.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 656,462, dated August 21, 1900.

Application filed January 29, 1900. Serial No. 3,160. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. KIRBY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerator-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 for use in such cars.

The object of the invention is to provide a series of racks adapted for use in a freight-car so constructed and designed that they may be collapsed and nested or stored within the car when not in use without occupying more than an insignificant amount of room, the intention being that a set of such racks shall become a part of the regular equipment of the car to take the place of the temporary racks which are now commonly employed and which are customarily thrown away or discarded at the end of a single trip.

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

Figure 1 is a plan view of the floor of a car equipped with my invention, the side walls of the car being shown in horizontal section. Figs. 2 and 3 are transverse vertical sectional views taken through fragmentary portions of a car, showing the racks collapsed and secured to the said side walls. Fig. 4 is a longitudinal sectional view of the end portion of a car equipped with my invention, and Fig. 5 is a transverse vertical sectional view taken on line 5 5 of Fig. 4 and looking in the direction of the arrows.

In its broader sense the present invention is not limited to any particular type of freight-car, and the general features of the invention may be used either in connection with a refrigerator-car or any ordinary freight-car, although certain of the specific features are capable of embodiment only in combination with a refrigerator-car of the type herein illustrated.

Referring to said drawings, 1 designates as a whole the body of a closed car comprising

front and side walls 2 3, end walls 4 5, respectively, and the usual floor 6.

7 and 8 respectively designate the two side doors arranged opposite each other, as usual.

9 10 designate as a whole the several individual ones of a set of folding or collapsible floor-racks of slatted or skeleton construction designed to support the commodity undergoing shipment free from the floor of the car, so as to permit a circulation of air thereunder. Inasmuch as the construction of each of the several individual racks of the set referred to is substantially identical, a description of one will be applicable to all.

Referring then to Figs. 2 and 3, each rack is shown as made of a plurality of sections, two in the present instance, as 11 12. 13 13 and 14 14 designate the two longitudinal supports or joist members of each pair of rack-sections, the supports of each section being arranged parallel to each other and at a suitable distance apart to properly support a series of slats 15, secured transversely thereon at slight intervals apart. The pairs of longitudinal supports of the two rack-sections are located at different distances apart, so that when the rack-sections are folded together they may overlap each other or nest together closely, as indicated clearly in Figs. 2 and 3, the two members which extend along the proximate sides of the two sections being desirably as near the edges of said sections as may be and still permit their folding together. In order to form a hinge or flexible connection with the said sections which while serving to hold the sections securely together nevertheless affords sufficient looseness of joint to permit the rack-sections to be folded together with their longitudinal supports facing inwardly, I preferably employ a plurality of elongated links 16, each arranged to encircle the two proximate supports, said links being made of sufficient length to afford the requisite movement of the connected parts with relation to each other, and the portions of the supports encircled thereby being desirably rounded, as indicated at 17, to facilitate the hinge action. The racks constructed as described are in use permanently hinged in place in the car in such manner that they may be folded up and secured in upright position

against the side walls thereof or opened out into flat position and resting upon the floor, with the exception of those sections which are directly opposite the door-openings, which latter sections are provided with detachable securing devices, by means of which they may be secured in position against the sides of the car when not in use and depend upon the abutting sections and side walls for holding them in position when resting upon the floor. Such hinge connections, as shown herein, comprise a plurality of links 18, secured by means of staples or screw-eyes 19-20, which are respectively inserted in recesses formed in the under sides of the longitudinal supports, which are arranged next to the side walls and into the floor of the car at such distance inwardly from the side walls as to permit the proper hinge action, enabling the sections to be tilted up flat against the interior of the car-wall. By reason of the hinge connection between the two sections the inner section is at the same time that the outer section is raised caused to fold into a vertical position, as shown in Fig. 2, with its longitudinal members nested in with the corresponding members of the outer section and is conveniently held in this position and in such manner as to hold both sections securely by means of a hook and staple 22, located in a recess 23 in the side wall above the upper edges of the rack-sections, which hook engages an eye 24, desirably arranged within a recess 25 in the uppermost supporting member of the pair of rack-sections.

In practice the two sections of each rack will be made to cover approximately one-half the width of the car-floor, so that the two double sections, one at each side, will serve to completely cover the car-floor. Obviously when folded up against the sides of the car they occupy but a trifling amount of space, and while thus held in a vertical position they are not likely to meet with accident and at the same time leave the interior of the car in good condition for shipping commodities not requiring the use of the racks. The middle rack-sections 10, which are located opposite the door-openings, are picked up bodily, folded together in the same manner as are those previously described, and then stored in vertical position against the sides of the car above and resting upon some of the attached sections, as illustrated in Fig. 2. In order to secure these sections in this latter position, hooks and staples 26 are provided, constructed and arranged substantially like those hereinbefore referred to.

In addition to the racks hereinbefore described adapted for use in cars generally I have provided certain auxiliary racks especially adapted for a car having the peculiarities of construction shown herein—that is, one having ice-receptacles arranged to extend across the end or ends of the car in the upper part thereof and leaving a space or recess 27 below the said receptacle. This space is

used or not in the shipment of perishable commodities, depending upon the character of the same, said space being available when shipping small fruits and the like, which may be readily packed within this recess, but being unavailable when shipping bulky commodities. For the purpose of flooring this space I provide a rack 28, desirably comprising a series of short supporting members 29, arranged to extend longitudinal of the car, and supporting-slats 30, which may conveniently extend across the full width of the car. This rack is hinged by means of a flexible link connection, comprising eyepieces 31, secured to the supports 28, link-bars 32, secured to parts of the tank or receptacle structure elevated slightly above the car-floor and located at the opposite ends of the rack, and links 33, connecting said eyes and link-bars, all as shown clearly in Fig. 4, the connection being such that the rack may be tilted up into vertical position against the end wall of said recess 27 and secured in this position by means of turn-buttons 34 or allowed to rest upon the floor at one end and with its opposite or hinged end held elevated slightly to accommodate the structural parts of the tank. In order to provide means for partitioning off said recess, I provide another auxiliary rack 35, which is constructed generally like the rack 28 and is hinged to the lower projecting angle 36 of the tank by means of eyes 37, secured to one of its margins and engaging eye-bars 38, arranged at each end of the tank structure and which are severally secured at one end to bracket-pieces 39 and extended at their opposite ends some distance beneath the tank into the recess 27 and there secured to the bottom of the tank, as indicated at 40. The purpose of this hinged connection is to enable the rack 35 to be lifted up into approximately-vertical position and secured against the end wall of the tank conveniently by means of retaining-hooks 41 when out of use or to be dropped down and carried bodily some distance back into the recess 27, so as to partition off only the non-available space at the inner end of the recess, the position of the rack when in use being indicated clearly in dotted lines in said Fig. 4.

While I have herein shown and described a preferred embodiment of my invention, yet it will be understood that the details thereof may be modified to some extent without departing from the invention, and I do not therefore wish to be limited to the precise details of construction shown, except as made the subject of specific claims.

I claim as my invention—

1. As a new article of manufacture, a supporting-rack for cars, comprising a plurality of hinged sections, each comprising a plurality of longitudinally-arranged supporting-pieces and a plurality of transversely-arranged slats secured thereon, flexible hinge connections connecting said rack-sections, the longitudinal supporting members of the

rack - sections being arranged to nest together when the rack-sections are folded.

2. As a new article of manufacture, a supporting-rack for cars, comprising a plurality of hinged sections, each section comprising a plurality of longitudinally-arranged supporting-pieces and a series of transversely-arranged slats secured thereon and flexible hinge connections connecting said rack-sections, comprising links loosely encircling the proximate longitudinal supports of each pair of rack-sections, said longitudinal supports being suitably spaced apart to enable them to nest together when the rack-sections are folded with the longitudinal supports facing inwardly.

3. The combination with a freight-car, of a supporting-rack therefor, comprising a plurality of hinged sections, each comprising a plurality of longitudinally-arranged supporting-pieces and a plurality of transversely-arranged slats secured thereon and flexible hinge connections connecting said rack-sections, securing devices flexibly connecting said rack to the body of the car adjacent to one of the side walls thereof, and a retaining device for securing said rack in vertical position against said side wall, the hinge connections between said rack-sections being arranged to permit the longitudinally-supporting members of sections to nest together when folded with the latter facing inwardly.

4. The combination with a freight-car, of a supporting-rack therefor, comprising a plurality of hinged sections, each section comprising a plurality of longitudinally-arranged supporting-pieces and a series of transversely-arranged slats secured thereon, flexible hinge connections connecting said rack-sections, comprising links loosely encircling the proximate longitudinal supports of each pair of rack-sections, link-and-staple connections connecting one edge of said rack to the floor of the car adjacent to the side wall thereof and hook-and-staple connections for securing said rack in folded position against said side wall, the hinge connections between said rack-sections being adapted to permit the rack-sections to nest together when folded up against the side wall of the car, substantially as described.

5. The combination with a refrigerator freight-car, having a receptacle located in one end thereof and arranged to overhang the floor so as to leave a space thereunder, of a movable rack hinged to the overhanging portion of said receptacle and adapted to depend therefrom to partition off the space between the receptacle, said hinge connection consisting of a plurality of eyes secured to one edge of the rack-section and eye-bars se-

cured to the overhanging portion of the receptacle parallel with each other, one end of each eye-bar being extended beneath the receptacle, whereby the rack-section is adapted to be carried bodily into said space beneath the receptacle so as to partition off a part only of the space, and means for detachably securing said rack in folded-up position against the side of the receptacle, substantially as described.

6. The combination with a refrigerator-car having an ice-receptacle located in one end thereof, arranged in the upper portion of the car so as to overhang the floor and leave an open recess thereunder, of a movable rack adapted to form an open flooring for the space within said recess, comprising a plurality of longitudinally-extending supports and a series of transversely-arranged slats secured thereon and means for flexibly hinging said rack to the body of the car, so as to permit it to be tilted up into vertical position against the end wall of said recess, comprising a plurality of eyepieces, secured to one edge of the rack, corresponding link-bars, secured to the structure of the car, adjacent to the end wall of the recess and parallel with each other, links connecting said eyepieces with the link-bars and means for detachably securing said rack in vertical position against the end wall of the recess, substantially as shown and described.

7. The combination with a freight-car, of a set of supporting-racks therefor, comprising a plurality of racks secured along each side wall of the car, adjacent to or upon the floor thereof, each consisting of a plurality of sections of equal width hinged together to fold one upon the other with their end surfaces face to face along lines extending longitudinally of the car, the combined width of the two series of racks hinged to the opposite sides of the car being substantially equal to the width of the car so as to practically cover the floor thereof when unfolded, and means for securing said racks in folded-up position against the side walls of the car, substantially as described.

8. A sectional supporting-rack for cars, having a section thereof hinged at the angle of the side wall and floor of the car and an extensible section loosely hinged to said wall-section and adapted to be extended outwardly in prolongation thereof toward the opposite side of the car, said hinged connections adapting the supporting sill members of the wall and extension-sections to nest or interfold.

THOMAS B. KIRBY.

Witnesses:

C. C. LINTHICUM,
FREDERICK C. GOODWIN.