No. 725,178.

PATENTED APR. 14, 1903.

H. A. TURNER.

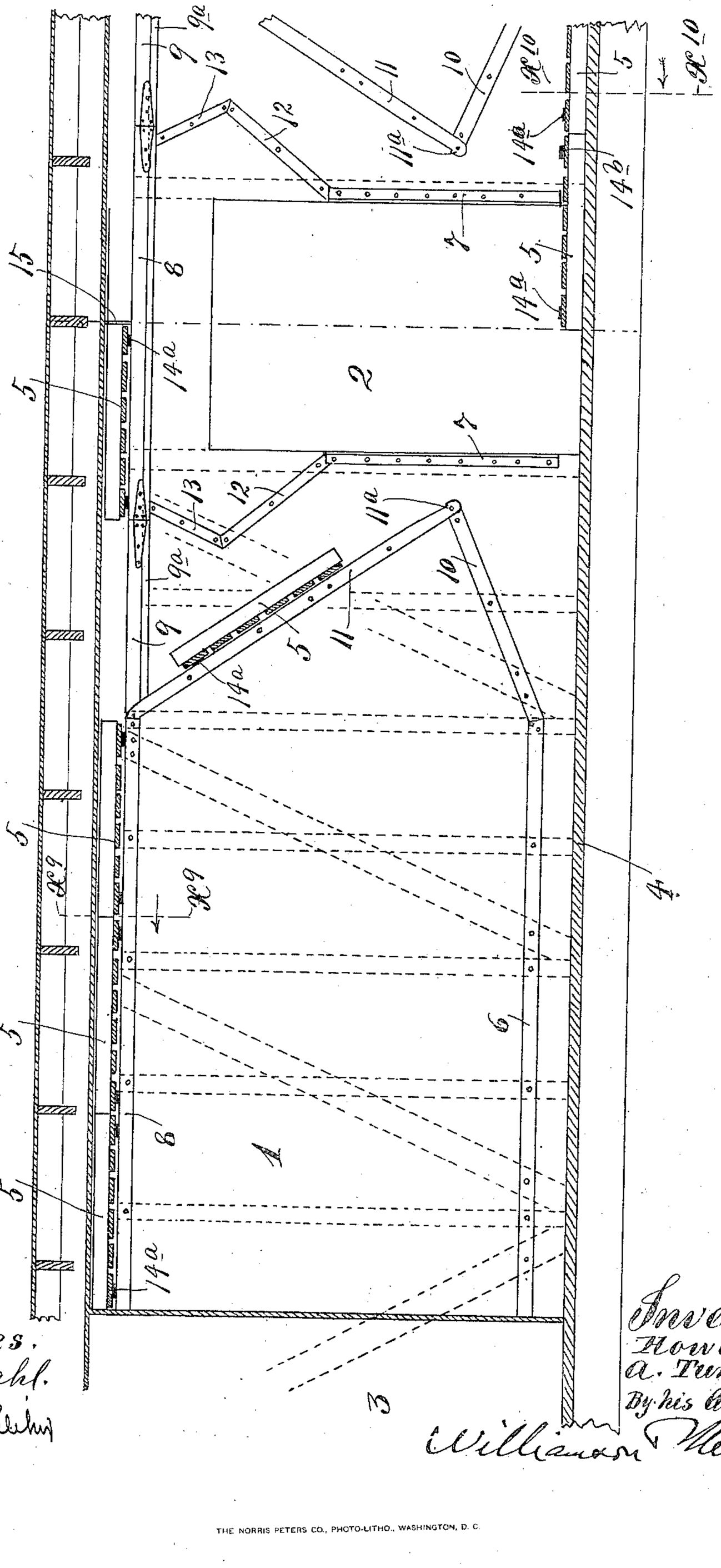
FREIGHT CAR.

APPLICATION FILED AUG. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

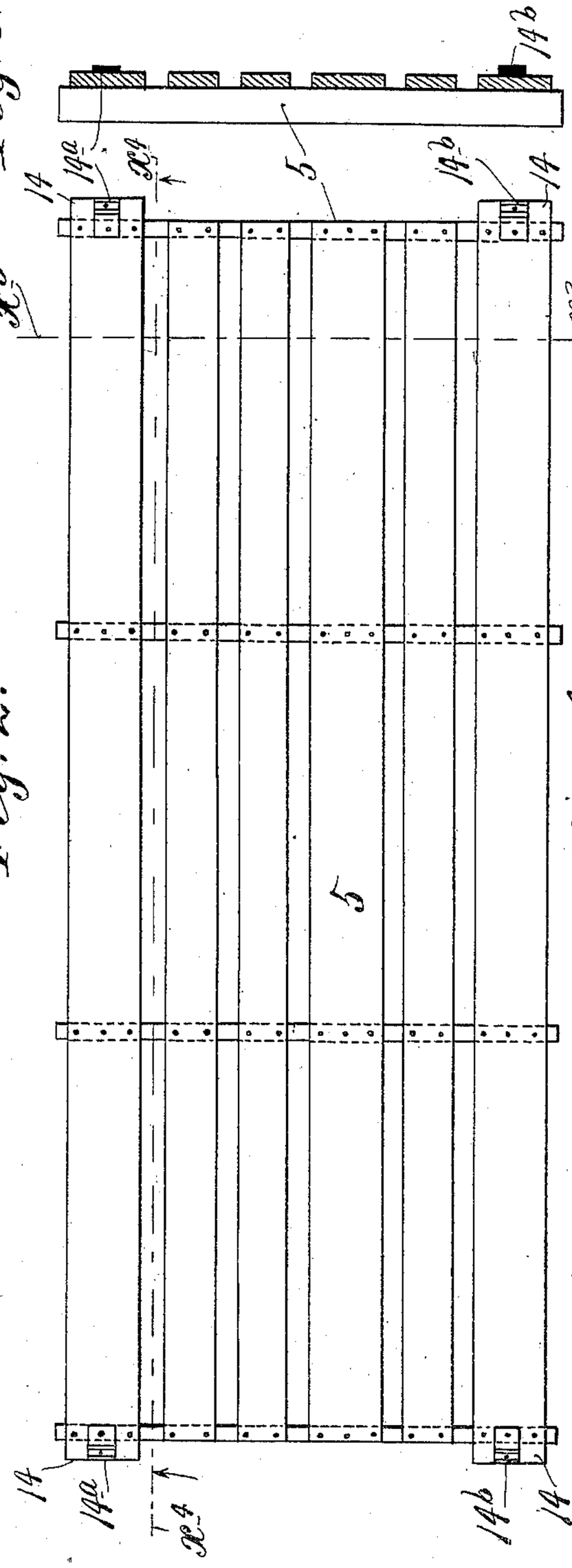

Fig. 2.

Fig. 4.

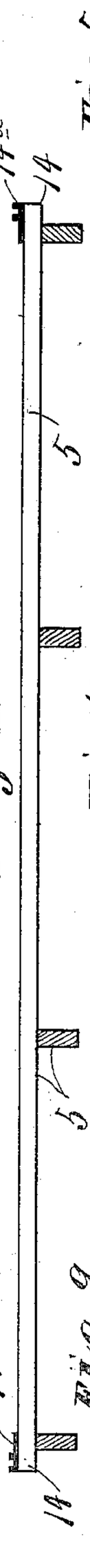

Fig. 5.

Fig. 6

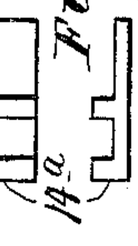

Fig. 7.

Fig 8

Fig 11.

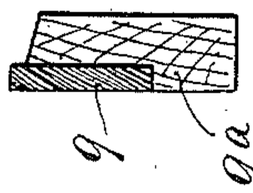

Fig.10.

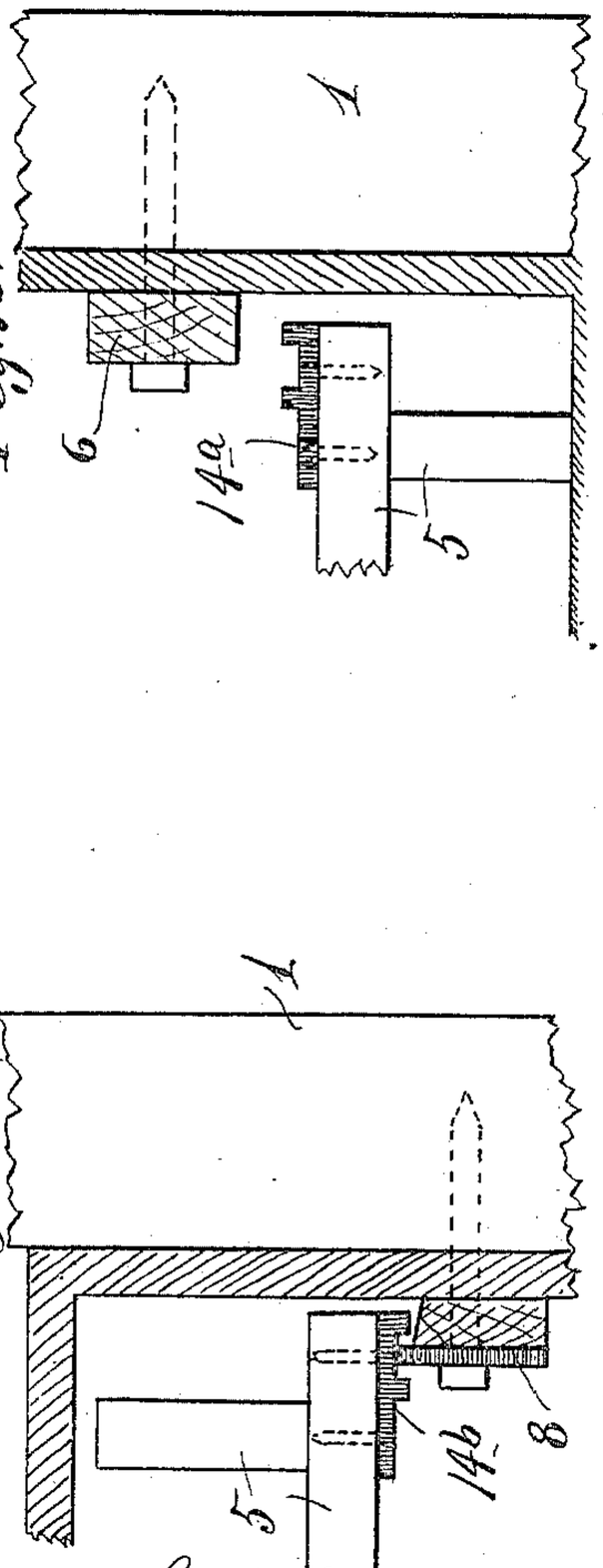

Fig. 9.

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UNITED STATES PATENT OFFICE.

HOWARD A. TURNER, OF MINNEAPOLIS, MINNESOTA.

FREIGHT-CAR.

SPECIFICATION forming part of Letters Patent No. 725,178, dated April 14, 1903.

Application filed August 22, 1902. Serial No. 120,719. (No model.)

To all whom it may concern:

Be it known that I, HOWARD A. TURNER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Freight-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to freight-cars designed for interchangeable use in handling either ventilated and tempered or unventilated and untempered freight, as may be desired. Otherwise stated, the car is convertible from a car having a single floor to a car having a double floor with an air-space between the two floors in order to adapt the car for goods requiring some tempering action, either in the nature of cooling or heating, the spaces between the floors serving as air-channels in the circulating system.

To this end my invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

In said drawings, Figure 1 is a central longitudinal vertical section through part of a car-body equipped with my improvement, some portions being broken away and others removed. Fig. 2 is a plan view of one of the false-floor sections detached. Fig. 3 is a cross-section on the line x^3 x^3 of Fig. 2. Fig. 4 is a longitudinal section on the line x^4 x^4 of Fig. 2. Figs. 5 and 6 are details in plan and edge view, respectively, showing the smaller set of lock-lugs detached, which are shown applied to one side of the floor-sections illustrated in Figs. 1 and 2. Figs. 7 and 8 are similar views of one of the corresponding larger set of lock-lugs detached, which apply to the sides of each floor-section. Fig. 9 is a view in vertical section through a part of the car on the line x^9 x^9 of Fig. 1. Fig. 10 is a similar view through a part of the car on the line x^{10} x^{10} of Fig. 1. Fig. 11 is a detail in vertical section through the gate-section of the idle-position supporting-rails detached.

In many respects the car herein disclosed has features similar to the car disclosed in my prior patent, No. 670,400, of date March 19, 1901, and to the car disclosed in my pending application, Serial No. 92,992, filed February 1, 1902, and allowed May 28, 1902. The false-floor sections are movable from a working position to an idle position at the top of the car through guideways at will, and the parts are so constructed that in all positions the false-floor sections are locked to the car, or, otherwise stated, said false-floor sections while being shiftable at will from a working position to an idle position nevertheless cannot become detached from the car. In the present case, however, the sections when in working position constitute a false floor resting directly on the main or fixed floor of the car and affording an air-space between the fixed and false floor through which the tempering medium, whether for cooling or heating purposes, may circulate. The present car is therefore adapted to a class of usage different from my said prior patent and in some respects different also from my said prior application.

The car-body 1 is provided with the customary door-openings 2 in its side walls, and being intended for convertible use as a tempered or untempered car is provided with boxes 3 at its opposite ends for holding ice or heating device, as the case may require, to secure the desired tempering action. Said car-body is provided with the customary fixed floor 4. To this said fixed floor may be applied at will a false floor made up of sections 5 of such construction that when applied in working position on the fixed floor a continuous false floor will be afforded extending the entire length of the car-floor 4 between the inner walls of the end boxes 3, and said sections 5 are also of such construction that when so applied in working position an air-space will be afforded between the false floor and the fixed floor of the car, the face-pieces of the floor-sections being spaced apart to permit free upward passage of the circulating air. When in working position, the floor-sections 5 are held down by guard-rails 6 and retaining-ribs 7, secured to the sides of the car, the rails 6 extend lengthwise of the car, and the retaining-ribs 7 are vertically disposed, being secured to the inner faces of the door-posts

of the car and stopping sufficiently short of the fixed floor to permit the false-floor sections 5 to pass freely thereunder only as far as permitted by the larger set of lock-lugs 14^b, as shown in Fig. 1.

To the sides of the car, directly below the roof of the same, are secured idle-position supporting-rails made up of the fixed sections 8 and gate-sections 9. The gate-sections 9 are hinged to the particular fixed sections 8 which occupy the space directly over the door-openings 2 and are mounted to swing in a horizontal plane. The gate-sections 9 are of the construction shown detached in Fig. 11, being made up of the rail 9 proper and spacing-blocks 9^a, fixed thereto for holding the rail out to the proper point from the side walls of the car. The guideways, which permit the floor-sections 5 to be shifted from their working to their idle positions, and conversely, are shown as made up of the guard-rails 6, retaining-ribs 7, (hitherto noted,) and of the parts marked 10, 11, 12, and 13. The parts 6, 7, 10, 11, 12, and 13 are so disposed and spaced apart from each other as to afford passage-ways through which the said floor-sections 5 may be shifted from working to idle positions, respectively, by the proper manipulation of the said sections, but which at no point afford space sufficient to permit the floor-sections to be lifted out from the guideways, and the floor-sections are provided with channeled lock-lugs, (marked, respectively, one set 14^a and the other set 14^b,) which are secured to projecting ends 14 of the marginal members of the face-plates of the floor-sections 5. These lock-lugs engage with the members 10 and 11 of the guideways when being shifted from working to idle positions, and conversely, and ride on the idle-position supporting-rails 8 and 9 and also on members 11 when the floor-sections are upside down in their idle position near the top of the car, as shown in Fig. 1. When the floor-sections 5 are in their lowermost or working position, the projecting ends 14 of the marginal face-plates thereof underreach the guard-rails 6 or the retaining-ribs 7, as the case may be, thereby preventing the floor-sections from becoming detached from the car.

From the foregoing it will be seen that the floor-sections are locked to the car at all points of their possible positions, and hence the said floor-sections cannot be detached from the car without the removal of some of the fixed retaining devices, and hence the floor-sections are not liable to become lost or stolen and are always available for the purposes desired. In order to open or close the gate members 9 of the idle-position supporting-rails, the particular floor-section 5 resting on the gate-section, or partially so, if any there be in such position, must be lifted up, so as to permit the gate-section 9 to clear the inner projection of the lock-lugs of the floor-section which engage therewith. Otherwise stated, when the floor-sections are in their idle positions at the top of the car some thereof will have the lock-lugs thereof engaging the gate-sections 9, as shown in Fig. 9, thereby holding the gate-sections in their normal or closed positions, and hence to open the gates the floor-sections engaging the gates must be raised by hand to afford the necessary clearance for the opening movement of the gates.

The two sets of lock-lugs marked, respectively, 14^a (shown in Figs. 5 and 6) and 14^b (shown in Figs. 7 and 8) have channel-ribs differing in height. The smaller set 14^a are applied to the face of the floor-sections 5, at one side thereof, and the larger set 14^b are applied to the other side of the floor-sections 5. The lower set will pass under the vertical retaining-ribs 7 of the opposite door-posts, and the larger set will not, and hence the larger set afford stops to limit the movement of any floor-section crosswise of the door-openings 2, and thereby prevent the floor-sections 5 from coming into a position where they could be removed through the door-openings.

The guide-rail members 11, forming portions of the guides over which the floor-sections 5 are moved in shifting from working to idle positions, and conversely, are shown as provided with stop-notches 11^a, with which the lock-lugs 14^a and 14^b of the floor-sections 5 may engage, making it easier to handle the floor-sections in shifting the same from working to idle positions and preventing the said sections from slipping violently off from the guide-rails 11 under the action of gravity. This prevents the floor-sections from knocking against the retaining-ribs 7 or against the car-floor with a violent action under the effect of gravity.

The floor-sections 5 may of course be of any suitable material and of any suitable construction which will permit the same to afford the false floor when in working position with the air-space and circulating-channels between the face of the false floor and the fixed floor of the car and which will also afford means for interlocking the said floor-sections to some portions of the fixed structure in all possible positions which the floor-sections may take.

The advantage of a car equipped with means such as herein disclosed for adapting the car to carry goods requiring to be tempered by heat or cold or to carry ordinary freight without tempering and then to utilize all the space ordinarily available above the fixed floor of the car in the usual way will be readily understood and appreciated.

It should be noted that the false-floor sections are intended to work on opposite sides of the longitudinal center of the car, or, in other words, toward the opposite ends of the car from the door-openings, and are made rights and lefts. The larger sets of the lock-lugs 14^b on the false-floor sections prevent the

rights and lefts from getting mixed up when in working position, and fixed stops 15, secured to the sides of the car above the idle-position supporting-rails 8 at the center of the car, prevent the rights and lefts from getting mixed up when in idle position.

It will be understood that some of the details of construction may be changed without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a car, the combination with independently-shiftable false-floor sections adapted, when in working position, to rest on the fixed floor of the car, and afford an air-space between the faces of the fixed and false floors, idle-position supporting-rails near the top of the car, and guideways permitting said floor-sections to be shifted from their working to their idle positions, or conversely, with said parts so constructed and disposed that in all positions which said false-floor sections may take, they are locked to the car, and hence, cannot become lost or stolen, substantially as described.

2. In a car, the combination with independently-shiftable false-floor sections adapted, when in working position, to rest on the fixed floor of the car and afford an air-space between the faces of said fixed and false floors, idle-position supporting-rails near the top of the car made up of fixed sections and gate-sections, guideways permitting said floor-sections to be shifted from their working to their idle positions, or conversely, through the gaps controlled by said gate-sections, with said parts so constructed and disposed that in all positions which said false-floor sections may take, they are locked to the car, and that, when the floor-sections are in their idle position, some thereof will lock the gate-sections of said supporting-rails in their closed positions, substantially as described.

3. In a car, the combination with independently-shiftable false-floor sections adapted, when in working position, to rest on the fixed floor of the car, idle-position supporting-rails near the top of the car, and guideways permitting said floor-sections to be shifted from their working to their idle positions, or conversely, with said parts so constructed and disposed that in all positions, said false-floor sections are locked to the car, and with some of the guideways provided with check-lugs to prevent the floor-sections from slipping off therefrom with a violent action, under the effect of gravity, substantially as described.

4. In a car, the combination with the independently-shiftable false-floor sections adapted, when in working position, to rest on the fixed floor of the car, the idle-position supporting-rails with gate-sections near the top of the car, the two sets of lock-lugs of different size applied, the larger set at one side and the smaller set at the other side of the projecting portions of the faces of said floor-sections, and the guideways permitting said floor-sections to be shifted from their working to their idle positions, or conversely, which guideways and floor-sections interlock, in all positions of said sections and include the vertical retaining-ribs at the door-posts with which the larger set of said lock-lugs on the floor-sections engage to prevent the removal of the floor-sections through the door-openings, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD A. TURNER.

Witnesses:

ELIZABETH H. KELIHER,

F. D. MERCHANT.