Oct. 8, 1957 G. D. STOUGH 2,808,789

MEANS FOR ANCHORING MERCHANDISE HOLDERS IN TRANSPORT VEHICLES

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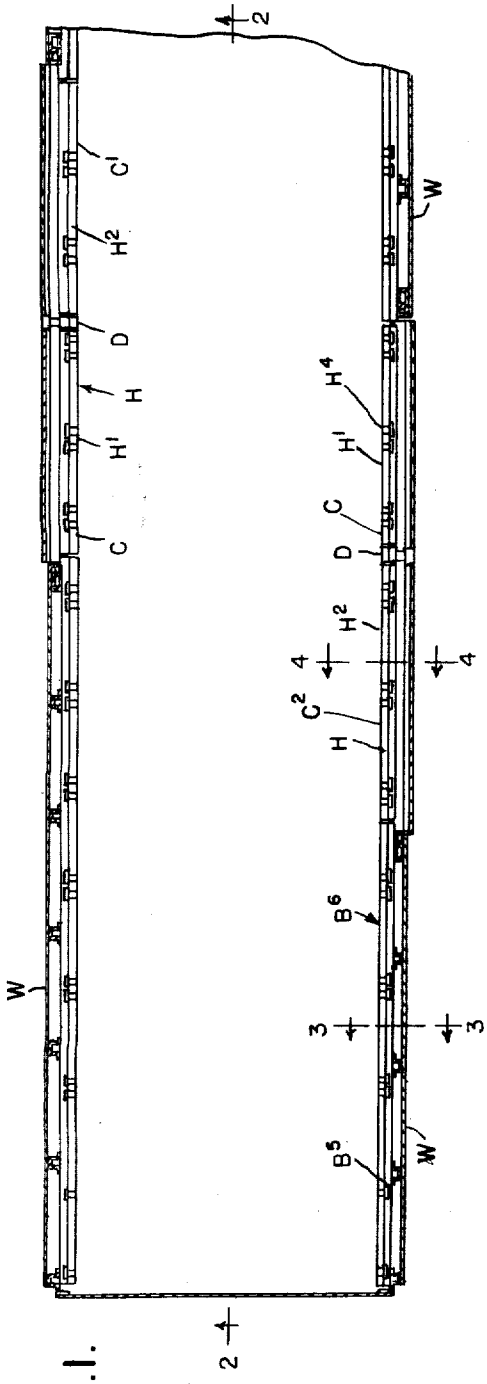


FIG. 1.

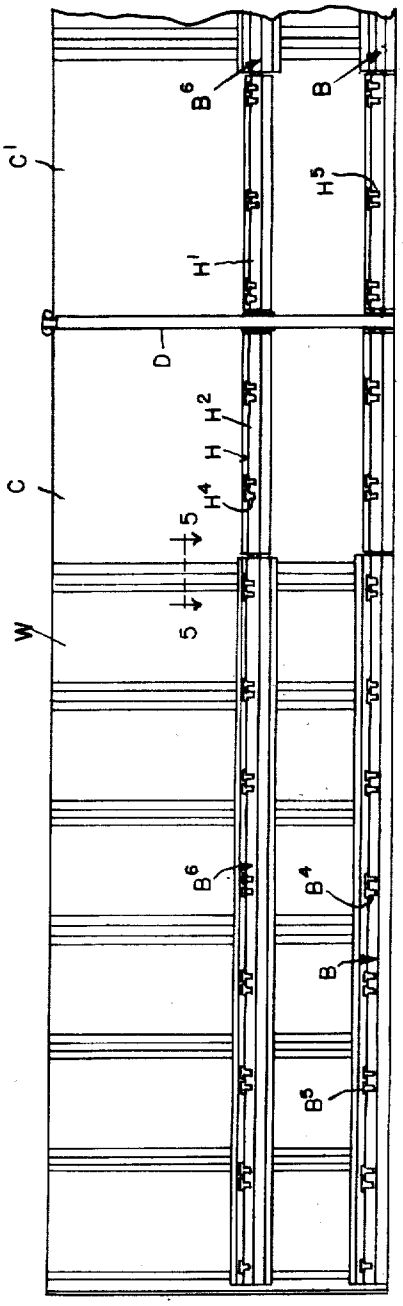


FIG. 2.

INVENTOR.
GERALD D. STOUGH

BY
Whittemore Hulbert & Belknap

ATTORNEYS

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FIG.9.

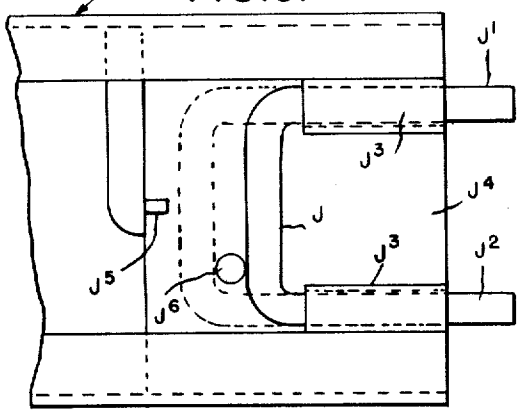
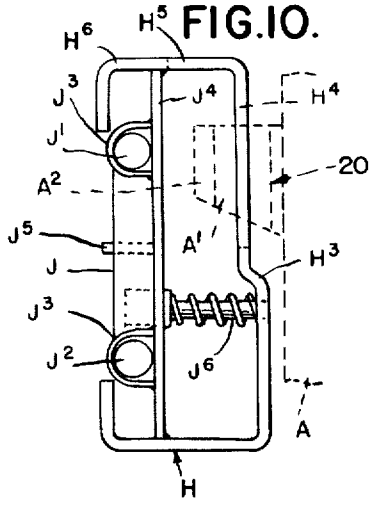


FIG.10.



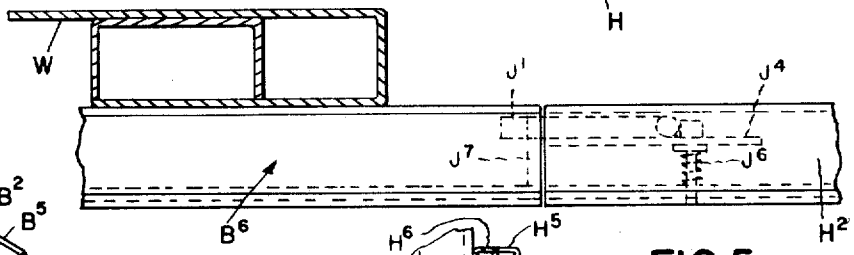


FIG.5.

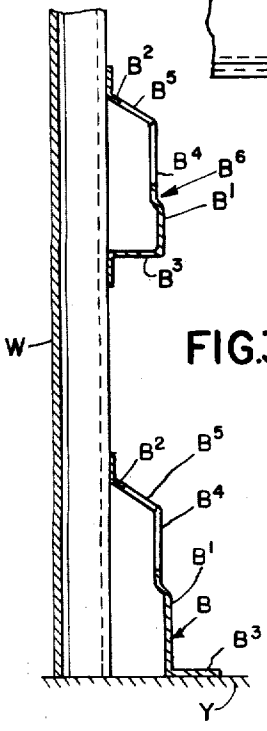


FIG.3.

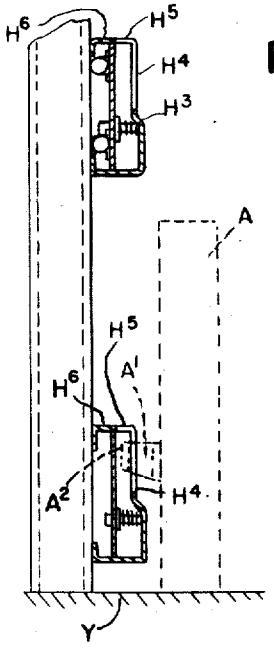


FIG.4.

INVENTOR.
GERALD D. STOUGH

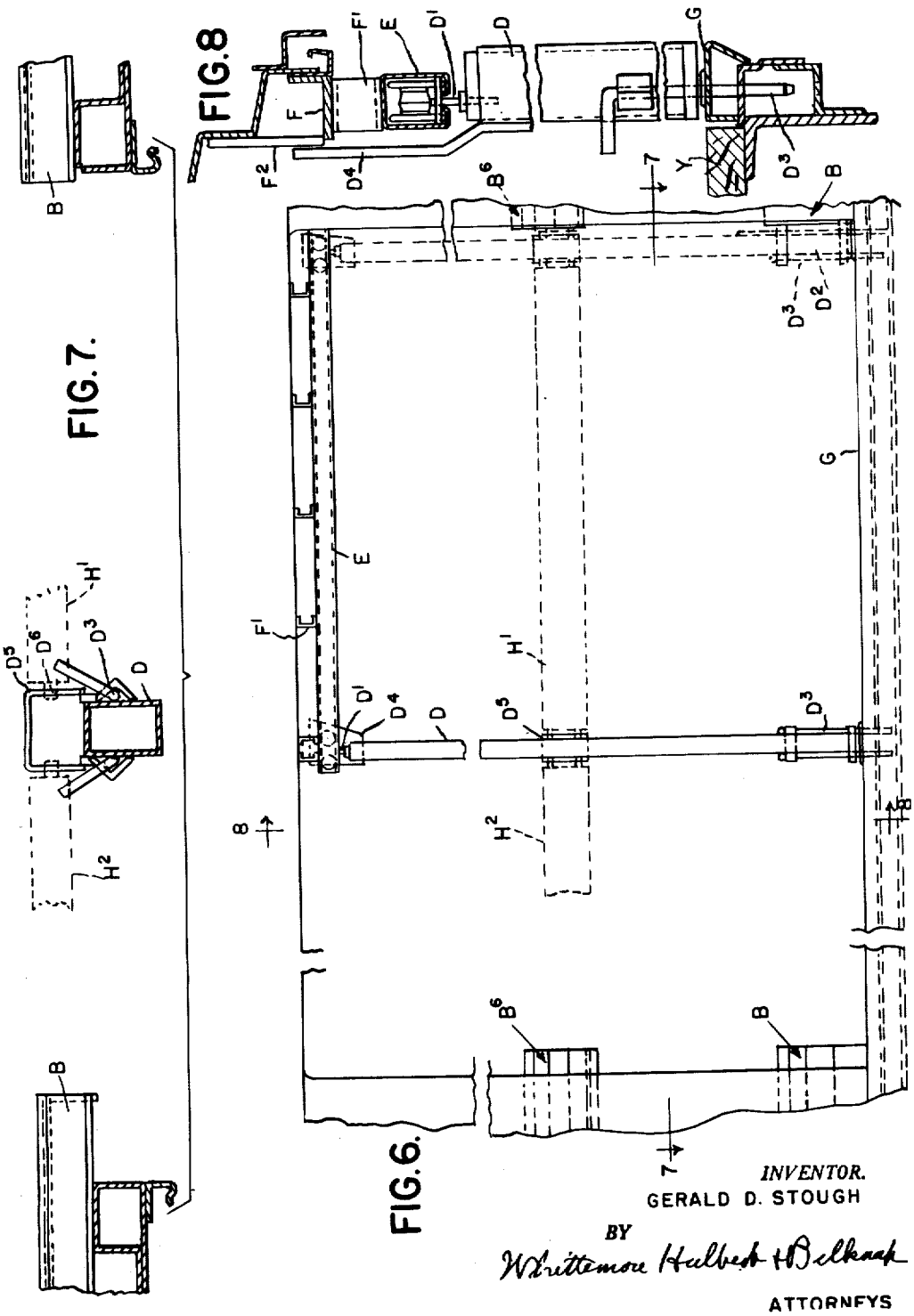
BY
Whittemore Hulbert & Belknap

ATTORNEYS

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MEANS FOR ANCHORING MERCHANDISE HOLDERS IN TRANSPORT VEHICLES

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INVENTOR.
GERALD D. STOUGH

BY
Whittemore Hulbert & Belknap

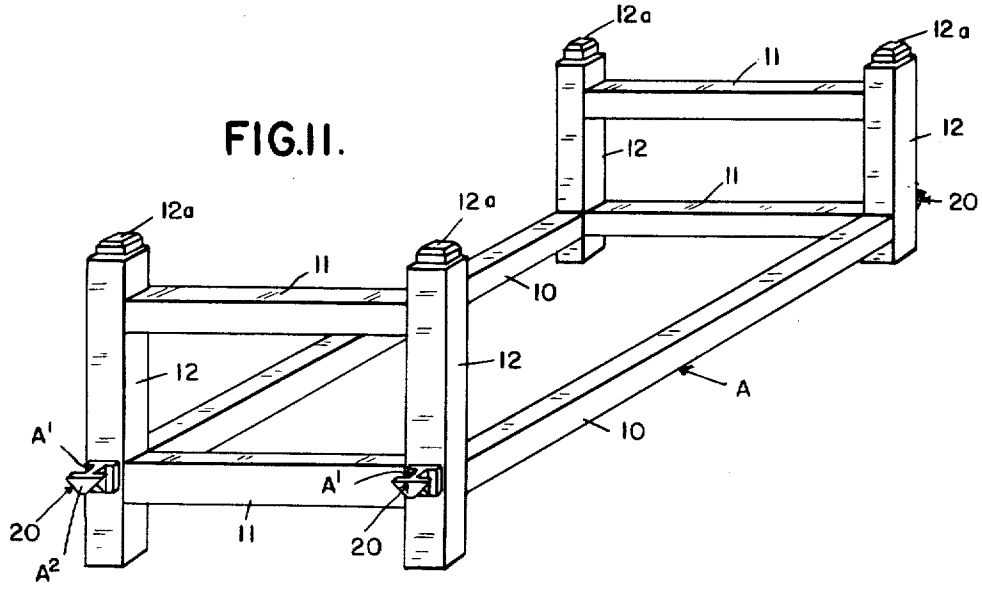
ATTORNEYS

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MEANS FOR ANCHORING MERCHANDISE HOLDERS IN TRANSPORT VEHICLES

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FIG.11.



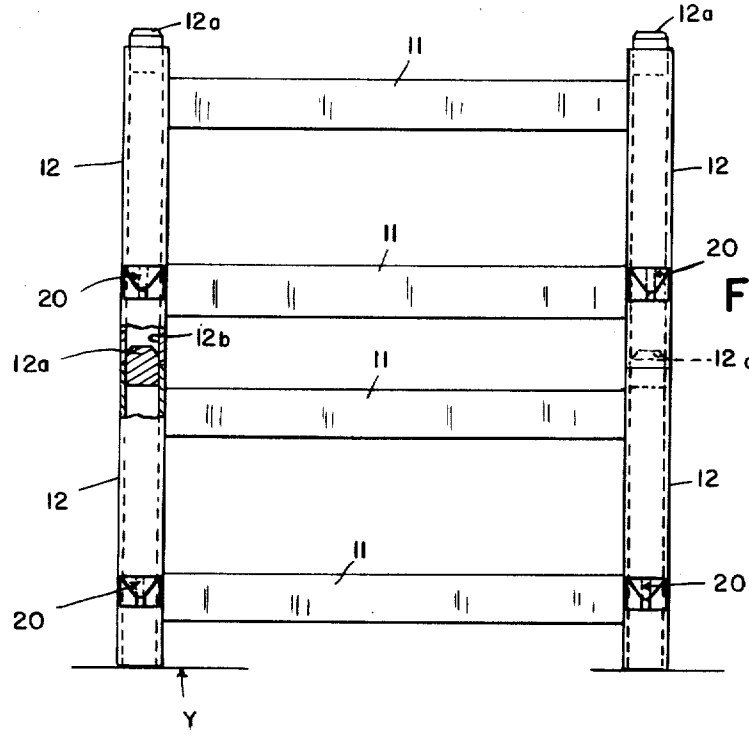


FIG.12.

INVENTOR.
GERALD D. STOUGH
BY
Whittemore, Hulbert & Belknap
ATTORNEYS

United States Patent Office 2,808,789 Patented Oct. 8, 1957

2,808,789

MEANS FOR ANCHORING MERCHANDISE HOLDERS IN TRANSPORT VEHICLES

Gerald D. Stough, Detroit, Mich., assignor to Whitehead & Kales Company, River Rouge, Mich., a corporation of Michigan

Application January 3, 1955, Serial No. 479,464

12 Claims. (Cl. 105—369)

This invention relates generally to the transportation of merchandise and refers more particularly to the transportation of portable merchandise holders in railway freight cars. Heretofore, as illustrated in my application filed November 8, 1954, bearing Serial No. 467,264, railway freight cars have been equipped with means for anchoring portable holders or containers for merchandise so as to prevent shifting of the same under the shocks incident to transportation. As illustrated in my application aforesaid, one construction for this purpose is to provide rails attached to the sides of the car and means on said rails and each of said holders interengageable by a vertical downward movement of the holders relative to the rails to anchor the one to the other. Inasmuch as additional rails are provided for each tier, such construction anchors not only the holders directly resting on the floor of the car but also those in higher tiers or stacks. However, the rails do not bridge the door openings and therefore cannot anchor holders that are in registration with or are opposite such openings.

It is the object of the present invention to provide means for anchoring portable merchandise holders in all available storage space within the car, including that which is opposite door openings. To this end the invention consists in the construction as hereinafter set forth.

In the accompanying drawings:

Fig. 1 is a horizontal section through a railway freight car provided upon opposite upright side walls thereof and at the door openings therein with anchoring means for the portable merchandise holders.

Fig. 2 is a section on line 2—2, Fig. 1.

Figs. 3 and 4 are vertical sections, respectively on lines 3—3 and 4—4, Fig. 1, dotted lines being illustrated in Fig. 4 to designate one of the holders and one of its laterally projecting headed members or lugs.

Fig. 5 is a section on line 5—5, Fig. 2.

Fig. 6 is a fragmentary side elevation of the freight car, showing a door opening thereof provided with a shiftable post, and showing by dotted lines the position the post occupies when the car is being loaded, and the position occupied by the removable anchoring rails after the car is loaded.

Fig. 7 is a section on line 7—7, Fig. 6, and showing by dotted lines portions of the removable rails.

Fig. 8 is a section on line 8—8, Fig. 6.

Figs. 9 and 10 are, respectively, a fragmentary side elevation and an end elevation of the removable anchoring rails and locking means therefor, dotted lines being illustrated in Fig. 9 to show the retracted position of the locking bolt, and dotted lines being illustrated in Fig. 10 to designate one of the holders and one of its laterally projecting headed members or lugs.

Fig. 11 is a perspective view of one of the portable merchandise holders or containers.

Fig. 12 is an end elevational view of a plurality of portable holders or containers arranged in a vertical stack, with parts broken away and in section.

Portable holders A for the merchandise are employed

in the present invention, however the particular construction of the framework of said holders forms no part of the present invention. Preferably such holders are similar in construction to those illustrated in my application aforesaid, and such holders extend across substantially the full width of the car and are anchored at their opposite ends. The anchoring means for the holders that are adjacent to the side walls of the railway freight car is formed by rails B secured to said side walls W adjacent to the floor Y of the car and at higher levels. These rails are preferably formed of sheet metal and each has an upright position B^1 substantially parallel to and spaced from a side wall, and has laterally extending portions B^2 and B^3 secured to a side wall W or to the side wall and floor Y of the car. Each holder A has a rectangular frame provided with side members **10**, end members **11** and supporting posts or load-sustaining elements **12** at the four corners of said frame. Each holder A is provided at its opposite ends, preferably upon the posts **12** thereof, with laterally projecting substantially T-shaped members or lugs **20**. The portions B^1 of the rails B are formed with longitudinally spaced vertically extending upwardly opening slots B^4 for receiving the shanks or stems A^1 of the members **20**, and the laterally extending portions B^2 of the rails are provided at the upper ends of the upwardly opening slots B^4 with enlarged apertures B^5 for receiving the heads or laterally projecting portions A^2 of said members **20**. Thus, each holder A may be carried into the car by a lift-truck or other means at a level where the T-shaped members **20** are above the portions B^2 of the rails and above the position it is to occupy in the car during transportation but where the members **20** will be in vertical alignment with the slots B^4. By then lowering a holder A to rest upon the floor Y, the shanks A^1 of the members **20** at opposite ends of the holder will move downwardly in the slots B^4 in the rails B upon opposite side walls of the car, and the heads A^2 will pass downwardly through the apertures B^5. This will securely anchor the holder A against horizontal displacement or interference with any of the other holders which rest upon the floor. Additional holders A may be arranged as a stack over each holder A resting on the floor, as illustrated in Fig. 12, and may be anchored by substantially similar higher rails B^6 mounted on the side walls W of the car. For example, the upper ends of the posts **12** of each holder A resting on the floor Y may be provided with upwardly projecting lug or pin portions **12***a* for engaging sockets **12***b* in the lower ends of posts of a superimposed holder A in a stack.

The construction as thus far described forms the subject matter of my application aforesaid but it includes no provision for the anchoring of holders in the storage space beside or opposite the door openings of the freight car.

Railway freight cars are usually provided with door openings in the opposite side walls thereof. In some freight cars each opening is closed by a single door, while in others the door openings are wider, and each such wider opening is closed by a pair of complementary doors. The latter construction is illustrated in Figs. 1 and 2 of the drawings. By referring to Fig. 1 it will be noted that these openings in the opposite side walls are not completely in registration with each other but include portions C which are in registration transversely of the car, and portions C^1 and C^2 respectively, which are at opposite ends of the portions C and are opposite the side walls of the car. For anchoring the holders which are opposite or beside these openings I have provided separate rail members that bridge the openings and that are removed when the car is being loaded. Thus, after the holders A have been placed in position and anchored between the side walls W of the car, then all the remain-

ing space adjacent the door openings may be filled with other holders A which are then anchored by replacement of the removable rails. If each door opening is only of a width to be closed by a single door then a single removable rail may span each such opening. On the other hand if, as shown in Figs. 1 and 2, each of the openings is of a width to require two doors for closing the same then a single rail spanning such opening might be of objectionable weight for easy handling. Therefore I have provided a shiftable post for each double door opening arranged centrally thereof and to which a pair of rails may be separately attached to respectively bridge the portion of the opening on opposite sides thereof. This post would form an obstruction to the loading of the car and, therefore, during loading may be shifted from its anchoring position to a position at one side of the entire opening. The shiftable post D is a hollow tube, preferably of rectangular cross section, which at its upper end is suspended by a trolley hanger member D^1 from a horizontal track or rail E. This track or rail is attached to the car frame above the door opening which includes the longitudinally extending member F of angle cross section. The attachment, as shown, comprises a series of short channel bars F^1 extending transversely of the opening, being welded at their upper ends to the member F and at their lower ends to the rail E. This rail E is of a length to extend from one side of the door opening to a point where the post is to be positioned after the loading of the car. During the loading period the post D is shifted to the side of the opening, as indicated at D^2, Fig. 6. At each of its two positions the lower end of the post D is anchored to the floor of the car by bolts D^3 slidably secured to the post and engageable with registering apertures in the floor. As shown in Fig. 8 these bolt receiving apertures are formed through a sill member G and are engaged by a pair of slide bolts D^3 on opposite sides of the post. A member D^4 secured to the upper end of the post on its inner side extends upward beyond the trolley and its supporting rail to slidably bear against a plate F^2 of the car body extending above the door opening.

The removable anchoring rail members H for bridging a two door opening are formed in separate sections H^1 and H^2 and extend respectively from the post D to the adjacent ends of the rails B and B^6 on the side walls W at opposite sides of the opening. These rail sections H^1 and H^2 are the same in cross section, and, as shown in Figs. 2, 5 and 6, have their inner sides fashioned to align with the corresponding portions of the rails B and B^6. Each removable rail member H has an upright portion H^3, provided with longitudinally spaced vertically extending upwardly opening slots H^4 corresponding to the slots B^4 in the rails B, and has a laterally extending portion H^6 provided at the upper ends of the upwardly opening slots H^4 with apertures H^5 for the entrance of the heads A^2 of the members **20**. The rail sections H^1 and H^2 are secured at opposite ends thereof by locking bolts J which engage keepers in the stationary rails B and B^6 and in the post D. As shown in Figs. 9 and 10 each locking bolt J is a U-shaped member having the parallel portions J^1 and J^2 which slidably engage bearings J^3 on a plate J^4 rigidly secured within an end portion of the rail H between the opposite side portions thereof. When fully retracted within the rail H, the bolt J engages a stop J^5 on the plate J^4. When moved outward into locking engagement with its keeper it passes over a spring latch member J^6 which holds it from accidental retraction. As shown in Fig. 5, the keeper in each sationary rail B or B^6 for the bolt J is a plate J^7 welded to the end of the stationary rail and having bores therethrough for receiving the portions J^1 and J^2 of said bolt J when extended. Thus either section H^1 or H^2 can be held by a bolt J in alignment with the rails B or B^6. On the post D the keeper for the bolt J is formed by a U-shaped lateral inward projecting member D^5 located between adjacent ends of the rail sections H^1 and H^2 and having bores D^6 therein for receiving the members J^1, J^2.

To lock the holders A to the stationary rails B or B^6 said holders are lowered by a lift truck from a raised position to a position where the locking members **20** on opposite ends of the holders are engageable with the upwardly opening slots B^4 and the apertures B^5 in the stationary rails. Such lift truck may be used to deposit the holders on the floor or on top of another holder in a stack. In other words, locking engagement is effected by a vertical downward movement of each holder A relative to stationary rails. For locking the holders A to the removable rails H the holders A are first positioned in the car and then the rails H are moved vertically upward to engage said members **20** with the apertures H^5 and slots H^4. Thereafter the removable rails H are locked by the bolts J to the stationary rails B or B^6 and post D. However, after the operation just described all of the holders A positioned adjacent the door openings will be held against any horizontal shifting in the car during transportation. Preferably the cross section of the rail sections H^1 and H^2 is restricted in vertical dimensions so as to permit said rail sections to be placed below the members **20** on the holders and then raised to effect the locking engagement, after which they are locked as aforesaid to the stationary rails and post.

With the construction as above described it will be possible to utilize all available space within the car for the storage of merchandise holders and to retain each holder from displacement or interference with other holders.

What I claim as my invention is:

1. In combination, a transport vehicle having a load-sustaining floor and having above said floor an upright side wall provided intermediate its ends with a door opening, a portable merchandise holder within said vehicle opposite said door opening and having load-sustaining elements supported upon said floor, and means restraining said holder against horizontal movement while permitting the static load of said holder to be carried entirely by said floor independently of said upright side wall, including a vertically movable horizontal rail bridging said door opening and said holder and having a vertically extending upwardly opening slot therein, said rail being detachably connected to fixed means on said upright side wall, and means on said holder engaging the slot aforesaid and having means detachably interlocked with said rail.

2. In combination, a transport vehicle having a load-sustaining floor and having above said floor an upright side wall provided intermediate its ends with a door opening, a plurality of portable merchandise holders within said vehicle opposite said door opening and having load-sustaining elements supported upon said floor, and means restraining said holders against horizontal movement while permitting the static load thereof to be carried entirely by said floor independently of said upright side wall, including a shiftable upright post detachably anchored to said floor intermediate opposite upright sides of said door opening, vertically movable rails extending horizontally between said post and opposite upright sides of said opening, said rails bridging said holders and having vertically extending upwardly opening slots therein, adjacent ends of said rails being detachably connected to said post, the remote ends of said rails being detachably connected to fixed means on said upright side wall, and means on said holders engaging the slots aforesaid and having means detachably interlocked with said rails.

3. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, a portable merchandise holder within said vehicle opposite said door opening and having load-sus-

taining elements supported upon said floor, the length of said holder being substantially equal to the distance between said opposite upright side walls, and means restraining said holder against horizontal movement while permitting the static load of said holder to be carried entirely by said floor independently of said rails, including removable horizontal rails bridging said door openings and opposite ends of said holder and having vertically extending upwardly opening slots therein, said rails being detachably connected to fixed means on said upright side walls, and means on opposite ends of said holder engaging the slots aforesaid and having means detachably interlocked with said rails.

4. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls, one of said upright side walls being provided intermediate its ends with a door opening, a portable merchandise holder within said vehicle opposite said door opening and having load-sustaining elements supported upon said floor, the length of said holder being substantially equal to the distance between said opposite upright side walls, and means restraining said holder against horizontal movement while permitting the static load of said holder to be carried entirely by said floor independently of said upright side walls, including a removable horizontal rail bridging said door opening and bridging the adjacent end of said holder, said removable rail being detachably connected to fixed means on said one upright side wall, a stationary horizontal rail secured to the upright side wall opposite said opening and bridging the adjacent end of said holder, said removable rail having a vertically extending upwardly opening slot therein, said stationary rail having a vertically extending upwardly opening slot therein, and means on opposite ends of said holder respectively engaging the slots aforesaid and having means respectively interlocked with said removable and stationary rails.

5. In combination, a transport vehicle having a load-sustaining floor and having above said floor an upright side wall provided intermediate its ends with a door opening, a portable merchandise holder within said vehicle opposite said door opening and having at opposite ends thereof load-sustaining means supported upon said floor, and means restraining said holder against horizontal movement while permitting the static load thereof to be carried by said floor independently of said upright side wall, including movable anchorage means extending horizontally across said door opening and bridging said holder, said movable anchorage means being detachably connected to fixed means on said upright side wall, and cooperating anchorage means on said bridged holder having means detachably interlocked with said movable anchorage means.

6. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, a portable merchandise holder within said vehicle opposite said door openings and having load-sustaining elements supported upon said floor, the length of said holder being substantially equal to the distance between said spaced upright side walls, and means restraining said holder against horizontal movement while permitting the static load of said holder to be carried entirely by said floor independently of said upright side walls, including removable anchorage means between opposite ends of said holder and said door openings, said removable anchorage means being detachably connected to fixed means on said upright side walls, and cooperating anchorage means on said holder at opposite ends thereof and respectively having means detachably interlocked with said removable anchorage means.

7. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, a plurality of portable merchandise holders within said vehicle opposite said door openings and having load-sustaining elements supported upon said floor, the length of each holder being substantially equal to the distance between said spaced upright side walls, and means restraining said holders against horizontal movement while permitting the static load of said holders to be carried entirely by said floor independently of said upright side walls, including a shiftable upright post detachably connected to said floor at a point substantially midway between opposite upright sides of each door opening, removable anchorage means extending horizontally between said posts and the opposite upright sides of said door openings and bridging opposite ends of said holders, said removable anchorage means being detachably connected to said posts and to fixed means on said upright side walls, and cooperating anchorage means mounted on said holders at opposite ends thereof and respectively having means detachably interlocked with said removable anchorage means.

8. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, a plurality of portable merchandise holders within said vehicle and having load-sustaining elements supported upon said floor, the length of each holder being substantially equal to the distance between said spaced upright side walls, and means restraining said holders against horizontal movement while permitting the static load of said holders to be carried entirely by said floor independently of said upright side walls, including stationary anchorage means secured to said upright side walls beyond opposite upright sides of said door openings, removable anchorage means bridging said door openings substantially in alignment with and detachably connected to said stationary anchorage means, and cooperating anchorage means mounted on said holders at opposite ends thereof and respectively having means detachably interlocked with said stationary and removable anchorage means.

9. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, upper and lower portable merchandise holders within said vehicle opposite said door openings and having load-sustaining elements at opposite ends thereof, the length of each holder being substantially equal to the distance between said spaced upright side walls, the load-sustaining elements of said lower holder being supported upon said floor, the load-sustaining elements of said upper holder being supported upon the load-sustaining elements of said lower holder, whereby said upper and lower holders are arranged in a vertical stack, and means restraining said upper and lower holders against horizontal movement while permitting the static load thereof to be carried by said floor independently of said upright side walls, including movable anchorage means located between opposite ends of said upper and lower holders and said door openings, said movable anchorage means being detachably connected to fixed means on said upright side walls, and cooperating anchorage means on said upper and lower holders at opposite ends thereof and respectively having means detachably interlocked with said movable anchorage means.

10. In combination, a transport vehicle having a load-sustaining floor and having above said floor an upright side wall provided intermediate its ends with a door opening, upper and lower portable merchandise holders within said vehicle opposite said door opening and having load-sustaining elements at opposite ends thereof, the load-sustaining elements of said lower holder being supported upon said floor, the load-sustaining elements of said upper holder being supported upon and interlocked with the load-sustaining elements of said lower holder, whereby said upper and lower holders are ar-

ranged in a vertical stack, and means restraining said interlocked upper and lower holders against horizontal movement while permitting the static load thereof to be carried by said floor independently of said upright side wall, including movable anchorage means extending across said door opening and bridging at least one of said holders, said movable anchorage means being detachably connected to fixed means on said upright wall, and cooperating anchorage means on said bridged holder having means detachably interlocked with said movable anchorage means.

11. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls provided intermediate their ends with door openings, a plurality of portable merchandise holders within said vehicle opposite said door openings and having load-sustaining elements supported upon said floor, the length of each holder being substantially equal to the distance between said opposite upright side walls, and means restraining said holders against horizontal movement while permitting the static load thereof to be carried entirely by said floor independently of said upright side walls, including movable horizontal rails bridging said door openings and bridging opposite ends of said holders, said movable rails having upright portions provided with vertically extending upwardly opening slots, said movable rails being detachably connected to fixed means on said upright side walls, and lugs on opposite ends of said holders engaging selected slots aforesaid and respectively having heads disposed behind said selected slots and detachably interlocked with the upright portions of said rails.

12. In combination, a transport vehicle having a load-sustaining floor and having above said floor spaced upright side walls, one of said upright side walls being

provided intermediate its ends with a door opening, a plurality of portable merchandise holders within said vehicle opposite said door opening and having load-sustaining elements supported upon said floor, the length of each holder being substantially equal to the distance between said opposite upright side walls, and means restraining said holders against horizontal movement while permitting the static load thereof to be carried entirely by said floor independently of said upright side walls, including a movable horizontal rail bridging said door opening and bridging adjacent ends of said holders, said movable rail being detachably connected to fixed means on said one upright side wall and having an upright portion provided with vertically extending upwardly opening slots, a stationary horizontal rail secured to the upright side wall opposite said opening and bridging adjacent ends of said holders, said stationary rail having an upright portion provided with vertically extending upwardly opening slots, and lugs on opposite ends of said holders engaging selected slots aforesaid and respectively having heads disposed behind said selected slots and detachably interlocked with the upright portions respectively of said movable and stationary rails.

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