No. 869,630. PATENTED OCT. 29, 1907.

C. W. GILL.

BOX CAR.

APPLICATION FILED JAN. 4, 1907.

Fig. 1.

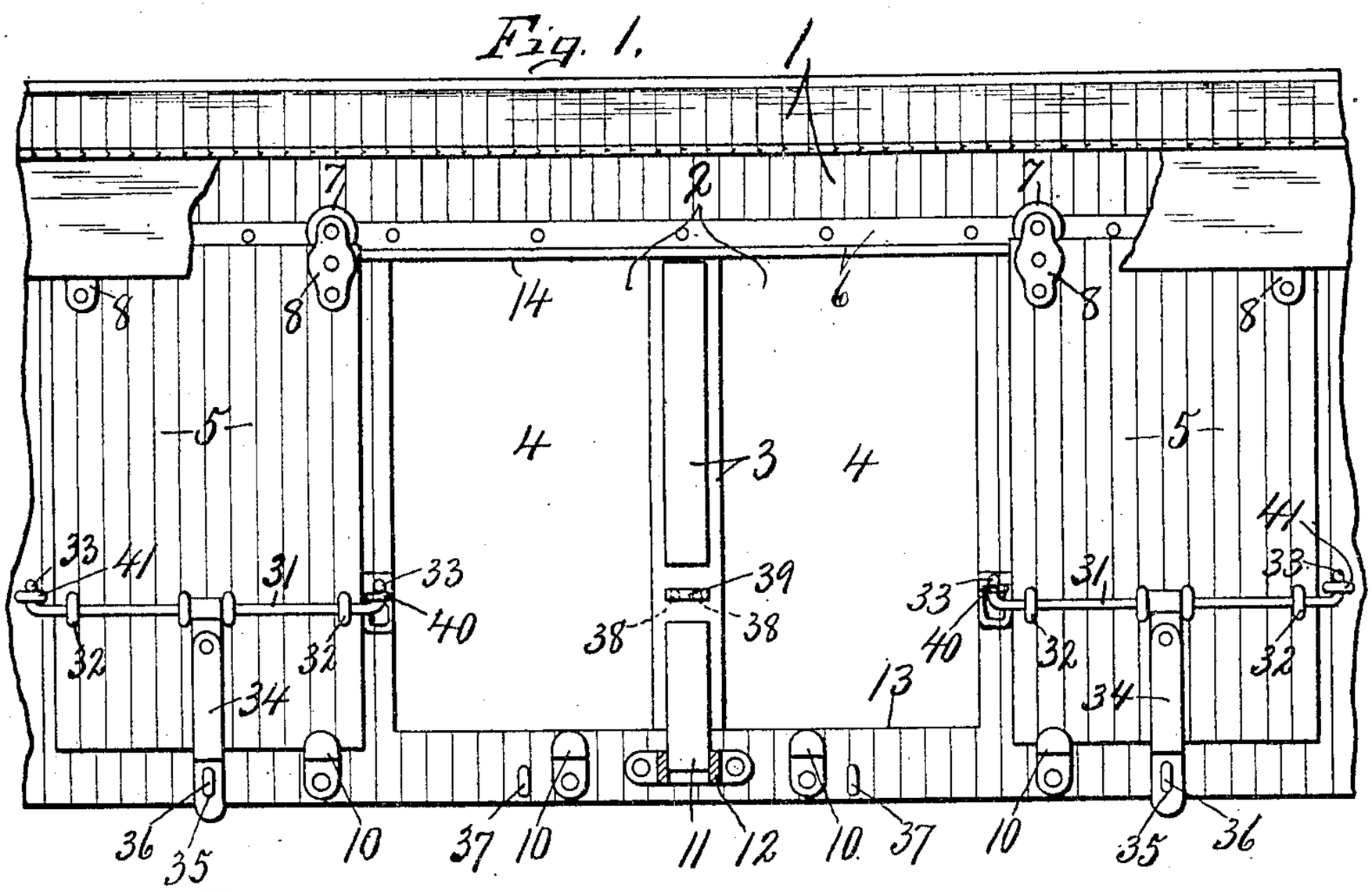

Fig. 2.

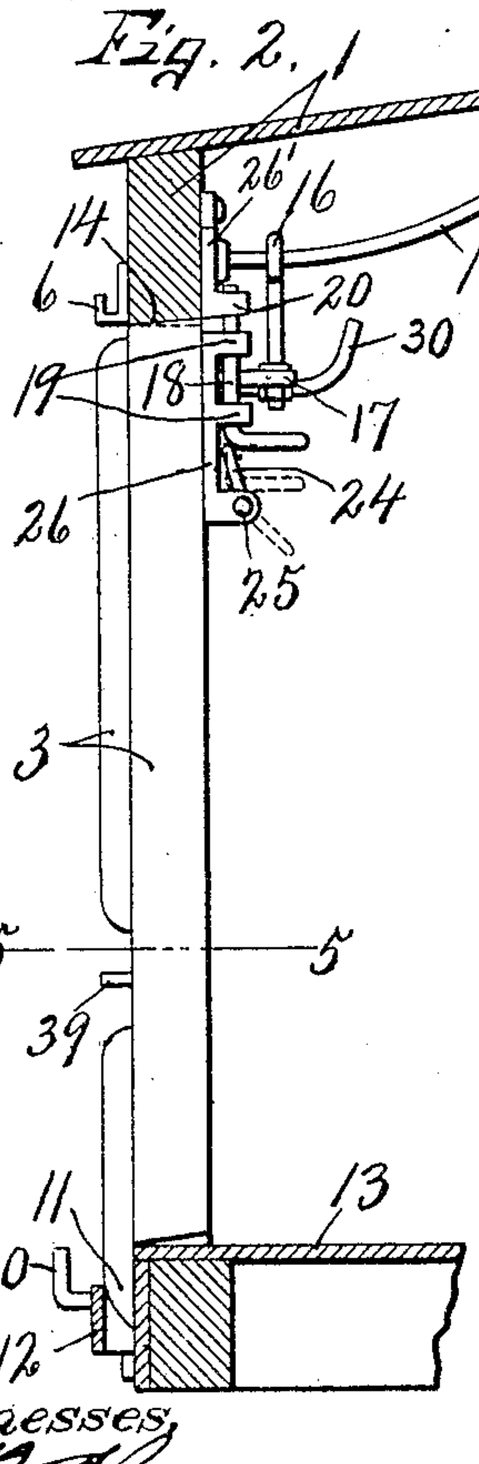

Fig. 3.

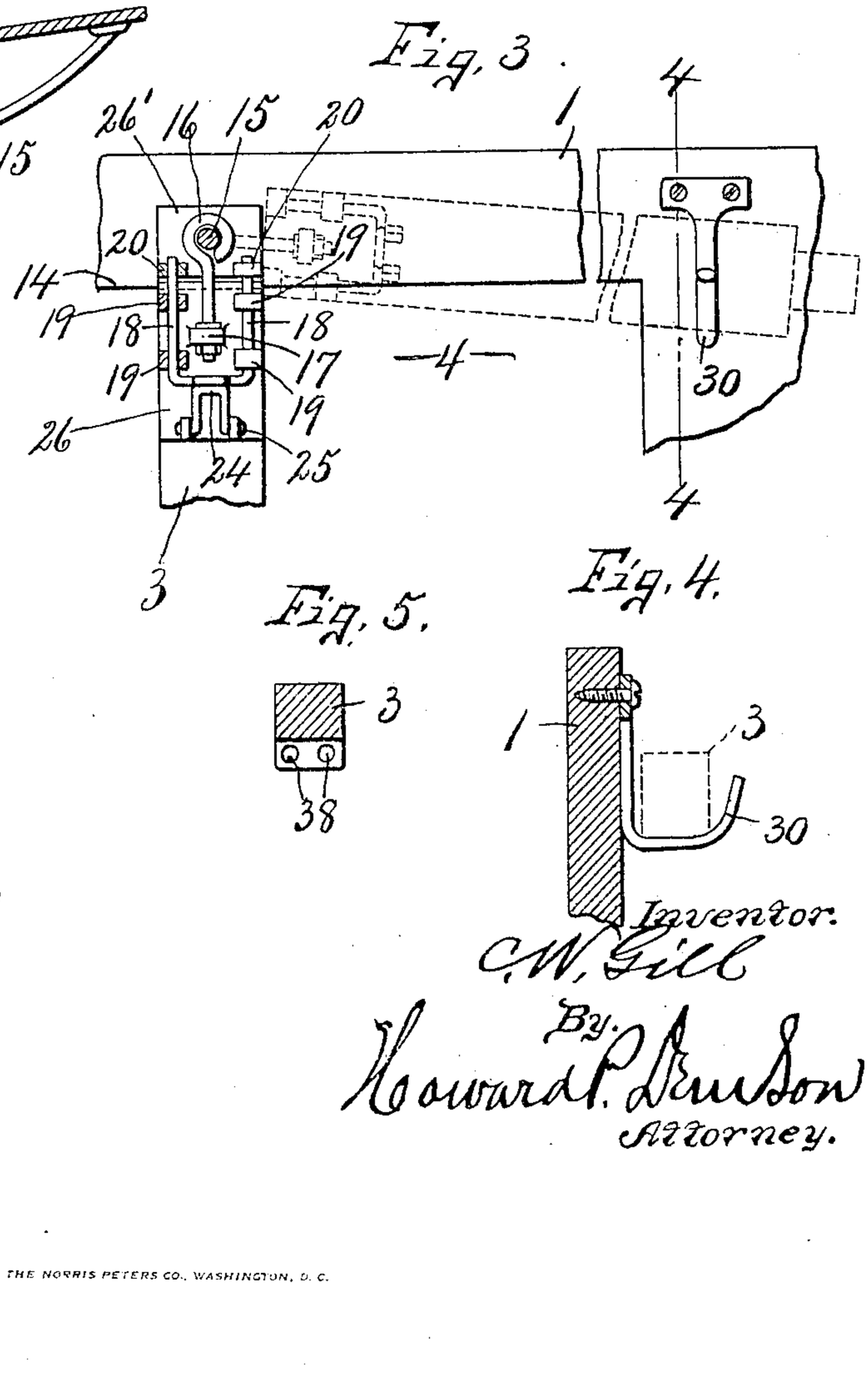

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

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BOX-CAR.

No. 869,630. Specification of Letters Patent. Patented Oct. 29, 1907.

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To all whom it may concern:

Be it known that I, CHARLES W. GILL, of Mexico, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Box-Cars, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in box cars having double-door openings in one or both sides, and a vertical partition bar for each opening to which the double-doors may be firmly locked in their closed position.

My object is to provide the car with double doors and an opening of substantially the same, or slightly less area than the combined area of the doors, and to divide said opening vertically through its longitudinal center by a removable partition bar which serves as a means of attachment for the meeting edges of the doors when in their closed position, thereby enabling either of the doors to be opened separately without releasing the other door to expose substantially one-half of the main opening, or by unlocking both doors from the partition bar the latter may be swung upwardly and sustained in a position above the opening inside of the car to expose the full double opening to permit bulky objects to be readily placed into or removed from the car. In other words, I have sought to provide one or both sides of the car with an opening of substantially twice the size of an ordinary car door opening, and to divide such door vertically substantially midway between its ends by a removable partition or jamb so that either half may be opened or closed irrespective of the other half of the opening.

A further object is to provide separate closures for each half of the main opening and to mount upon each closure or door a locking device by which each door may be separately locked and sealed irrespective of the other door.

A still further object is to mount the movable partition upon a hanger or guide in such manner that it may be firmly locked in its operative position or swung inwardly and upwardly and held overhead above the door opening without liability of displacement during the action of the car, thereby leaving a clear open space of substantially the area of the combined doors.

In the drawings—Figure 1 is a side elevation of a portion of a box car showing the doors open and the partition bar in operative position. Fig. 2 is an enlarged vertical sectional view through the car at one side of the partition bar showing particularly the manner of supporting and locking said bar. Fig. 3 is an inner face view of the upper end of the partition bar and its locking and supporting means. Figs. 4 and 5 are detail sectional views taken respectively on lines 4—4, Fig. 3, and 5—5, Fig. 2.

In order to demonstrate the practicability of my invention, I have shown a portion of a box car —1— having in one side an opening —2— which is divided vertically through its longitudinal center by a movable partition —3— forming opposite door openings —4— which are adapted to be closed by sliding doors —5—. These doors are slidable back and forth toward and from each other and toward and from the partition bar —3—, and for this purpose are suspended upon the track —6— by suitable rollers —7— which are fastened to the upper edges of the door by clips or roller-supporting plates —8—, as best seen in Fig. 1, the track —6— being, of course, above the door opening —4— and extending laterally a sufficient distance beyond the opposite ends of the opening to support the doors when they are moved beyond the ends of their respective openings.

The lower edges of the doors extend slightly below the lower edge of the opening —4— and are guided in suitable grooved brackets —10—, there being preferably two of these brackets for each door located in such manner that when the doors are closed one of the brackets for each door is operative to prevent undue outward swing of such door should it become unlocked or loosened, the other bracket being positioned so as to be engaged by the door when it is being opened before it disengages from the first named bracket or guide and serves to hold the door against undue swinging when such door is open. In other words, one of the guides —10— is located directly below the door opening while the other is located in the same plane, but at one side of the opening, and the distance between each pair of guides is less than the width of the door so that the door will always engage one or the other of the guides or brackets in either its closed or open position.

The partition —3— is coextensive in length with the vertical height of the opening and preferably consists of a comparatively narrow partition having its lower end provided with a depending locking member or projection —11— which is movable into and out of the socket or clip —12— fixed to the side of the car just below and midway between the ends of the door opening, the main portion of the bar being within the opening and between the floor, as —13—, and upper edge, as —14—, of said opening. The upper end of this partition bar is suspended upon an inwardly projecting guide 15— by means of an eye-bolt —16— which is secured to an inwardly projecting lug —17— on the upper end of the bar —3—, the upper end of said bar being held in its operative position by a double sliding bolt —18— which is guided in suitable ways or bearings 19—, and has its upper end movable into and out of similar guides or bearings —20— on the inner side of the lintel of the car.

The locking bolt 18— is movable vertically and is held in its locked position by a movable detent —24—, as best seen in Figs. 2 and 3, said detent being pivoted

at —25— to the same bracket, as —26— of which the bearings —19— are a part.

The bearings —20— are formed upon a separate plate or bracket —26'— which is secured to the inner face of the lintel of the door opening and forms a convenient means of attachment for one end of the guide-rod —15—. This guide-rod —15— is wholly above the door opening and extends some distance inwardly from the lintel of said opening and is preferably curved upwardly and has its inner end secured to the roof of the car, said guide-rod affording a convenient means for supporting the partition-bar —3 and permitting it to be moved or rocked inwardly, upwardly and laterally, in which position its free end is supported in a suitable hook or bracket —30—, best seen in Figs. 3 and 4.

The upper and lower ends of the bar —3— are preferably beveled to allow sufficient clearance between the floor and the lintel to permit the upper end of the bar to be rocked inwardly and upwardly along the guide 15— sufficient to detach the projection —11— on the lower end of said bar from the socket —12—, the lower end of said projection being also beveled or curved to facilitate the removal of the bar —3— from its operative position.

When it is desired to displace the bar —3— from the opening the detent —24—is rocked inwardly and downwardly to the dotted position shown in Fig. 2, out of the path of the lower end of the locking bolt —18—, whereupon said bolt may drop by gravity, or may be forced downwardly by hand, until disengaged from the keepers or sockets —20—. The upper end of the bar may now be forced by hand, inwardly, the eye 16 riding along the guide rod —15—, so that the continued inward movement of the upper end of the bar causes the lower end of said bar to be drawn upwardly out of the socket or keeper —12— and when the upper end of the bar is moved inwardly a sufficient distance to clear the inner side of the lintel such bar may be rocked upwardly toward a horizontal position and its free end engaged with and rested upon the bracket —30—, which latter serves to hold said bar above the door opening, leaving a clear open space of substantially the area of both doors.

Mounted upon each door is a rock-shaft —31— which is journaled near its ends in suitable bearings —32—, the ends of said rock-shaft extending beyond the opposite vertical edges of the door to which it is secured and are provided with lateral hook-shape offsets —33—.

Each rock-shaft is provided with a vertically movable and laterally swinging arm —34— which constitutes a clasp having a slot —35— for receiving staples —36— and —37— on the car in a plane below the lower edge of the door.

The inner hook-shape extremities —33— of the rock-shafts —31— are adapted to engage apertures —38— in a keeper —39— on the bar —3— so as to lock said doors in their closed position, and are also adapted to interlock with vertically swinging apertured locking members —40— at the outer sides of the opening —4— in the same plane as the keeper —39— to lock the doors in their closed positions when said doors are moved laterally in opposite directions beyond the openings —4—.

The outer hook shape extremities —33— at the outer edges of the doors are adapted to engage and interlock with the swinging members —40— when the doors are closed, and are also adapted to interlock with suitable eyes or keepers —41— which are secured to the front of the car a distance from the keepers —40— equal to the distance between the hook-shape members —33— of each door. In other words, when each door is closed it lies between the keeper —39— on the bar —3— and one of the movable keepers —40— and by rocking the arm —34— downwardly the hooks —33 are simultaneously engaged with one of the apertures —38— of the keeper —39— and the corresponding swinging keeper —40— at the opposite side of the door opening —4—, but when the door is moved to its open position it lies between the keepers —40— and —41— so that the inner hook —33— engages the keeper —40— and the outer hook engages the keeper —41— when the arm —34— is rocked downwardly to engage its clasp with the eye —36—. It will thus be seen that the aperture —38— in the keeper —39— and its corresponding movable keeper —40— are the same distance apart as the distance between the hooks —33— of the corresponding door so that by rocking the arm —34— downwardly the corresponding door may be locked in either its closed or open position and when the clasp —34— is engaged with the staple —37— a suitable seal or tie is inserted through the staple to lock the clasp in place.

What I claim is—

1. A box car having a door opening, an inwardly projecting guide, above said opening, a vertical removable partition bar having sliding engagement with said guide and dividing said opening substantially midway between its ends forming two door openings, doors slidable across said openings to and from the bar and means to lock the doors to said bar.

2. In a box car having an opening in one side, a partition bar hinged above the opening and dividing said opening substantially midway between its ends forming two door-openings, doors slidable across said openings to and from the bar, means to lock the doors to the partition bar, and movable means for locking the partition-bar in operative position.

3. A box car having an opening in one side, keepers above and beneath the central portion of the opening and secured to the car, a removable partition bar detachably interlocked with the keepers and dividing the opening substantially midway between its ends, doors movable across the opposite ends of the opening to and from the partition bar, and means to lock the doors in their closed position.

4. A box car having an opening in one side, a removable partition bar dividing the opening between its ends forming smaller door openings, movable means for locking the partition bar to the car, doors movable across opposite ends of the opening to and from the partition bar, movable locking elements on the doors and a keeper on the partition bar adapted to be engaged by said locking elements for holding the doors in their closed position, and additional keepers on the car at opposite sides of the opening adapted to be engaged by said locking element to hold the door in its open position.

5. A box car having an opening in one side, a guide in the car above the opening, a partition bar having its upper end movable along said guide and its lower end adapted to be interlocked with the car below the opening, said partition bar being hinged upon the guide to swing laterally above the opening, and means on the interior to support the free end of the partition bar when swung to its upper position.

6. A box car having an opening in one side, keepers secured to the car above and beneath the opening, a partition bar having its lower end detachably interlocked with the lower keeper, movable means on the upper end of the bar detachably interlocked with the upper keeper whereby the partition bar may be firmly held in operative position or removed, doors movable across the opposite ends of said opening to and from the partition bar, and each

provided with a movable locking member and a keeper on the bar adapted to be engaged by said locking members on the doors.

7. A box car having an opening in one side, keepers above and beneath the central portion of the opening, a partition bar having its lower end detachably engaged with the lower keeper, a movable locking member on the upper end of the bar detachably engaged with the upper keeper, a guide extending inwardly and upwardly from the lintel of the opening, an eye attached to the upper end of the bar and receiving said guide, whereby when the bar is disengaged from its keepers it may be moved inwardly and rocked laterally and upwardly to a substantial horizontal position, and means for holding the bar in its up-position.

8. A box car having an opening in one side, doors movable across opposite ends of the opening, separately movable locking members on said doors, a partition bar at the meeting edges of the doors when closed and provided with a keeper adapted to be engaged by said locking members, and movable members for locking the bar in operative position.

9. A box car having an opening in one side, a removable partition midway between the ends of the opening, movable means for locking the bar in its operative position, a track above the opening, doors supported upon and movable along said track to and from the partition bar, brackets secured to the car in a plane below the opening and provided with grooves in their upper faces of greater transverse width than the thickness of the lower edges of the doors which ride in said grooves to allow either door to be swung outwardly a limited distance, and means to lock the doors to the partition bar.

In witness whereof I have hereunto set my hand this twenty-ninth day of December 1906.

CHARLES W. GILL.

Witnesses:
GEORGE M. BENNETT,
JOHN C. TAYLOR.