J. J. ACKER.

CAR DOOR FASTENER.

APPLICATION FILED AUG. 14, 1909.

972,978. Patented Oct. 18, 1910.

3 SHEETS—SHEET 1.

Fig. 1.

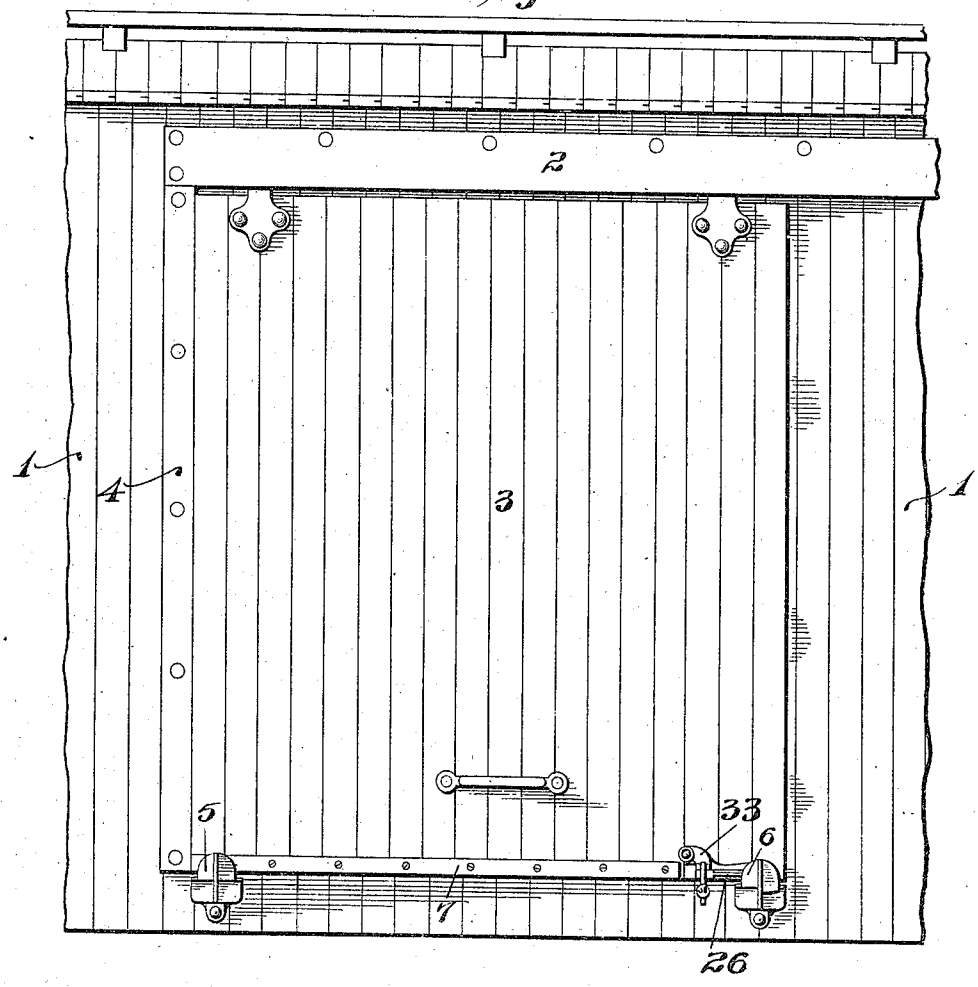


Fig. 3.

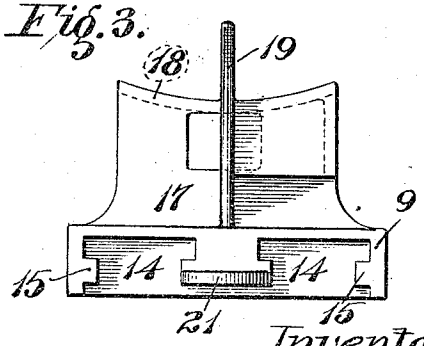
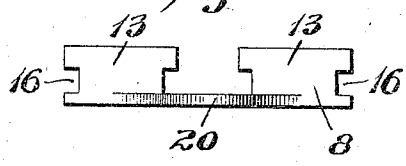


Fig. 2.



Witnesses:

Edgar T. Farmer.

G. A. Pennington

Inventor:

Julius J. Acker

By Church & Church,

Attys.

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3 SHEETS—SHEET 2.

Fig. 4.

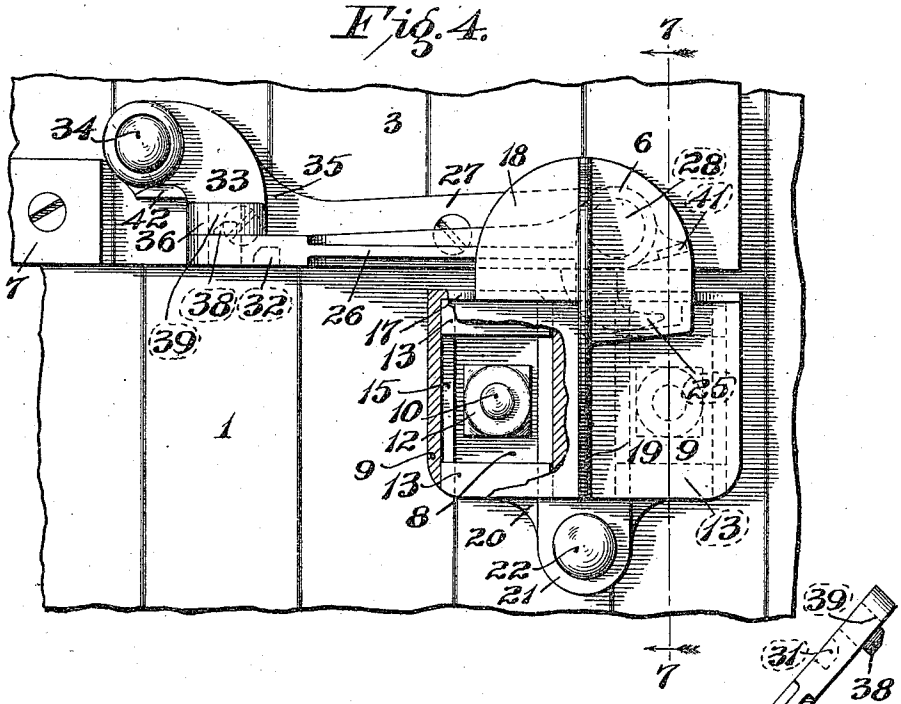
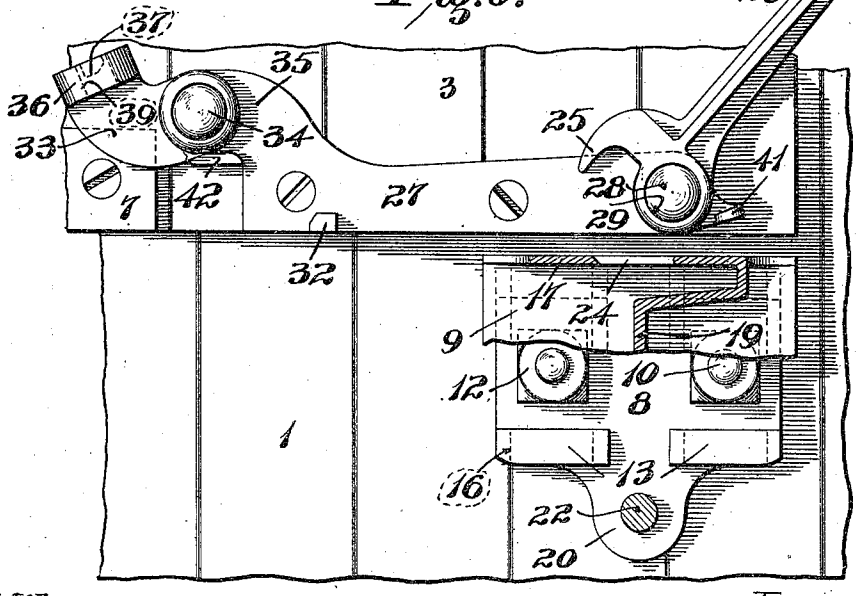


Fig. 5.



Witnesses:

Edgar T. Farmer.

G. A. Pennington

Inventor:

Julius J. Acker,

By Carter & Carter

attys.

J. J. ACKER.

CAR DOOR FASTENER.

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3 SHEETS—SHEET 3.

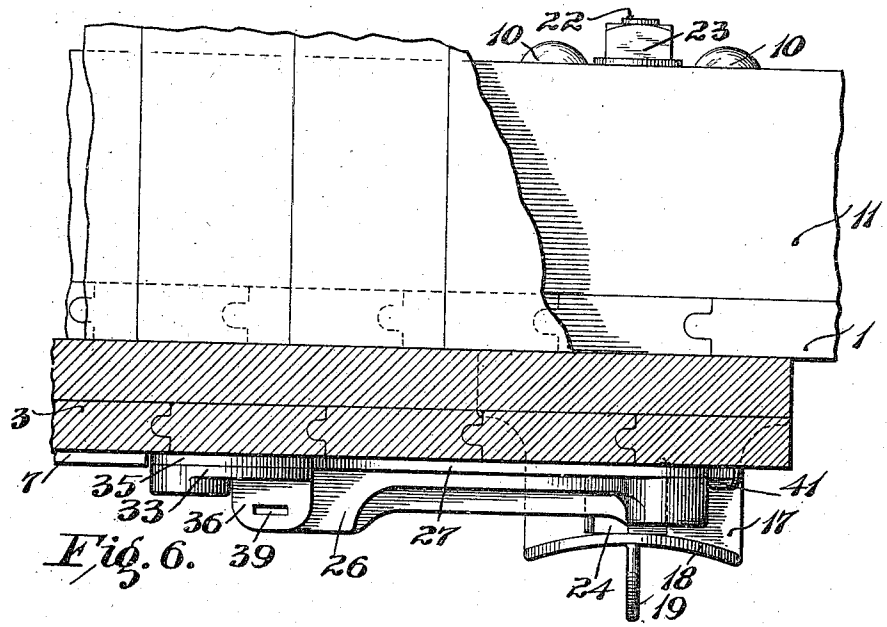

Fig. 6.

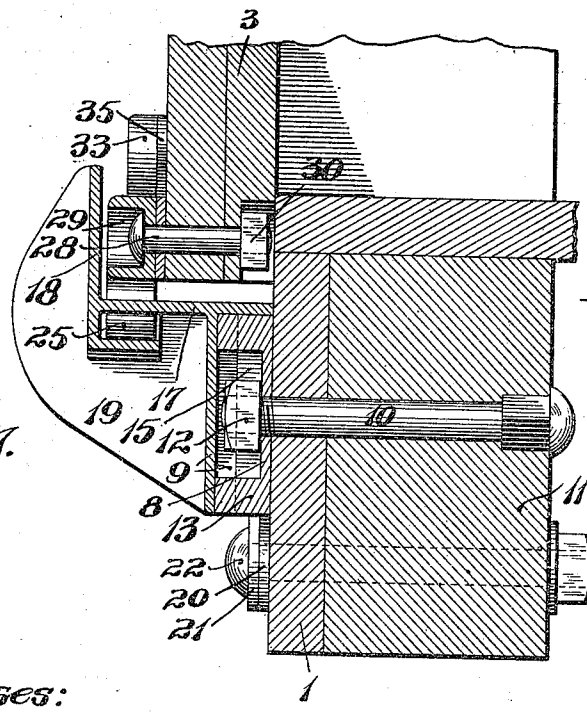

Fig. 7.

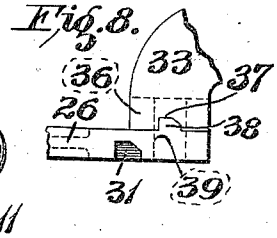

Fig. 8.

Witnesses:

Edgar T. Farmer.

G. A. Pennington

Inventor:

Lucius J. Acker

By Cowan & Cowan

attys.

UNITED STATES PATENT OFFICE.

JULIUS J. ACKER, OF HORTON, KANSAS, ASSIGNOR OF TWENTY-FOUR AND ONE-HALF ONE-HUNDREDTHS TO CYRUS L. BUNDY, OF JERSEY CITY, NEW JERSEY, AND FIFTY-ONE ONE-HUNDREDTHS TO WALTER P. MURPHY, OF ST. LOUIS, MISSOURI.

CAR-DOOR FASTENER.

972,978. Specification of Letters Patent. **Patented Oct. 18, 1910.**

Application filed August 14, 1909. Serial No. 512,782.

To all whom it may concern:

Be it known that I, JULIUS J. ACKER, a citizen of the United States, and a resident of the city of Horton, county of Brown, and State of Kansas, have invented a new and useful Car-Door Fastener, of which the following is a specification.

This invention relates to car doors and more particularly to side doors for freight cars.

It has for its principal objects to prevent the burglarizing of freight cars without breaking the seal, to secure a perfect lock, to prevent the door from being damaged when the car receives a hard shock, and to attain certain other advantages hereinafter more fully appearing.

The invention consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings which form part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a side elevation of a portion of a freight car adjacent to the door opening, the door being equipped according to my invention and shown in closed position; Fig. 2 is a bottom end view of the inner member of the retaining bracket which coöperates with the locking lever; Fig. 3 is a bottom end view of the outer member of the retaining bracket; Fig. 4 is a fragmentary view, partly in section, showing the locking members which coöperate with the retaining bracket in closed position; Fig. 5 is a similar view showing the locking lever released from the retaining bracket; Fig. 6 is a fragmentary view of the parts shown in Fig. 4, partly in horizontal section and partly in top plan; Fig. 7 is a section on the line 7—7 of Fig. 4; and, Fig. 8 is a fragmentary view of the inner side of the sealing end portion of the locking lever and the retaining latch which coöperates therewith.

In the drawings the side portion of an ordinary box car 1 adjacent to the door opening is shown. Suspended from a horizontal trackway 2 which is secured on the side of the car above the door opening is an outside door 3 which can be of any ordinary construction. The door is closed against a vertical strip 4 or other suitable front stop which is secured on the side of the car adjacent to the side of the opening. The bottom edge portion of the door is guided and held from swinging away from the side of the car by brackets 5, 6, secured to the side of the car below the door opening and near the opposite sides thereof so as to be located at the front and rear edge portions, respectively, of the door when it is closed. To prevent the wooden sheathing from wearing away, a metal rubbing strip 7 is secured on the outer face of the door along the bottom edge portion thereof so as to bear against the brackets 5, 6.

The guide and retaining brackets 5, 6 each comprise an inner member or casting 8 which is adapted to be secured on the car body and an outer member or casting 9 which is slidably fitted on said inner member. The inner member comprises a plate which is perforated for the securing bolts 10 which are passed through the side sill 11 from the inner side thereof, as shown more clearly in Fig. 7, or through the side wall of the car as the case may be. Nuts 12 are threaded on the outer end portions of the bolts 10 and tightened against the outer face of the inner member 8. Said bolts 10 are preferably carriage bolts. That is, they are made square adjacent to the head so as to prevent the bolt from turning and the bolt head is made button-shape so as not to afford a hold for a wrench or other instrument by the use of which the bolts might be otherwise forcibly turned without first removing the nuts.

On the outer face of the inner member 8 are four lugs 13 which are undercut at their ends or T-shaped as shown. These lugs are arranged in two alining pairs at the opposite side portions of the member. The outer member 9 is provided with two parallel mortises or grooves 14 in its inner side, one for each alining pair of lugs 13. Said mortised portions have ribs 15 extending lengthwise thereof which are adapted to fit the undercuts or notches 16 of the lugs 13 on the inner member 8. The outer member 9 has an outwardly projecting bracket portion comprising a horizontal web 17 which is a continuation of the end wall of the mortised portion of the member. At the outer edge of the web 17 is an upstanding arcuate door-retaining and guiding lug 18; and said web and lug are stiffened by a rib 19.

Extending from the middle of the open

end of the mortised portion of the member 9 is an ear 21 which is arranged to overlap a similar ear 20 on the inner member 8 when the outer member is slid thereon and the end wall of the mortised portion bears against the two lugs 13 adjacent thereto. The overlapping ears 20, 21 are provided with registering perforations through which a securing bolt 22 is inserted into the side sill 11 or side wall of the car, as the case may be. As shown, the bolt is inserted through the side sill and secured on the inner side thereof by a nut.

The door guide brackets 5, 6 are located so that their web portions 17 are just below the bottom edge of the door and the lug 18 projects above said bottom edge, and until the door is moved to clear the brackets, the outer members 9 cannot be slid off of the inner members 8 even if the bolts 22 should be removed. Therefore, as the nuts 12 on the bolts 10 are incased within the pockets provided by the spaces in the mortises 14 between the lugs 13 and cannot be removed until the outer member 9 is slid off of the inner member 8, obviously the door lock has to be opened before the door can be moved to clear the brackets. The locks of the freight car doors are usually sealed after the loaded car is closed, and if the door is opened by an unauthorized person, the broken seal should be evidence that the car has been opened and the contents removed or tampered with. It has been found from experience, however, that cars have been burglarized without breaking the seal by removing the ordinary door-guiding and retaining brackets and then replacing them to hide the outward evidence that the car had been opened. The door bracket 6 is preferably arranged to serve as a keeper for the lock.

The web 17 as shown more clearly in Figs. 3 and 5, is provided with a slot 24 in which the hooked portion or lug 25 on a door-locking lever 26 is adapted to engage. The lever 26 is preferably pivotally mounted over a wear plate 27 which is secured to the outer side of the door at the lower edge thereof. The pivot bolt 28 for the lever 26 is provided with a button shaped head which is sunk into a circular pocket 29 in the lever and the bolt is passed through a perforation in the wear plate and secured by a nut 30 on the inner side of the door. The lever 26 is so located that when it is in locking position the lug 25 bears against the edge of the slot 24 in the bracket member and holds the front edge of the door tight against the strip 4 or any other suitable stop which may be provided in its place. The lever 26 is provided with a notch 31 in its lower inner edge portion near its free end which is adapted to fit over a counterpart supporting lug 32 on the lower edge portion of the outer face of the wear plate 27. A latch member or dog 33 is pivotally mounted on a bolt 34 which is passed through an offset extension 35 of the wear plate and secured on the inner side of the door in a manner similar to the pivot bolt 28 for the locking lever. On the free end of the latch member or dog is a lateral lug 36 which is adapted to rest flatwise upon the upper side of the end portion of the locking lever 26, as shown more clearly in Figs. 4 and 6. The lug 36 is provided with a notch 37 in its lower inner edge which is adapted to fit over a counterpart lug 38 on the upper inner edge portion of the locking lever. The lug 36 and coöperating end portion of the locking lever are provided with registering slots or perforations 39 through which the strap or wire loop of an ordinary seal (see Figs. 1 and 6) may be passed. The wear plate 27 is provided with lugs 41, 42, which are arranged to support the locking lever and latch member, respectively, in open position.

By the construction and arrangement shown and described it is impossible to raise the lever 26 from locked position as shown in Fig. 4 without first swinging the latch member 33 out of the way as shown in Fig. 5. Therefore, if the lock is sealed the seal will have to be broken or the door and castings mutilated before the door can be opened.

Obviously, my device admits of considerable modification without departing from my invention, and therefore, I do not wish to be limited to the specific construction and arrangement shown.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination with a car body having a door opening in the side thereof, an outside door arranged to close said opening, and a stop secured to the side of the car body and adapted to coöperate with the forward edge of the door in the closed position thereof, of a bracket secured to the side of the car body below the door opening, but close to the plane of the bottom edge of the door, said bracket having an outwardly projecting horizontal portion which is provided with an opening therein, a locking lever pivotally mounted at one end on the outer face of the door near the bottom edge thereof so as to swing in a vertical plane, said locking lever having a substantially right angular lug at its pivot end which is adapted to engage the rear edge portion of the opening in said horizontal portions of the bracket and hold the door with its forward edge in contact with said stop, means for supporting the free end of said locking lever when said lever is in locking position, and means on the outer face of the door for engaging the free end of said locking lever to hold the same on said support.

2. The combination with a car body hav-

ing a door opening in the side thereof, an outside door arranged to close said opening, and a stop secured to the side of the car body and adapted to coöperate with the forward edge of the door in the closed position thereof, of a bracket secured to the side of the car body below the door opening, but close to the plane of the bottom edge of the door, said bracket having an outwardly projecting portion which is provided with an opening therein, a locking lever pivotally mounted on the outer face of the door near the bottom edge thereof so as to swing in a vertical plane, said locking lever having a substantially right angular lug at its pivot end which is adapted to engage the rear edge portion of the opening in said bracket and hold the door with its forward edge in contact with said stop, a laterally projecting lug on the outer face of the door which is arranged and adapted to support the free end of said locking lever when said lever is in locking position and a latch pivotally mounted on the outer face of the door above said outwardly projecting lug and arranged and adapted to engage the free end of said locking lever to hold the same on said lug, the end portion of the locking lever and the latch member which coöperates therewith being arranged to receive a sealing band or loop.

3. The combination with a car body having a door opening in the side thereof, and an outside door arranged to close said opening, of a bracket secured to the side of the car body below the door opening, but close to the plane of the bottom edge of the door, said bracket having an outwardly projecting portion having an opening therein, a locking lever pivotally mounted on the outer face of the door near the bottom edge thereof so as to swing in a vertical plane parallel with the outer face of said door, said locking lever having a substantially right angular lug near its pivot end, the end portion of said lug being hooked toward the pivot end of said lever and adapted to swing through the opening in the outwardly projecting portion of said bracket whereby said lug coöperates with the rear edge portion of said opening to hold the door in closed position, means for supporting the lever in substantially horizontal locking position, a latch member pivoted on the outer face of the door and adapted to engage the free end of said locking lever and hold the same in locking position, said latch member and the coöperating end of the locking lever being arranged to receive a sealing band or loop.

4. The combination with a car body having a door opening in the side thereof, and a door constructed to close said opening, of a retaining bracket secured to the side of the car body below the door opening but close to the plane of the bottom edge of the door, said bracket comprising an inner member which is secured by bolts inserted from the inner side and having securing nuts on their outer ends, and an outer member slidably mounted on said inner member so as to inclose said securing nuts and said outer member being removable only in an upward direction, a laterally projecting portion on said outer bracket member, and a locking lever pivotally mounted on the outer face of the door near the bottom edge thereof and having a lug near its pivot end which is arranged and adapted to enter an opening in said bracket extension and coöperate with the rear edge portion of said opening to hold the door in closed position, means for supporting said locking lever in substantially horizontal locking position with the free end of the lever toward the front edge of the door, and a latch member pivotally mounted on the outer face of the door to engage and hold the free end of the locking lever in its locking position.

5. The combination with a car body having a door opening in the side thereof, and a door constructed to close said opening, of a bracket secured to the side of the car body below the door opening but close to the plane of the bottom edge of the door, said bracket comprising an inner member secured by bolts inserted from inside and having securing nuts on their outer ends and said inner member having vertically disposed undercut lugs on their outer faces, and an outer member having counterpart mortised portions which are adapted to fit said undercut lugs, whereby said outer member is slidably secured to the inner member and removable therefrom only in an upward direction, a lateral extension on said outer member having an opening therein, a locking lever pivotally mounted on the outer face of the door near the lower edge thereof and arranged to swing in a vertical plane parallel with the outer face of the door, said locking lever having a substantially right angular lug near its pivot end which is adapted to enter the opening in said lateral bracket extension and coöperate with the rear edge portion thereof to hold the door in closed position, a projection on the outer face of the door near the lower edge thereof and arranged and adapted to fit a counterpart seat in the free end portion of said locking lever to support the same in substantially horizontal locking position with its free end portion toward the front edge of the door, and an angular latch member pivotally mounted on the outer face of the door adjacent to said supporting projection and adapted to engage the free end of said locking lever in its locking position, said latch member and said locking lever being arranged to be sealed by a single sealing device.

6. The combination with a car body having a door opening in the side thereof, and a door constructed to close said opening, of a bracket secured to the side of the car body below the door opening but close to the plane of the bottom edge of the door, said bracket comprising an inner member which is secured by bolts inserted from the inside and having the securing nuts on their outer ends, said inner member having vertically alining upper and lower undercut lugs on its outer face, and an outer member having counterpart mortised portions adapted to fit said undercut lugs whereby said outer member is slidably mounted on the inner member and removable therefrom only in an upward direction, a lateral extension on said outer member having an opening therein, a locking lever pivotally mounted on the outer face of the door adjacent to the lower edge thereof and in a vertical plane substantially in line with the middle of said bracket when the door is in closed position, said locking lever having a substantially right angular lug near its pivot end which is arranged to enter the opening in said lateral bracket extension and coöperate with the rear edge portion of said opening to hold the door in closed position, a lateral projection on the outer face of the door near the lower edge thereof arranged and adapted to fit a counterpart notch in the free end portion of said locking lever so as to support said lever in substantially horizontal locking position with its free end projecting forwardly, and a pivotal latch member mounted on the outer face of the door adjacent to said supporting projection, said latch member having a laterally projecting end portion which is adapted to rest flatwise upon the free end of said locking lever and having a notch therein which fits a counterpart projection on said locking lever, whereby said locking lever is held in locking position, and said laterally projecting end portion of the latch member and the coöperating end of the locking lever having alining holes therethrough which are arranged and adapted to receive a sealing band or loop.

7. The combination with a car body having a door opening in the side thereof, and an outside door constructed to close said opening, of a bracket comprising an inner supporting member secured to the side of the car body below the door opening but close to the plane of the bottom edge of the door and an outer keeper member slidably mounted on said inner member and removable therefrom only in an upward direction, said outer member being adapted to conceal the securing devices for said inner member and having an outwardly projecting portion, a locking lever pivotally mounted on the outer face of the door near the bottom edge thereof and having a lug near its pivot end which is arranged to engage said bracket to hold the door in its closed position, means for supporting the free end of said locking lever in its locking position, and a latch member pivotally mounted on the door and adapted to engage the upper side of said locking lever in its locking position, said latch member and said lever being arranged to receive a sealing device when in coöperative position.

8. The combination with a car body having a door opening in the side thereof, and an outside door constructed to close said opening, of a separable bracket comprising an inner supporting member which is secured to the side of the car body close to the plane of the bottom edge of the door and an outer keeper member having an interlocking slidable connection with said inner supporting member whereby said outer keeper member is removable only in an upward direction, said outer keeper member being adapted to conceal the securing device for said inner supporting member and having an outwardly projecting portion, a locking lever pivotally mounted on the outer face of the door near the bottom edge thereof and having a lug near its pivot end which is arranged to engage said bracket, means for supporting the free end of said locking lever in its locking position, and a latch member pivotally mounted on the door and adapted to engage said locking lever in its locking position, said latch member having an outturned end portion adapted to rest flatwise on said locking lever, said latch member and said locking lever having alining openings adapted to receive a sealing band.

Signed at Horton, county of Brown, State of Kansas, this 11th day of August, 1909.

JULIUS J. ACKER.

Witnesses:

JOHN J. LINDSAY,

EVAN H. RICHARDSON.