

No. 895,988.

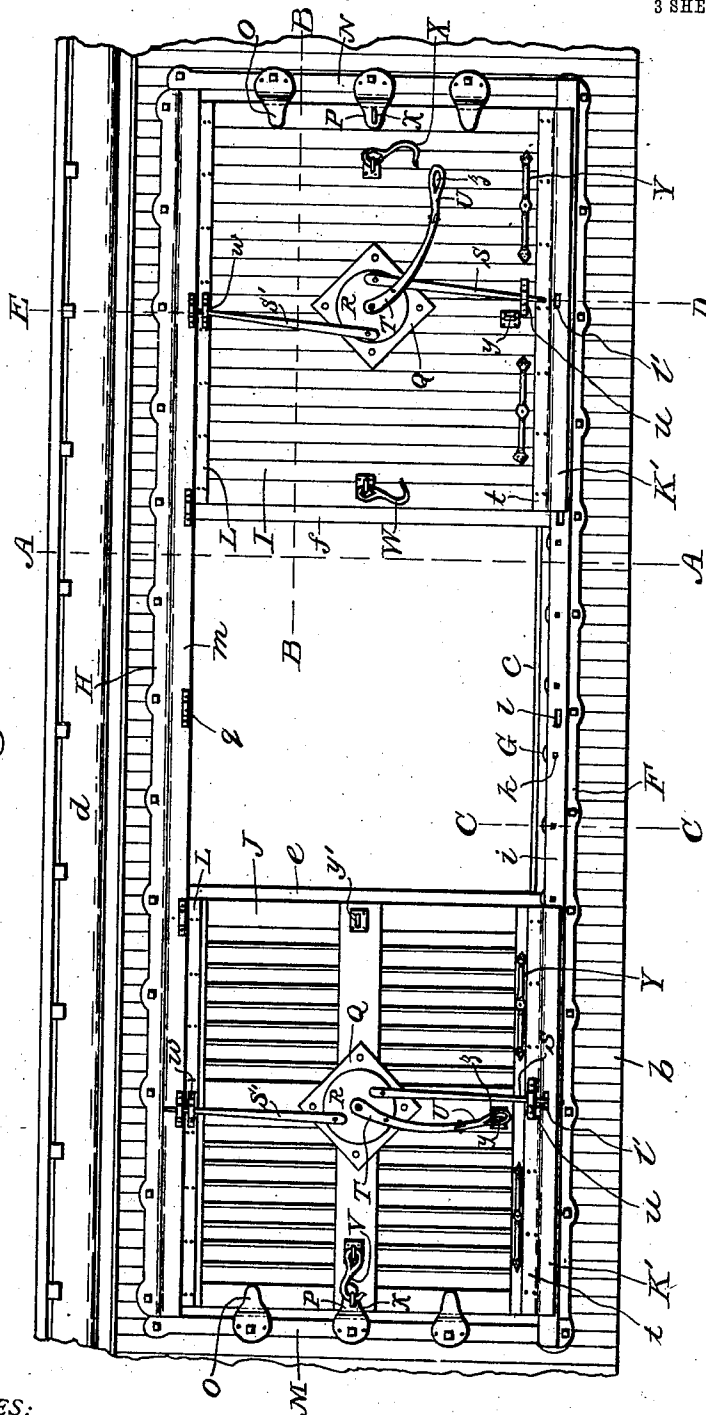
PATENTED AUG. 11, 1908.

DE WITT C. EDMONDSON.  
FREIGHT CAR DOOR AND HANGER.

APPLICATION FILED APR. 27, 1906.

3 SHEETS—SHEET 1.

Fig. 1.



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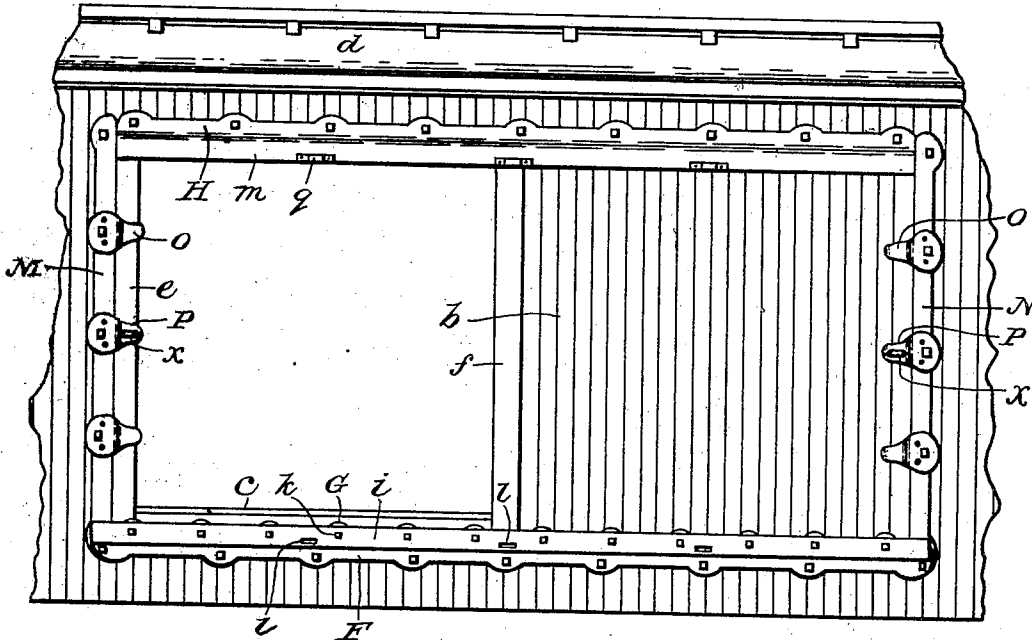
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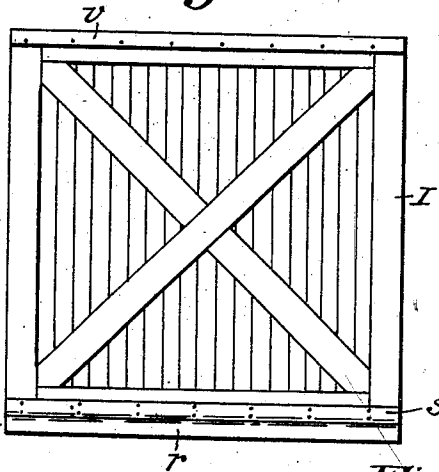
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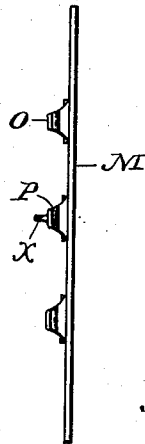
*Fig. 2.*



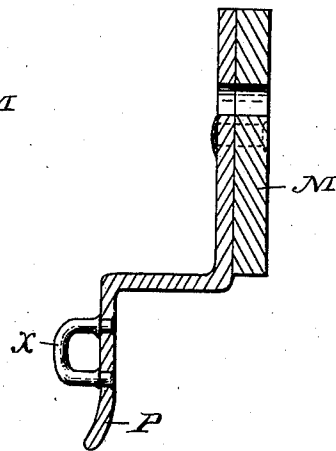
*Fig. 3.*



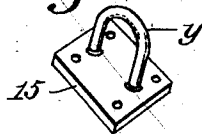
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



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3 SHEETS—SHEET 3.

Fig. 7.

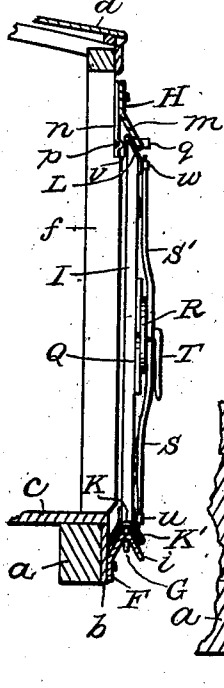


Fig. 8.

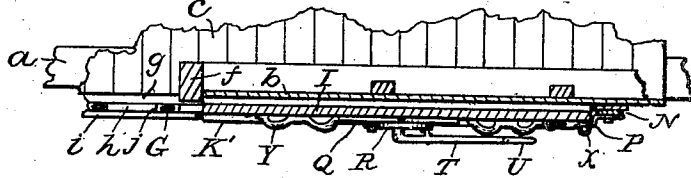


Fig. 9.

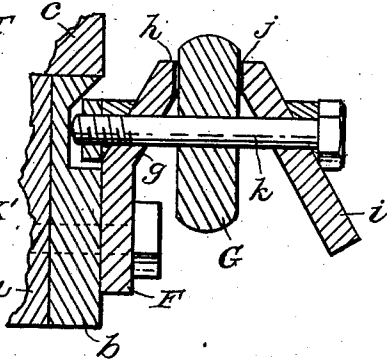


Fig. 10.

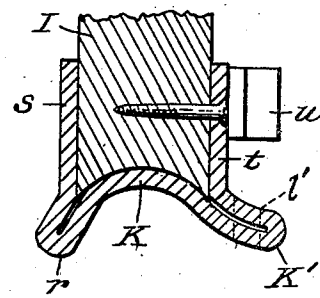


Fig. 11.

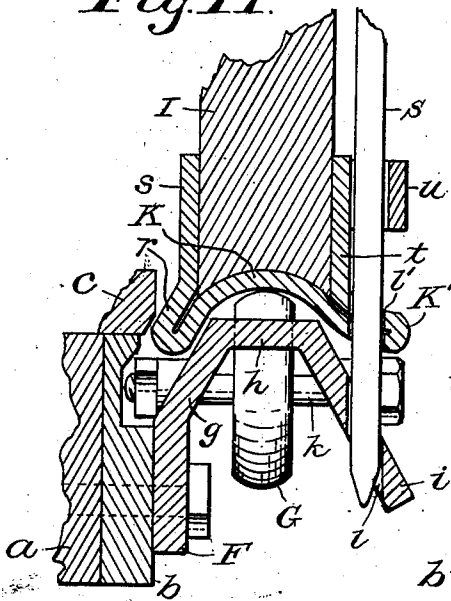


Fig. 12.

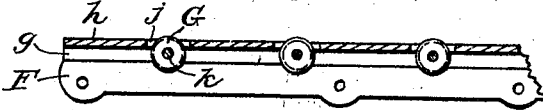


Fig. 13.

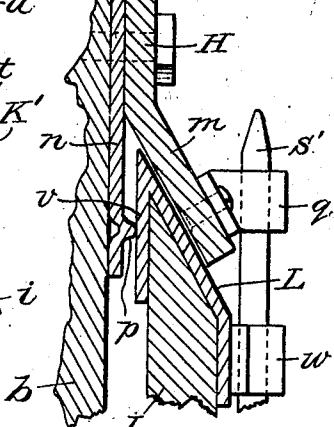
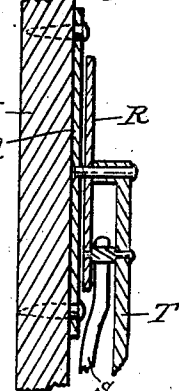


Fig. 14.



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# UNITED STATES PATENT OFFICE.

DE WITT C. EDMONDSON, OF EVANSVILLE, INDIANA.

## FREIGHT-CAR DOOR AND HANGER.

No. 895,988.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed April 27, 1906. Serial No. 313,937.

*To all whom it may concern:*

Be it known that I, DE WITT C. EDMONDSON, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented new and useful Improvements in Freight-Car Doors and Hangers; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to railway freight cars, of the type that is known as box cars, the invention having reference particularly to the doors and the hangers thereof.

Objects of the invention are to provide improved car doors and hangers that may be relied upon to operate freely; to provide hangers which shall prevent loss of doors in transit and which will not be liable to fracture in the severe service incident to the movement of cars, and to provide hangers that will be adapted to be made mainly of wrought or rolled iron, to the end that economy in construction and maintenance of car doors may be attained in the highest degree.

With the above-mentioned and minor objects in view, the invention consists in a car provided with doors of improved construction with reference to the supporting and guiding parts thereof, a door having improved locking and latching devices, and improved and novel supports and guides for the doors; the invention consisting further in the novel parts and in the combinations and arrangements of parts, as hereinafter particularly described and referred to in the appended claims.

Referring to the drawings, Figure 1 is a fragmentary side elevation of a box-car body having a tight door and a ventilating door mounted thereon in open positions, all constructed substantially in conformity to the invention; Fig. 2, a fragmentary side elevation of the car body equipped with the hangers and attachments modified for a single door, the latter being omitted from the view; Fig. 3, an inside elevation of the tight door detached from the car; Fig. 4, a side elevation of one of the improved door stops; Fig. 5, a transverse sectional view of the door stop taken approximately at the middle portion thereof; Fig. 6, a perspective view of one of the fastening eyes of the doors; Fig. 7, a fragmentary vertical sectional view on the

line A—A in Fig. 1; Fig. 8, a fragmentary horizontal sectional view on the line B—B in Fig. 1; Fig. 9, a fragmentary vertical sectional view on the line C—C in Fig. 1; Fig. 10, a fragmentary vertical sectional view showing the lower part of the door and shoe thereon; Fig. 11, a fragmentary vertical sectional view, as at the line D in Fig. 1; Fig. 12, a fragmentary vertical longitudinal sectional view of the lower door rail; Fig. 13, a fragmentary vertical sectional view, as at the line E in Fig. 1, and, Fig. 14, a fragmentary vertical sectional view of the middle portion of a door and lock-bolt appliances.

Similar reference characters in the different figures of the drawings designate corresponding elements or features.

In the drawings, *a* designates a side-sill of the car body; *b*, the siding; *c*, the car floor; *d*, the roof; and *e* and *f*, the door-posts at opposite sides of a door way of the car, all of ordinary construction.

In the practical embodiment, the invention includes a lower door rail *F* which is composed of rolled metal and suitably secured against the siding *b* opposite to the side sill *a*, the rail being so formed as to have an inclined guide side *g* adjacent to the siding, a narrow top *h*, and an outer inclined guide side *i* extending downwardly from the top *h*, so that in the cross-section of the rail it resembles that of the frustum of a cone. The top *h* of the rail has a suitable number of apertures *j* therein in which rollers *G* are arranged and mounted on axles *k* that are supported by the inclined guide sides *g* and *i*, the rollers being nearly incased in the hollow rail with the tops of the rollers slightly above the tops *h* of the rail. The side *i* of the rail has a suitable number of apertures *l* therein to receive lock-bolts of the doors.

An upper guide rail *H* of novel form is provided and composed of rolled metal, and it is suitably secured somewhat below the edge of the roof *d* to the side of the car body, the rail being so formed as to have an inclined guide lip *m* extending downwardly, and in some cases a guide-plate *n* having a guide rib *p* is interposed, as shown, between the siding *b* and the rail. The lip *m* of the rail *H* has suitable lock-bolt keepers *q* secured thereto to receive lock bolts of the doors.

The rails *F* and *H* are usually of suitable length to extend across the doorway and beyond in both directions, so as to accommodate two doors as shown in Fig. 1, a tight

door I and a ventilating door J, one at either side of the open doorway, so that either door may be moved for closing the doorway. The framing of the doors may be variously constructed, and each door has a grooved bottom in which is a metal shoe K formed of rolled metal and bent over so as to form an outer guide lip K' of the metal doubled adapted to extend over the side *i* of the lower rail while the shoe bears on the rollers G. The shoe has also an inner guide lip *r* formed of the metal doubled upon itself and adapted to extend over the guide side *g* of the rail F. Also the shoe is provided with a pair of flanges *s* and *t* that are formed of the bent up metal and embrace the lower inner and outer sides of the door to which they are secured for attaching the shoe to the door. A suitable number of lock-bolt guides *u* are attached to the flange *t*, and there are apertures *l'* in the lip K' serving as keepers for the bolts.

The top of each door is beveled and is provided with a face-plate L that fits and is secured to the beveled edge of the door and has a flange *v* extending along the rear side of the door, so as to engage the rib *p* while the beveled faced front of the door engages the lip *m* of the rail H. A suitable number of lock-bolt guides *w* are attached to the face plate L.

In order to effectually retain the car doors on the lower rail and to prevent movement of the doors beyond the ends of the rails to cause them to become lost in transit, a pair of substantial stops M and N are provided and secured in a firm manner to the side of the car body at the ends of the door rails; the stops being alike but applied to the car in reverse order, each stop being composed of a wrought bar and having a suitable number of guide fingers O and also a guide finger P secured thereto, the finger P having an eye *z* attached thereto, for assisting in holding the door open when the car may be in motion.

At the middle of each door I and J a base plate Q is secured to the outer side thereof, a disk R is pivoted to the plate, and two lock-bolts S and S' are pivoted to the disk and extend through the guides *u* and *w* respectively, the lock-bolt S being projectable through the apertures *l'* and *l*, and the lock-bolt S' being projectable through the keepers *q*, for locking the door in different positions, either closed, partially closed, or open. A lever T is secured rigidly to the disk R and has a handle U pivoted thereto that has an opening *z* in its end, there being an eye *y* attached to the car body below the plate Q to which the handle may be locked or sealed, the eye having a holding plate 15, as in Fig. 6.

The door J is provided with a hook V at an end thereof to engage the eye *z* of the finger P that is part of the stop M, and the opposite end of the door has an eye *y'* attached thereto that may be engaged by a hook W

which is connected to the door I, so that the two doors may be coupled together. The door I has also a hook X connected thereto for engagement with the eye *z* of the finger P that is part of the stop N.

When a side of a car is to have only one door, the stop M is placed adjacent to the door post *e*, as in Fig. 2. It will be observed that the door stops extend from the rail F to the rail H so that a considerable number of bolts or screws may be used to firmly attach the stops to the car body in order that the stops may not become loose, the rails and the stops forming together a frame in which the door or doors are securely confined. The doors are provided with handles Y.

In practical use, the doors will move easily on the rollers and should be hooked to the stops when open, and coupled together when either door is closed, and they should also be locked by means of the lock-bolts in any position.

The advantageous results attained by the above-described construction will be fully understood as being obvious from the detailed description of construction; suffice it to say that cost charges for lost doors may be avoided by the use of the invention.

Having thus described the invention, what is claimed as new is—

1. A car including a lower rail having an inclined guide side provided with a plurality of apertures, an upper rail having a plurality of keepers attached thereto, a door mounted between the rails and having mounted thereon a pair of lock-bolts projectable into the apertures and the keepers of the rails, and stops for the door.

2. A car including a lower rail having oppositely-inclined sides the outer one of which has apertures therein, a door provided at the bottom thereof with a shoe having guide lips for engagement with the inclined sides, one of which lips has an aperture therein and having a lock-bolt guide attached thereto, an upper guide rail for the door, and a lock-bolt mounted on the door in the guide of the shoe-lip and projectable into an aperture of the inclined side of the lower rail.

3. In a car door and hanger, the combination with a car body having a lower door rail, of a door provided with a shoe on the bottom thereof to cooperate with the rail, the shoe comprising a concavo-convex bearing part extending under the door and two oppositely-extending guide lips formed of the metal of the shoe doubled, one layer of each lip extending against a side of the door as a retaining flange, there being two flanges, one at either side of the door and secured thereto.

4. In a car door and hanger, the combination with a car-body having a lower rail with apertures therein to receive a lock-bolt, of a door provided with a shoe on the bottom thereof to cooperate with the rail, the shoe

having a lateral guide-lip with an aperture therein, and a lock-bolt mounted on the door in the aperture of the guide-lip and projectable into an aperture of the lower rail.

5 5. In a car door and hanger, the combination with a car body having a lower rail with apertures therein to receive a lock-bolt, of a door provided with a shoe on the bottom thereof to coöperate with the rail, the shoe comprising a bearing part extending under the door and also a flange part at a side of the door having a lock-bolt guide attached thereto, and a lock-bolt mounted on the door in the lock-bolt guide and projectable into an aperture of the lower rail.

10 6. In a car door and hanger, the combination with a car body having a lower rail and a door supported thereby, of a guide-plate secured to the body and extending behind and

also above the door, an upper rail secured to the body against the guide plate and having a plurality of lock-bolt keepers attached thereto, and a lock-bolt mounted on the door and projectable into either one of the keepers.

20 7. In a car door and hanger, the combination with a car body having an upper rail with keepers mounted thereon, of a door with a face plate secured thereto, a lock-bolt guide secured to the face plate, and a lock-bolt mounted on the door in the guide and projectable into either one of the keepers.

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

DE WITT C. EDMONDSON.

Witnesses:

JOHN F. HARPER,  
HENRY C. LAUER.