

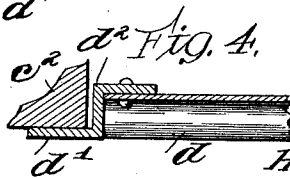
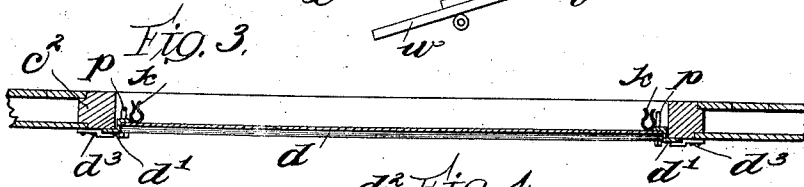
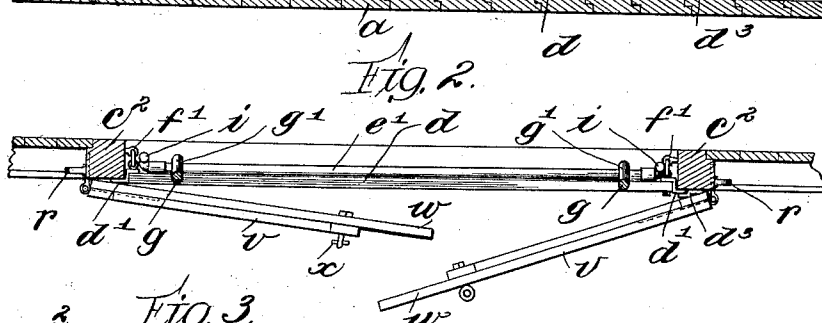
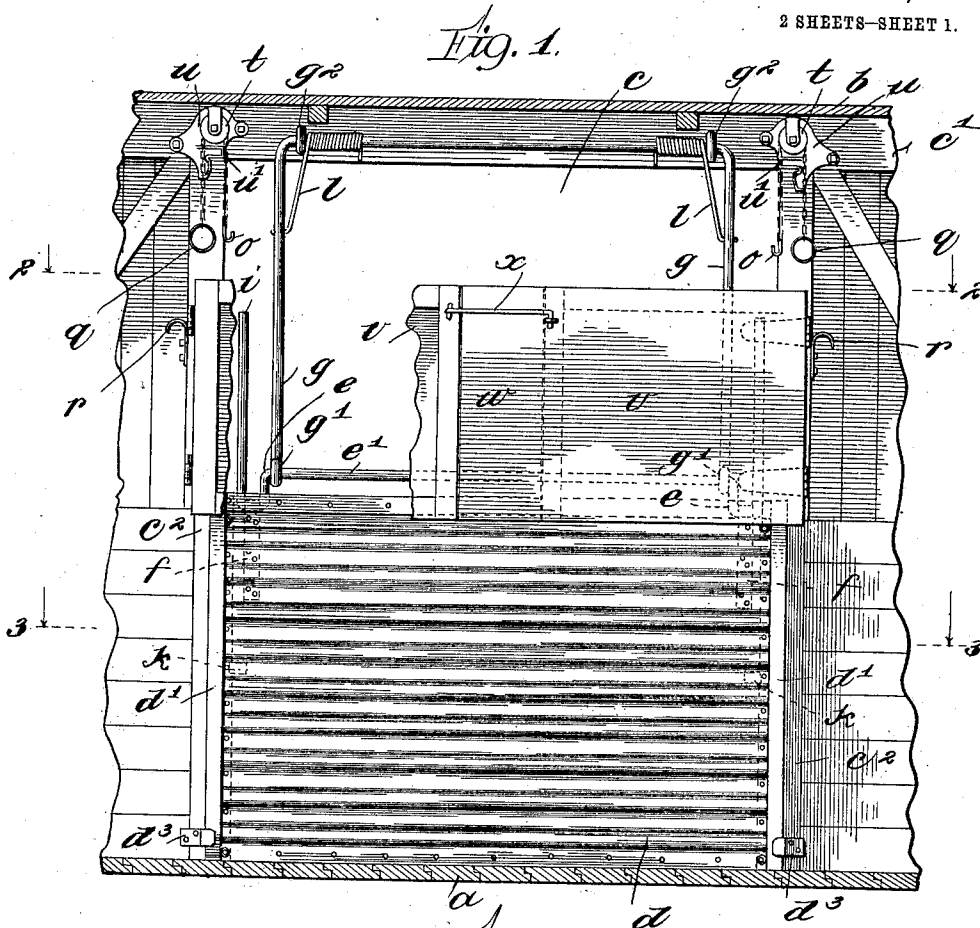
H. C. PRIEBE.
CAR DOOR.

APPLICATION FILED MAY 11, 1910.

1,040,011.

Patented Oct. 1, 1912.

2 SHEETS-SHEET 1.



Witnesses:
G. A. Paulsen
H. D. Dornier Jr.

Inventor:
Herman C. Pribe,
By: L. L. Cragg
Attys.

H. C. PRIEBE.

CAR DOOR.

APPLICATION FILED MAY 11, 1910.

1,040,011.

Patented Oct. 1, 1912.

2 SHEETS-SHEET 2.

Fig. 5.

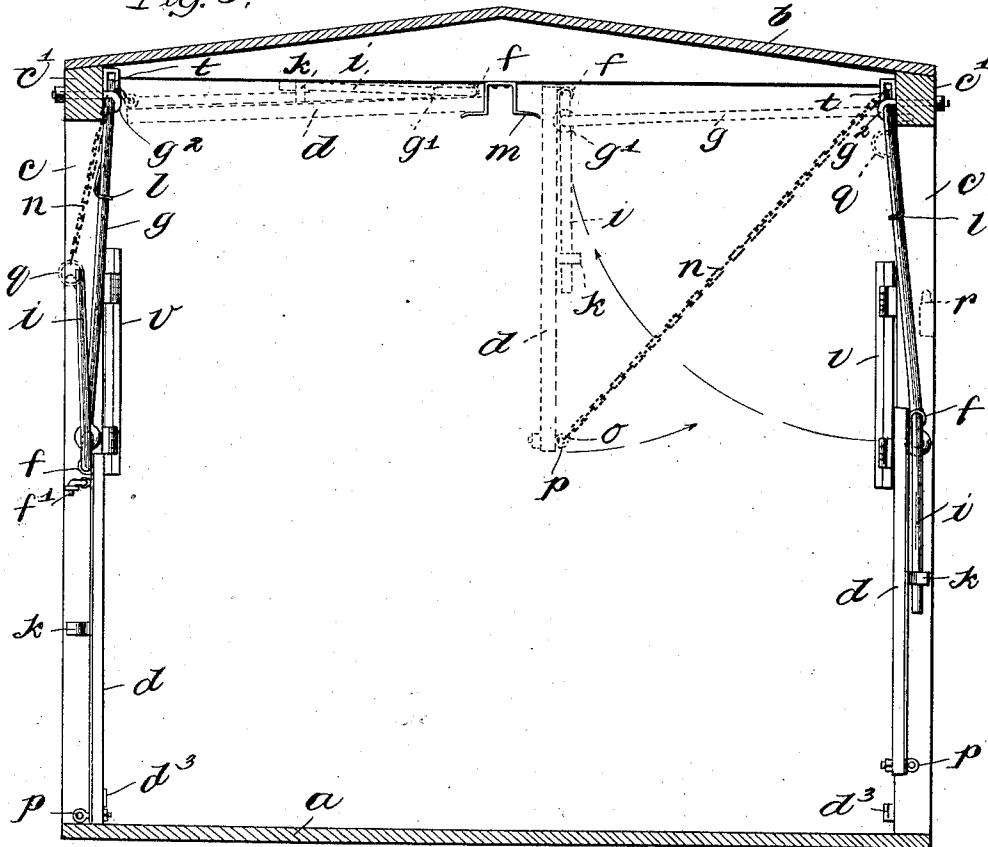


Fig. 6.

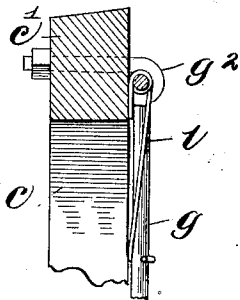


Fig. 7.

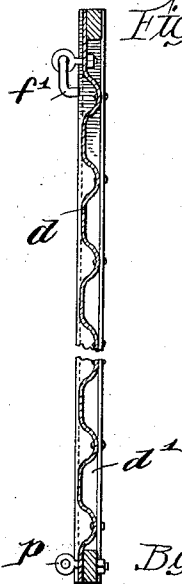
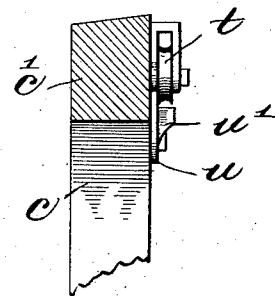


Fig. 8.



Witnesses:

J. W. Pauberschmitt
G. W. Dornarus Jr.

Inventor:

Herman C. Pribe,

By: G. L. Crogg.

Atty.

UNITED STATES PATENT OFFICE.

HERMAN C. PRIEBE, OF BLUE ISLAND, ILLINOIS.

CAR-DOOR.

1,040,011.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed May 11, 1910. Serial No. 560,552.

To all whom it may concern:

Be it known that I, HERMAN C. PRIEBE, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Car-Doors, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to freight car doors and has for its general object the provision of improved doors therefor and has for a specific object such construction of a freight car door that it may be readily adapted to a freight car that carries grain or other loose material, though I do not limit myself to this specific use of my invention.

My invention has for one of its objects the provision of a door structure having mechanism for elevating the same that operates to move the door without substantially shifting the door from the normal plane of the door, whereby the door opening mechanism does not have to operate laterally to oppose lateral pressure of the car contents against the door, and whereby the structural characteristics contiguous to the vertical side margins of the door may be greatly simplified.

Another feature of my present invention resides in means for automatically lifting the door, this means being desirably brought into play after the door has been initially elevated a short distance.

My invention has for another of its objects the provision of means whereby the door may be swung to a horizontal position or to a position that is transverse to the vertical plane of the door opening after the door has been elevated so that the door may be put out of the way and thereby adapt the car to classes of freight other than grain or other loose material.

My invention has for another of its objects the provision of a door structure that is mainly disposable within the door opening when the door is in its closed position so that the space within the car is to no material extent taken up by the door.

My invention has for another of its objects the provision of a second door structure that may be employed in connection with the aforesaid door structure and which is located above the same to supplement it in

effecting closure of the car in cases where loose material is loaded in the car above the level of the first described door structure.

I will explain my invention more fully by reference to the accompanying drawings showing one embodiment thereof, in which—

Figure 1 is a view illustrating various structural characteristics of the invention taken from the interior of the car looking outwardly; Fig. 2 is a view on line 2 2 of Fig. 1; Fig. 3 is a view on line 3 3 of Fig. 1; Fig. 4 is an enlarged view of a portion of the left hand part of my door structure; Fig. 5 is a transverse sectional view of a car body showing apparatus of my invention incorporated therewith; Fig. 6 is an enlarged view showing parts located in the neighborhood of the upper horizontal margin of the doorway; Fig. 7 is a vertical sectional view of my improved door when in a vertical position; and Fig. 8 is a detailed view showing part of the mechanism that is employed to move the door to a substantially horizontal position after it has been elevated.

Like parts are indicated by similar characters of reference throughout the different figures.

The car body *a* which I have illustrated is of a type that is readily adapted to carry grain or other loose material, there being a roof structure *b* therefor. The car is shown as being provided with two side doors, the openings *c* of which extend from the bottom of the car body to the side plates *c'*. The doorways are completed by the door posts *c''*. Each door *d*, desirably made of metal which is preferably corrugated, is margined at its vertical edges by plates *d'* that are included within the plane of the door and which are desirably provided with continuations *d''*, Fig. 4, to constitute Z-bars, these Z-bars being riveted to the door structure, as illustrated, whereby the plates *d'* are made rigid with respect to the balance of the door and are serviceable in preventing the door from being thrust outwardly beyond the posts *c''* and are also serviceable in preventing the lower portion of the door from being thrust inwardly when the door is lowered by engaging clips *d'''* fastened to the door posts. The intermediate division of each described Z-bar extends transversely to the door, these portions of the Z-bars upon opposite verti-

cal sides of the door thereby being adapted to engage the door posts to prevent material endwise movements of the door.

The mechanism which I employ to elevate each door includes a pair of cranks *e* that are provided with bearings *f* near the ends of the top margin of the door *d* on the front side of the door and which are pivotally connected with pitman rods *g* constituting a swinging support for the door by having the rod *e'* that forms an integral continuation of both cranks pass through eyes *g'* in the free ends of said pitman rods. The upper ends of the pitman rods or levers *g* are swingingly mounted upon side plates *c'* at *g*². The cranks *e* are operated by any suitable mechanism, such for example as either of the crank handles or both of the crank handles *i* rigidly secured thereto. By moving the crank handles outwardly, the cranks are turned within their bearings *f* and cause the elevation of the door, the rods or pitmen *g* swinging sufficiently to permit the rise of the door while it occupies its plane. After the door has been elevated a distance substantially equivalent to the distance between the two axes of each crank, continued movement on the part of the cranks is accompanied by return movements of the rods, links or pitmen *g* when the door is being further elevated as a consequence of the movement of the crank handles *i*, the complete elevation, due to the operation of the crank handles, elevating the door substantially twice the distance between the axes of a crank, spring clips *k* being employed to hold the crank handles in the positions to which they are brought in thus elevating the door, as illustrated on the right hand of Fig. 5. After the door has been thus elevated and sufficient freight in the form of loose material, such as grain, has been discharged through the opening beneath the door, as exhibited on the right hand of Fig. 5, to permit said door to swing inwardly, spring mechanism *l* is brought into play to swing the door to the vertical dotted position shown in Fig. 5, whereafter the door is swung about its pivotal connection afforded by the engagement of the cranks *e* with the rods *g* at *g'* and, owing to the shifting of the location of the eyes *g'* and the bearings *f*, the top edge portion of the door will be projected horizontally beyond the pitmen or rods *g*, thereby enabling me to provide a ledge *m* secured to the roof portion of the car body upon which to rest the top margin of the door, the bottom margin of the door being preferably supported by means that are employed to rotate the door at the eyes *g'*, this means desirably residing in a chain *n* that is engaged by its hook *o* with the eye *p* at the bottom of the door when the door has been swung to the vertical position illustrated

in Fig. 5, the chain then being pulled upon at the ring *q* to swing the door to the horizontal position as described, the chain passing over a sheave *t* for this purpose. The chain is desirably not made long enough to reach the eye *p* when the door has been only slightly elevated, as indicated in full lines at the right hand of Fig. 5, so that only a short chain need be employed that cannot readily be stolen. The chain or cable *n* is only required in any event because of the height of the door opening *c* employed in modern freight car structures. When the chain is employed, a grab hook *r* will serve to catch selected portions thereof to hold the door in the position to which it has been swung as a consequence of the pull upon the chain, the position to which a door may ultimately be pulled by the chain being indicated by dotted lines at the left of Fig. 5. The castings *u* that support the sheaves are provided with abutments *u'* that are slightly farther apart than the length of the door so that the door cannot have material end play when it has been brought to a horizontal position.

I have shown two swinging doors *v* that are hinged upon the door posts and which overlap at their meeting edges *w* to a considerable extent and are held in the same plane by means of a hook *x* or other suitable fastening means. The lower edges of the doors *v* overlap the top margin of the door *d* when all of these doors are in their closed positions and closely engage said top margin to prevent the discharge of the car contents between the door *d* and the doors *v*. The doors *v* are adapted not only to engage the top margin of the door *d* but also to engage the rods *g* so that said doors *v* are effectively braced against outward movement that might otherwise be due to the pressure of the car contents.

This application, in a number of its aspects, is a continuation of my application Serial No. 436,797, filed June 5, 1908, "Grain Doors".

I have described in particular but one door and its associate mechanism, but both illustrated doors are similar in function, association and operation, and I have given to both doors and the parts of the mechanism associated therewith similar characters of reference.

It will be observed that the operating mechanism *e i* is mounted upon the door and not upon any parts adjacent to the door, so that the door does not have to move transversely to its plane while it is being moved vertically.

While I have herein shown and particularly described the preferred form of my invention, I do not wish to be limited to the precise details of construction shown, as changes may readily be made without de-

parting from the spirit of the invention, but,

Having thus described my invention, I claim as new and desire to secure by Letters
5 Patent the following:—

10 A car structure including a car body having a door opening; a door therefor; a substantially rigid suspension device for the door swingingly connected with the top portion of the door upon its front side and swingingly mounted near the top margin of the door opening and including a crank connection with the top margin of the door whereby the door may be initially raised; a

supporting device *m* for receiving the top 15 margin of the door when it is swung inwardly and is placed in a substantially horizontal position; and a second supporting device *n* for holding the bottom portion of the door when the door has been placed in a 20 substantially horizontal position at the upper part of the car.

In witness whereof, I hereunto subscribe my name this fifth day of May, A. D., 1910.

HERMAN C. PRIEBE.

Witnesses:

G. L. CRAGG,

R. E. ATHERTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."