No. 629,422. Patented July 25, 1899.

G. C. CAMEHL & J. H. FOGGITT.

GRAIN DOOR FOR CARS.

(No Model.) (Application filed Feb. 23, 1899.)

Fig. 1.

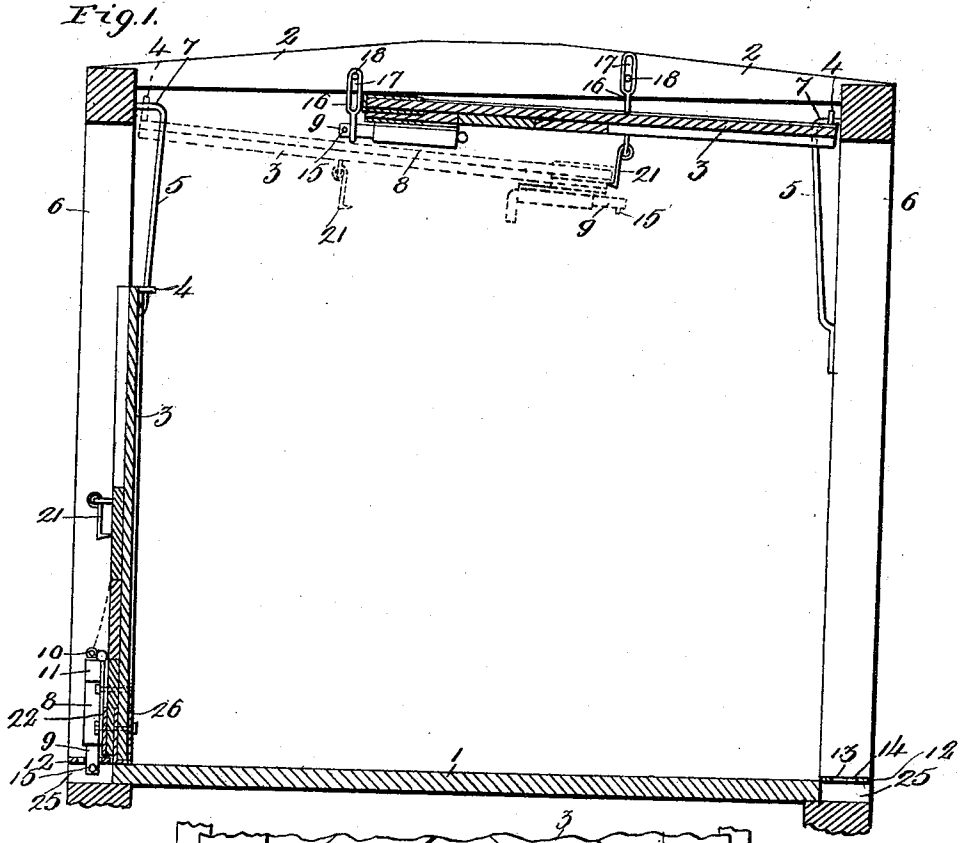


Fig. 2.

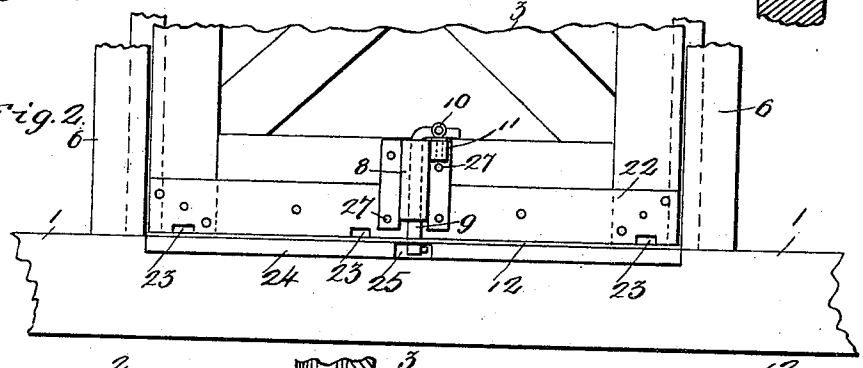


Fig. 4.

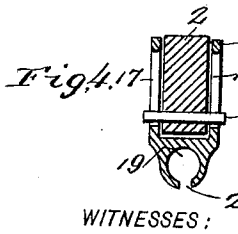


Fig. 3.

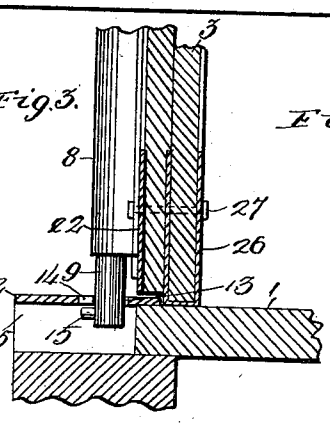
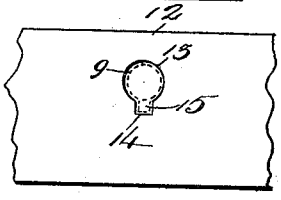


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE C. CAMEHL, OF NEW ORLEANS, LOUISIANA, AND JOHN H. FOGGITT, OF ST. LOUIS, MISSOURI.

GRAIN-DOOR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 629,422, dated July 25, 1899.

Application filed February 23, 1899. Serial No. 706,537. (No model.)

To all whom it may concern:

Be it known that we, GEORGE C. CAMEHL, residing at New Orleans, Orleans parish, State of Louisiana, and JOHN H. FOGGITT, residing at St. Louis, State of Missouri, citizens of the United States, have invented certain new and useful Improvements in Grain-Doors for Cars; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in grain-doors for cars; and it consists in the novel combination and arrangement of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a transverse vertical section of a car, showing our invention applied thereto. Fig. 2 is a front elevation of the lower portion of one of the doors. Fig. 3 is a vertical transverse section of the door and sill of the car-body with the lock in side elevation. Fig. 4 is a transverse section of one of the roof-beams of the car-body, also showing in section one of the hangers for holding the doors in an open position or adjacent to the roof of the car; and Fig. 5 is a plan view of a portion of the metallic plate which forms the sill of the car-body.

The object of our invention is to construct a simple and practical grain-door for cars and is of such a nature that it is impossible for the grain contained in the car to bulge or force the doors upwardly while the car is in transit and which very often occurs with the doors now in use, and, further, doors as constructed can be readily and conveniently raised or opened and held in said position adjacent to the roof of the car, whereby ready access can be had to the interior of said car when unloaded.

Referring to the drawings, 1 represents a car-body of the usual construction, and 2 the roof-beams. The doors 3 are of the usual construction, and to the opposite inner surfaces of the same and adjacent to their upper edges are secured ears 4, which are adapted to receive and slide upon the guides 5, secured to the car-body adjacent to the door-frames 6 of the car, the upper portion of said guides having a horizontal portion 7, upon which the lugs or ears 4 coöperate when the doors 3 are elevated and their lower ends swung inwardly adjacent to the roof of the car, as shown in Fig. 1.

To the outer surfaces of the door 3, adjacent to the lower edges thereof, and located midway between their opposite vertical edges are secured keepers 8, which are adapted to loosely receive bolts 9, the upper ends of which are formed at right angles to the remaining portion of the bolt, which operate as handles for turning said bolts, and, further, are adapted to coöperate with the pins 10, carried by the sockets 11, forming a part of the keepers, whereby the said bolts are prevented from turning after the doors 3 have been closed and locked. Secured along the upper surface of the sill of the door-frame 6 is a metallic plate 12, provided with an opening 13 of a size to freely receive the bolt 9 and having an extension 14 for receiving the lug 15, forming a part of said bolt, whereby when the said bolt is turned in its proper position the same, together with its lug, will freely pass through the plate 12, permitting the lug 15 to be turned under the same, and thereby prevent the door 3 from being raised.

Movably secured to one of the roof-beams 2 are two hangers 16, which are forked and provided with slots 17, which are adapted to receive the opposite ends of the pins 18, passing through the said beam, the said forked portion of the hangers being located on either side of the said beam and loosely receiving the same, the lower ends of said hangers being provided with openings 19, a portion of which is cut away, as shown at 20, whereby the bolts 9, together with their lugs, may be passed into said openings 19 when turned in the proper direction, after which the said bolts are turned, causing the door to be securely locked in its proper position adjacent to the car-roof. In practice only one hanger is used at one time, the other hanger being raised vertically by the door in the operation of moving the said door adjacent to the roof, and in order to secure the other door in an open position hooks 21 are secured to the outer surfaces of each door, one of which is adapted to coöperate with the lower edge of the last

door raised in the manner as shown in the dotted lines in Fig. 1, whereby both of said doors may be readily and securely held in an open position.

When the doors 3 are in their lowest positions, the lower edges thereof will coöperate with the floor of the car, with their lower outer surfaces located behind the inner edges of the plates 12, whereby said doors are further prevented from bulging along their entire width, and secured to the outer lower surfaces of each door is a metallic plate 22, the lower edges of which are adapted to rest upon the plates 12 and are cut away adjacent to their lower edges to form sockets 23, which are adapted to receive a crowbar or other lever for starting the doors in an upward direction for opening the same after the bolts 9 have been turned in their proper direction to cause the lugs 15, forming a part of the same, to come directly under the extension 14 of the openings 13 of the plates 12.

From the foregoing description it will be seen that it will be impossible for the grain or other material located in the car to force the doors upwardly after the bolts have been turned in their proper positions, and, further, the guides 5, together with the ears secured to the upper ends of the doors and receiving or coöperating with said guides, hold said portions of the doors in their proper positions.

The wooden sills 24 of the door-frames are cut away immediately under the openings 13 of the plates 12, forming openings 25, through which any dirt or any other accumulation may pass that should happen to fall through said openings 13 of the said plates 12.

The lower edges of the doors 3, together with their opposite adjacent sides, are embraced or covered by a U-shaped plate 26, the lower surface of which rests upon the floor of the car and coöperates with the inner edge of the plate 12, as clearly shown in Fig. 2, the several parts being connected together by bolts 27, passing through the bolt casing or keeper 8, plate 22, door 3, and U-shaped plate 26.

Having fully described our invention, what we claim is—

1. In combination with a car-body, of a vertical-moving car-door, a bolt secured to the outer lower surface of the latter, a lug forming a part of the lower end of the said bolt, a plate secured to the sill of the door-frame, and provided with an opening which is adapted to receive the bolt, together with its lug, and a hanger carried by the roof of the car, and provided with an opening with which the said bolt is adapted to coöperate for holding the said door in an open position, substantially as described.

2. In combination with a car-body and doors thereof, of a plate secured to the outer surface of each of the latter along their entire length, the lower edges of said doors extending a suitable distance below the lower edges of said plates, the latter being provided with sockets along their length, and a plate secured to the sill of each of the door-frames, the inner edges of which are adapted to cooperate with the doors below the plates carried by the same, with the lower edges of the latter plates in contact with the upper surfaces of the plates carried by the sill of the door-frame, as and for the purpose described.

3. In combination with the roof of a car-body, of two doors adapted to slide and swing, a hanger movably secured to said roof, and having an opening formed in its depending portion, the wall which forms the said opening, being partially cut away, a bolt carried by one of said doors, and provided with a lug, and adapted to be received by the opening in said hanger, whereby the parts are securely locked when the bolt is turned in the proper direction, and a hook secured to the outer surface of the said door, and adapted to cooperate with the lower edge of the other door, as and for the purpose described.

4. In combination with a car-body, of a vertical and swinging door, a bolt secured to the outer medial portion of the same, a lug forming a part of the lower end of the said bolt, a plate secured to the sill of the door-frame, and provided with an opening, having an extension, which is adapted to receive the lower end of said bolt, together with its lug, a locking device for said bolt, and a hanger, carried by the roof of the car, and provided with an opening with which the said bolt is also adapted to coöperate, as and for the purpose described.

5. In combination with a car-body, and doors adapted to slide and swing, of beams forming a part of the roof of the car, a forked hanger adapted to embrace one of said beams, and provided with slots, a pin passing through the said beams, the opposite ends of which are received by the said slots, said hangers having a depending portion provided with an opening, the wall forming said opening, being partially cut away, a bolt carried by one of said doors, and having a lug located at its lower end, and adapted to be received by said opening, formed in the hanger, and a hook secured to the outer surface of the said door, and adapted to coöperate with the other door, as and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE C. CAMEHL.
JOHN H. FOGGITT.

Witnesses:
ALFRED A. MATHEY,
C. F. KELLER.