

L. F. WOLFES.
 VISIBLE DRAFT BOLT CHAMBER.
 APPLICATION FILED DEC. 2, 1911.

1,049,434.

Patented Jan. 7, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

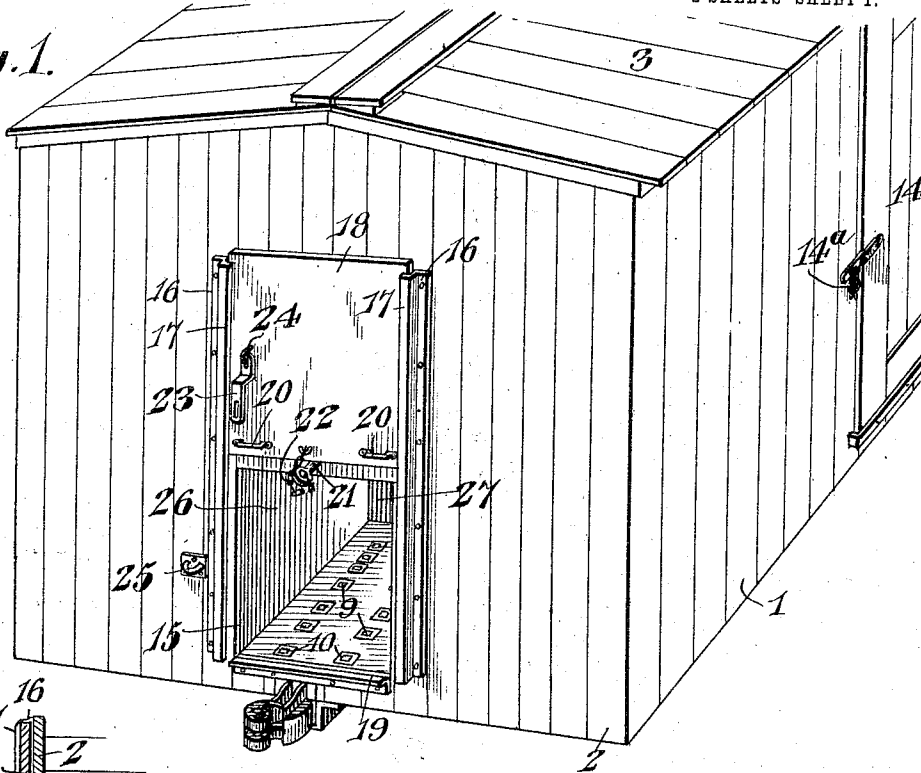
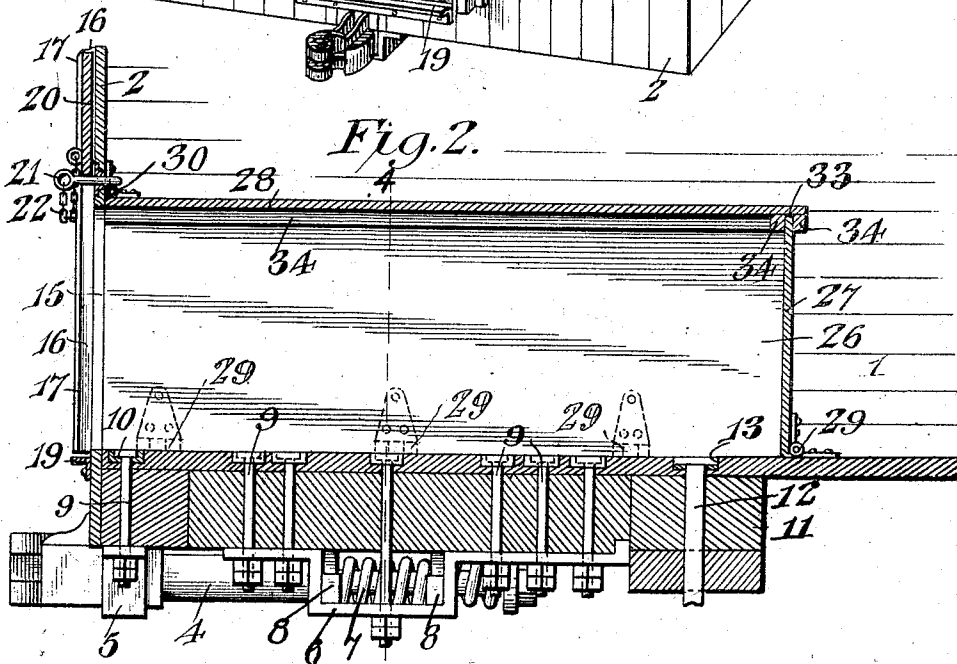


Fig. 2.



WITNESSES

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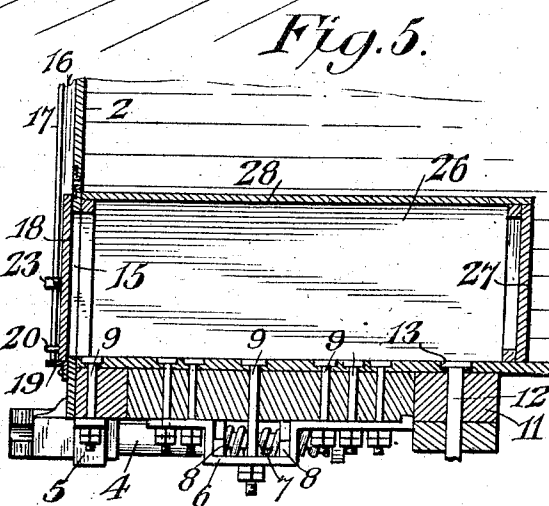
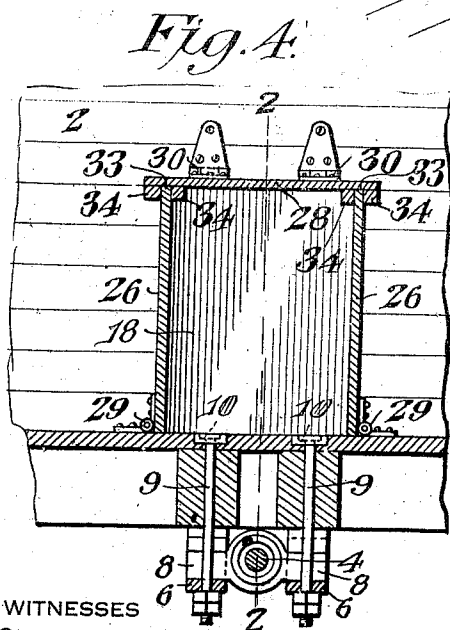
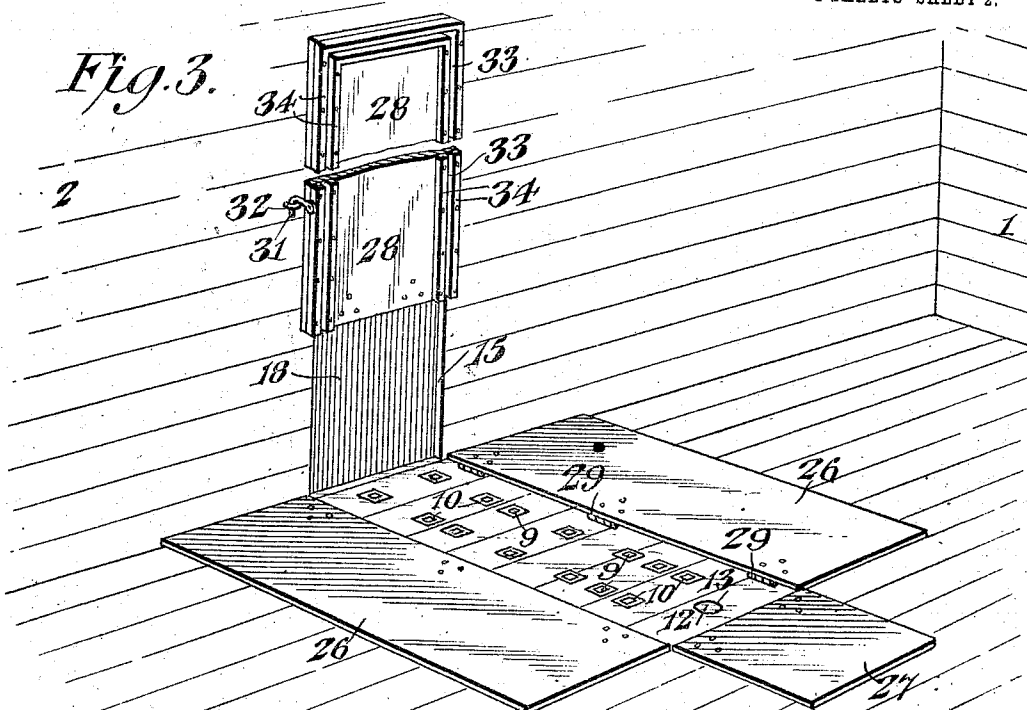
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UNITED STATES PATENT OFFICE.

LOUIS F. WOLFES, OF CLIFTON FORGE, VIRGINIA, ASSIGNOR OF ONE-HALF TO DAVID FULTON HARRIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

VISIBLE-DRAFT-BOLT CHAMBER.

1,049,434.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Application filed December 2, 1911. Serial No. 683,648.

To all whom it may concern:

Be it known that I, LOUIS F. WOLFES, a citizen of the United States, residing at Clifton Forge, in the county of Alleghany and State of Virginia, have invented a new and useful Visible-Draft-Bolt Chamber, of which the following is a specification.

This invention relates to freight car construction, and has for its primary object the provision of means whereby to render accessible for inspection and repair the bolts connecting the car body to the sills and draw bars without the necessity of breaking the car seals or shifting the freight in the car.

Probably eighty per cent. of the repairs needed by box cars in transit is due to the breaking of the draft bolts, using the term in a generic sense as including the bolts connecting the draw bars to the car body and also the king bolt or center pin connecting the body to the sills. The cost of labor actually employed in replacing broken draft bolts will probably not exceed ten cents each, but before the workmen can replace such bolts it is necessary to break the seal of the car and enter the same, and either transfer the freight entirely to another car or shift the same so as to make a path from the side door to the ends of the car and clear a space at the point where the bolts are fixed in the floor. This necessitates the employment of from two or four men over a period of from four to twelve hours, according to the nature of the load, and the resultant expense which is really preliminary to the actual repair of the car frequently runs from four to ten dollars for labor alone, to say nothing of the even more serious loss due to delay of the car, cutting out of the train, delivering to the shop, etc.

The object of this invention is the complete elimination of this large preliminary or contingent expense and inconvenience by providing means by which the workmen can readily gain access to the draft bolts from the outside without entering the car proper. The need arises and the invention is applicable in all cars where the car floor rests upon the end sills and covers the point of connection with the draft bolts.

With these and other objects in view the invention consists in the construction and novel combination of parts, hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims here-

with appended, it being understood that various changes in the form, proportion, arrangement and minor details of construction within the scope of the claims may be resorted to without departing from the spirit of the invention or sacrificing any material advantages. In the drawings:—Figure 1 represents in perspective the end of an ordinary box car equipped with the invention. Fig. 2 is a longitudinal vertical section through the draft bolt housing taken on the line 2—2 of Fig. 4. Fig. 3 is an interior end view of the car showing the housing collapsed. Fig. 4 is a vertical transverse section on the line 4—4 of Fig. 2, and Fig. 5 is a view similar to Fig. 2 showing the housing of rigid construction.

In the drawing the invention is shown as embodied in an ordinary box car having side walls 1, end walls 2, and a roof 3, and equipped with the draw bar 4 supported in the usual manner by the stirrup 5, and the bracket 6, and provided with the draft spring 7 operating between the follower plates 8, the car body being connected with the draw bar mechanism or draft rigging by means of the bolts 9 which pass through the usual sills and have their heads recessed at 10 in the floor of the car. The car is also shown provided with the usual bolster 11 and the king bolt or center pin 12 mounted therein and having its head likewise recessed at 13 in the floor of the car.

The construction as thus far described is that usual with box cars, cattle cars, flat bottom gondolas and many other types, in which the car floor rests upon the end sills and the draw bar timbers and the sides and ends of the car cover the bolt connection of the floor in such manner as to shut off access thereto otherwise than by entering the car through the side door 14 provided for the loading and unloading of the car contents. The subject-matter of the present invention is adapted to be built into a new car at the time of its construction, or to be readily applied to an old car of any ordinary type, and will now be described in detail.

In each end of the car is provided a door opening 15 and upon the car ends adjacent the opening are arranged vertical angle irons 16 having offset portions 17 which provide opposed grooves within which the door 18 is arranged to slide vertically, while at the bottom an angle plate 19 is arranged

horizontally to form a bottom rest or stop for the door. The door is provided with handles 20 by which it may be opened and closed and is also provided with a pin 21 secured thereto by the chain 22, which pin is adapted to enter the end of the car beneath the elevated door to hold it in its upper position. A hasp 23 is also pivoted to the door by means of a staple 24 and is adapted to engage over a keeper 25 and to be suitably secured by a lock or the like. It will be understood that the door may be arranged to slide horizontally, or it may be hinged if such change in construction be found to be advisable. The door is of a size sufficient to admit a workman and opens immediately upon the floor area within which are recessed the heads of the draft bolts, so that if the car be loaded it is unnecessary to break the car seal 14^a on the side door or to provide a pathway therefrom to the draft bolts, the workman having access thereto from the end of the car.

As an additional safe guard against the necessity of having to shift the freight within the car, I arrange a protective housing above the draft bolts, which housing preferably is collapsible in its character and consists of side walls 26, an inner end wall 27, and an upper wall 28, the side walls hinged to the floor at 29 so as to lie prone thereon and also adapted to be erected so as to occupy vertical planes intersecting at their meeting edges. The top wall 28 is hinged at 30 to the end wall 2 of the car at the upper edge of the door opening so as to swing upwardly against the side of a car and to be secured in such position by the hook 31 engaging with a staple 32. The top wall 28 is provided with marginal grooves 33 formed between spaced cleats 34 and when the cover or top wall is swung downwardly upon the erected side and end walls, the latter are received within the groove 33 and effectually locked together by the cleats 34.

When the car is used for certain kinds of freight, as, for instance, iron, steel rails or bars, or lumber, and the like, it is sometimes advantageous to have the housing collapse, as shown in Fig. 3, the freight within the car being so disposed as to leave clear the space above the bolts, in which case access is made to the clear space above the bolts by opening of the door 18. In other cases where the car is loaded with shifting freight, such as grain in bulk, or the like, or with commodities of relatively light weight in boxes and barrels, it is advantageous to erect the housing within the car so that the car space above the bolt area may be utilized with the exception of that immediately contiguous thereto, the grain or boxes being disposed upon and all around the housing. In this case if any of the draft bolts become

broken, or it is desired to inspect the same, workmen can enter through the door and obtain access thereto without disturbing the contents of the car in any way.

It will be understood that the housing is of a length sufficient to extend from the end wall of the car inwardly far enough to include the king bolt 12, usually not to exceed five feet six inches, and of a height sufficient to permit the withdrawal of the longest bolt usually about twenty-four inches, and of a width sufficient to include all of the bolts and also to permit the entrance of the workman's body, preferably about eighteen inches. The dimensions of the housing will naturally vary to meet the conditions present in each case.

In Fig. 5 I have shown a slightly modified form similar in all respects to that just described, except that the housing is shown as made of permanent construction.

The same reference numerals refer to corresponding parts shown in the remaining figures of the drawing, 26 being the sides, 27 the inner end, and 28 the top of the housing or shield, the several parts being rigidly connected at their meeting edges.

The construction and mounting of the sliding door 18 in Fig. 5 has been previously described with reference to the other figures, and such description need not be repeated, since there is no difference between the door shown in Fig. 5 and that represented in said other figures.

I desire it understood that by the term "housing" I wish to include a shield or guard of any form or construction to keep the merchandise or freight spaced or away from the bolts of the draft rigging and bolster.

What is claimed is:—

1. A freight car having an opening provided in the end above the draw bar and greater in width than said draw bar, a door for closing said opening, and a housing or shield located within the car above the floor and extending from the end of the car and in communication with said opening, said housing or shield defining a space which is substantially coextensive with the limits of the bolts of the draft rigging.

2. A freight car having an opening provided in the end above the draw bar of the draft rigging, means for closing said opening, and a housing or shield extending from the end of the car inwardly a sufficient distance above the floor to include all the bolts of the draft rigging and the king bolt, said housing or shield defining a space which is in communication at its outer end with the opening provided in the end of the car.

3. In a car having draft bolts connecting the draft rigging with the floor of the car body, the combination with said car, of a protecting device arranged within the car

to shield said bolts from the freight in the car, and means for affording access to said bolts from the end of the car.

4. The combination with a car having draft bolts connecting the draft rigging with the floor of the car body, of a door provided in the end of the car above the draw bar of the draft rigging, and means to protect or shield said bolts from the freight in the car so that access may be afforded thereto through the door at the end of the car.

5. The combination in a car having draft bolts connecting the draw bars and sills with the floor of the car body, of a housing therein arranged above the draft bolts, and means to afford direct access to said housing from the car exterior.

6. The combination in a car having draft bolts connecting the draw bars and sills with the floor of the car body, of a housing therein arranged above the draft bolts and extending from the end of a car longitudinally, and a door in the end of the car affording direct access to said housing from the car exterior.

7. The combination in a car having draft bolts connecting the draw bars and sills with the floor of the car body, of a housing within the car arranged above the floor and at the sides of the draft bolt area to inclose the same, and extending from the end of the car longitudinally, and an end door affording direct access to the interior of said housing from the car exterior.

8. The combination in a car having draft bolts connecting the draw bars and sills with the floor of the car body, of a collapsible

housing arranged within the car and extending when erected from the end of the car longitudinally to inclose the draft bolt area and when collapsed arranged to leave clear the draft bolt area, and an end door affording direct access to the interior of the car adjacent the housing.

9. The combination in a car having draft bolts connecting the draw bars and sills with the floor of the car body, of a collapsible housing arranged within the car and comprising sides and rear end walls hingedly connected to the car floor to swing from a prone position on the floor to a vertical position with their ends abutting, and a cover hinged to the car end and having marginal grooves to engage the erected sides and ends, and a door affording direct access to said housing from the car exterior.

10. The combination in a car having draft bolts connecting the draw bar and sills with the floor of the car body, of a collapsible housing arranged within the car and comprising sides and rear end walls hingedly connected to the car floor to swing from a prone position on the floor to a vertical position, a cover hinged to the end of the car and adapted to cover the space between the sides and end, and a door in the end of the car to afford direct access to the space inclosed by said housing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LOUIS F. WOLFES.

Witnesses:

JOHN H. SIGGERS,
EDITH L. BROWN.