Feb. 19, 1924. 1,483,923

C. A. ARNOLD

CAR DOOR LOCK AND SEAL

Filed Aug. 8, 1922 2 Sheets-Sheet 1

Fig. 1.

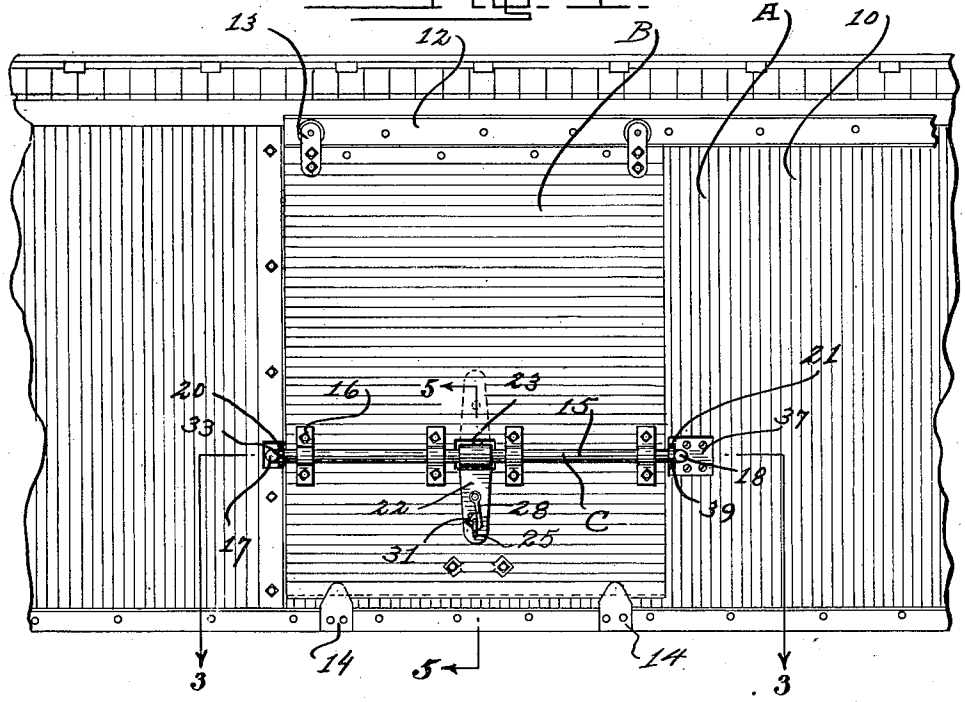


Fig. 2.

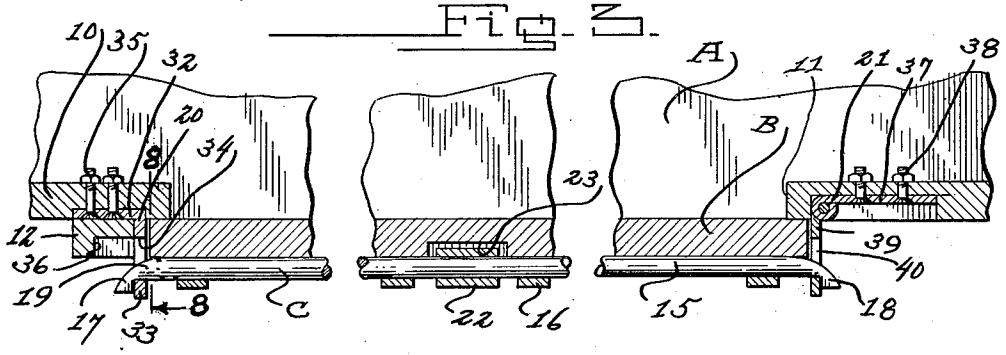


Fig. 3.

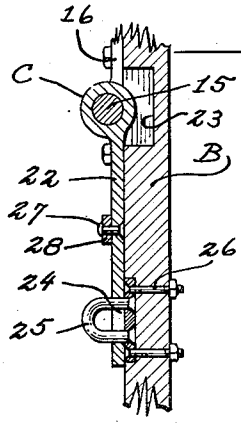
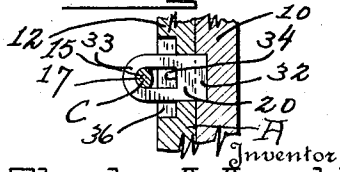


Fig. 4.



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Filed Aug. 8, 1922 2 Sheets-Sheet 2

Fig. 2.

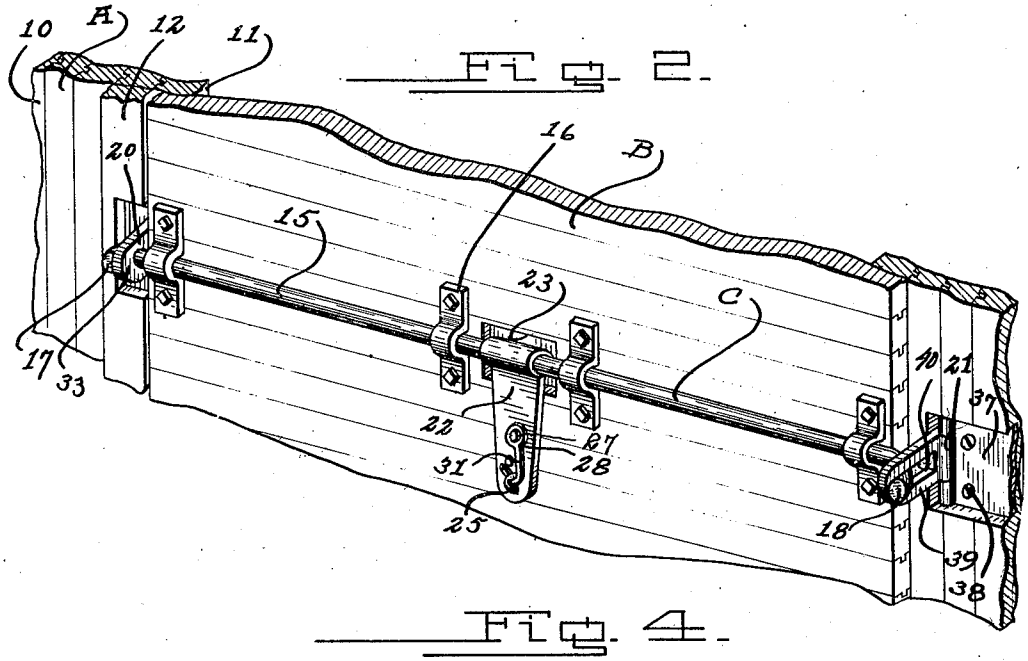


Fig. 4.

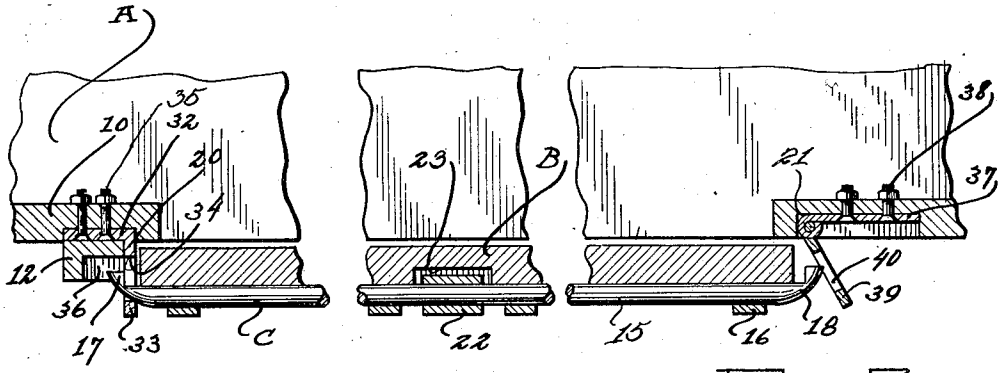


Fig. 6.

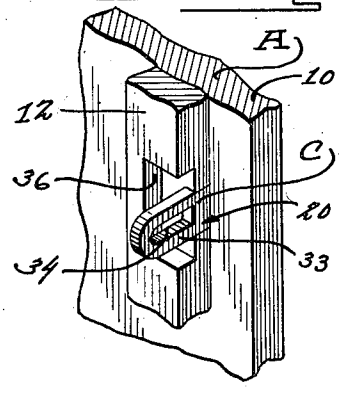
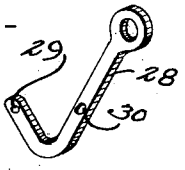


Fig. 7



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Patented Feb. 19, 1924. 1,483,923

UNITED STATES PATENT OFFICE.

CHARLES A. ARNOLD, OF EVANSVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO HERBERT ARTHUR STRASSWEG, OF EVANSVILLE, INDIANA.

CAR-DOOR LOCK AND SEAL.

Application filed August 8, 1922. Serial No. 580,458.

To all whom it may concern:

Be it known that I, CHARLES A. ARNOLD, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Car-Door Locks and Seals, of which the following is a specification.

This invention relates to fasteners for doors, and the primary objects of the invention are; first, to provide novel fasteners for the doors of freight cars, means for holding the door tightly closed for preventing seeping of loose material, such as grain, from out of the door opening; second, means for preventing the falling off of the door if the door hangers become defective through any reason, thereby preventing injury to persons and railroad employees; and third, means for preventing the prying open of the door without the destroying of the car seal, said means eliminating the necessity of cleating or nailing the door in position as now resorted to.

A further object of the invention is to provide an improved lock and seal for the doors of box cars and automobile freight cars embodying a locking rod extending the full width of the car door having means for engaging novel keepers carried by the sides of the door opening for effectively holding the door in place, the locking bolt or rod carrying an operating handle having means for securing the same in place against movement by the use of an ordinary single car seal.

A further object of the invention is to provide a lock and seal for railroad car doors embodying a transversely extending locking bolt rotatably carried by the door and extending the full width thereof, the terminals of the locking bolt or rod having novel members for engaging keepers disposed at the opposite sides of the door opening, said members also forming means for forcing the door into tight contact with the door opening, thereby preventing the seeping of material, such as grain or the like, through the door opening, the locking bolt or rod carrying a combined operating lever and hasp which is adapted to engage and receive an ordinary shackle or keeper carried by the door, the combined hasp and lever and the shackle or keeper being adapted to receive an ordinary car seal to prevent unauthorized operation of said locking bolt without detection.

A still further object of the invention is to provide an improved railroad car door lock of the above character, which is durable and efficient in use, one that is simple and easy to manufacture, and one which can be incorporated with existing railroad cars as well as railroad cars in the course of manufacture.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, forming a part of this specification, in which drawings:

Figure 1 is a fragmentary side elevation of a railroad car showing the improved combined door lock and seal incorporated therewith.

Figure 2 is an enlarged fragmentary perspective view of a railroad freight car showing the improved lock and seal incorporated therewith; the lock being in its operative locked position.

Figure 3 is a longitudinal section taken through the car and car door, on the line 3—3 of Figure 1, showing the lock in its operative locked position for holding the door tightly against the door frame against movement.

Figure 4 is a similar view, showing the lock in its unlocked position.

Figure 5 is an enlarged detail vertical section, taken on the line 5—5 of Figure 1, showing the combined operating lever and hasp engaging a shackle or keeper when the mechanism is in its locked position.

Figure 6 is an enlarged detail fragmentary perspective view showing one of the keepers for the left hand end of the locking bolt or rod.

Figure 7 is an enlarged detail perspective view of the hinged hook carried by the combined operating lever and hasp for engaging the shackle or keeper thereof.

Figure 8 is a detail section taken on the line 8—8 of Figure 3.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A indicates a freight car; B, the sliding door thereof; and C, the improved locking means for the door.

The freight car A is of course, of the ordinary or preferred construction, and has been shown of the ordinary box car type, but it is to be understood that the improved lock and fastener C can be utilized with different types of freight cars and is especially adapted for use with freight cars for transporting automobiles in which a pair of doors are used. The freight car A includes a side wall 10, provided with a door opening 11, which has a door post 12 arranged at one end thereof.

The car door B is also of the usual or any preferred construction, and the upper edge thereof is provided with hangers 13 for engaging the track 12 carried by the car A. The lower edge of the door B is maintained in normal position by shoes 14, which are also of the usual construction.

The fasteners, now in use on car doors are generally disposed adjacent one side edge thereof, which do not hold the car door securely in position and this arrangement of car door fasteners allows unscrupulous persons to remove certain of the guide shoes 14 and pry open the lower right hand corner of the door and gain access to the interior of the car without destroying the car seal carried by the fastener. Further, this type of fastener does not hold the door securely in place, and if the door hangers become defective through any reason, the fastener will not hold the door in position and thus allows the door to drop outwardly which often causes serious accidents.

The improved fastener C which will be now described, effectively eliminates these inconveniences, and firmly holds the door in position against movement, even if the hangers of the door are destroyed and absolutely precludes the prying open of the door even if the guide shoes are removed.

The improved door lock C comprises a rotatable locking bolt or shaft 15, which extends the entire width of the door B. This rotatable locking bolt or shaft 15 is securely held in position by means of bearings 16 which are secured in any preferred manner to the outer face of the door B. The terminals of the rotatable locking bolt or shaft 15 are provided with hooked extensions 17 and 18, and these hooked extensions extend beyond the opposite side edges of the door. As clearly shown in the drawings, these hooked terminals 17 and 18 are provided with rounded outer surfaces 19, which facilitate the positioning thereof in the keepers 20 and 21 which will be hereinafter more fully described. These hooked terminals 17 and 18 are also flattened on opposite sides and act in the nature of cams for engaging the keepers 20 and 21 for urging the car door C into intimate contact with the door frame when the locking means is moved to its operative locked position. At a point intermediate with its ends, the rotatable locking bolt or shaft 15 has rigidly secured thereto a hasp 22 which also acts in the nature of an operating handle for the actuating bolt or shaft. The car door B may be recessed as at 23 at the point of engagement of the hasp 22 with the bolt or shaft 15 so as to permit free movement of the hasp and to permit the locking bolt 15 to lie in relatively close contact with the door B. This recess 23 also acts in the nature of a stop for the hasp and thus eliminates lateral sliding movement of the locking bolt or shaft 15. The outer end of the hasp is provided with an opening 24 for the reception of the shackle or keeper 25 which is secured in any preferred manner as by bolts 26 to the door C. If so desired, the ordinary car seal can be applied directly to the shackle or keeper 25, but as clearly shown in the drawings, the hasp 22 has pivotally secured thereto as at 27 a hook 28 which is adapted to engage in the said shackle or keeper 25. The bill and the shank portion of the hook 28 are provided with openings 29 and 30 respectively which are adapted to lie on opposite sides of the shackle or keeper 25 and the car seal, designated by the reference character 31 is adapted to be placed through these openings, as can be clearly seen by referring to Figures 1 and 2 of the drawings.

The keeper 20 comprises an attaching face plate 32, and a right angularly disposed outwardly extending arm 33 which is provided with an elongated opening 34 for receiving the hooked end 17 of the rotatable locking bolt or shaft 15. Now, this keeper 20 can be secured in any preferred manner to one side of the door frame, and as shown, the face plate 32 is disposed intermediate the door post 12 and side wall of the car 10 and secured in place by suitable bolts or the like 35. The door post 12 can be recessed as at 36, in order to facilitate the sliding of the hooked end 17 of the locking bolt 15 in position in the elongated opening 34 of the keeper 20.

The keeper 21 is formed similar to the keeper 20 and includes an attaching face plate 37 which can be counter sunk in the side wall 10 of the car and secured in place by suitable bolts or the like 38. The inner end of the face plate 37 has hinged thereto the arm 39 which is provided with the elongated opening 40. This opening 40 is adapted to receive the hooked end 18 of the rotatable shaft or bolt 15.

In use of the improved locking mechanism, when it is desired to open the door, the hasp 22 is engaged by the hand of the operator and swung upwardly, which will of course, turn the hooked terminals 17 and 18 or locking bolt or shaft 16 in direct registration with the openings 34 and 40 formed respectively in the keepers 20 and 21; and

the arm 39 of the keeper 21 is swung back into engagement with the face plate 37. The door can now be slid open in the usual manner.

When it is desired to lock the door, the door is moved to its closed position, and the hinged portion 39 of the keeper 21 is swung outwardly at right angles to the face plate 37 in engagement with the right hand side edge of the door B. The hasp 22 is now engaged by the hand of the user and pulled downwardly which will rotate the locking bolt or shaft 15. During the rotation of the bolt or shaft 15, the rounded terminals of the rod or bolt will engage the outer end walls of the openings 34 and 40 and thus gradually force the door B into intimate contact with the door frame of the car A. When the bolt 15 has been rotated to its fullest extent, the hooked ends 17 and 18 will assume the position shown in Figure 3 of the drawings, and thus lie out of registration with the openings 34 and 40 of the keepers 20 and 21 and thus prevent movement of the car door. When the hasp 22 has been swung downward, the shackle or keeper 25 will ride into the opening 24 and the hook 28 is swung downward in the shackle or keeper and the car seal is then placed into position as heretobefore described.

By this construction, it can be seen that the door is firmly and tightly held in position and that accidental displacement thereof through any cause is absolutely precluded, and that the door will be prevented from being pried open by unscrupulous persons even if the guide shoes 14 for the door are removed.

Changes in details may be made without departing from the spirit or scope of this invention; but,

I claim:

The combination with a structure including a wall having a door opening therein and a door for closing said opening, of a locking device for the door including a rotatable bolt extending the full width of the door, hooks formed on the terminals of the bolt, a rigid keeper at one side of the door frame having an elongated opening therein to permit passage of one of the entire hooked ends of the bolt therethrough, and a hinged keeper at the opposite side of the door frame from the rigid keeper, said hinged keeper including a base plate countersunk in the side wall, and an arm hinged to the base plate adapted to swing outwardly and into engagement with said base plate, thereby lying flush with the outer face of the side wall when in an inoperative position, said arm having an elongated opening therein to permit passage of the entire other hooked end of the bolt therethrough, the outer surfaces of said hooked ends being curved for facilitating the insertion of the hooked ends in said keepers and for engaging the ends of the openings in said keepers to force the door into tight contact with the door frame upon rotation of said bolt.

CHARLES A. ARNOLD.