June 16, 1931. W. J. HOSCEIT 1,809,850

LATCH FOR DUMP CAR DOORS

Filed Sept. 8, 1930 2 Sheets-Sheet 1

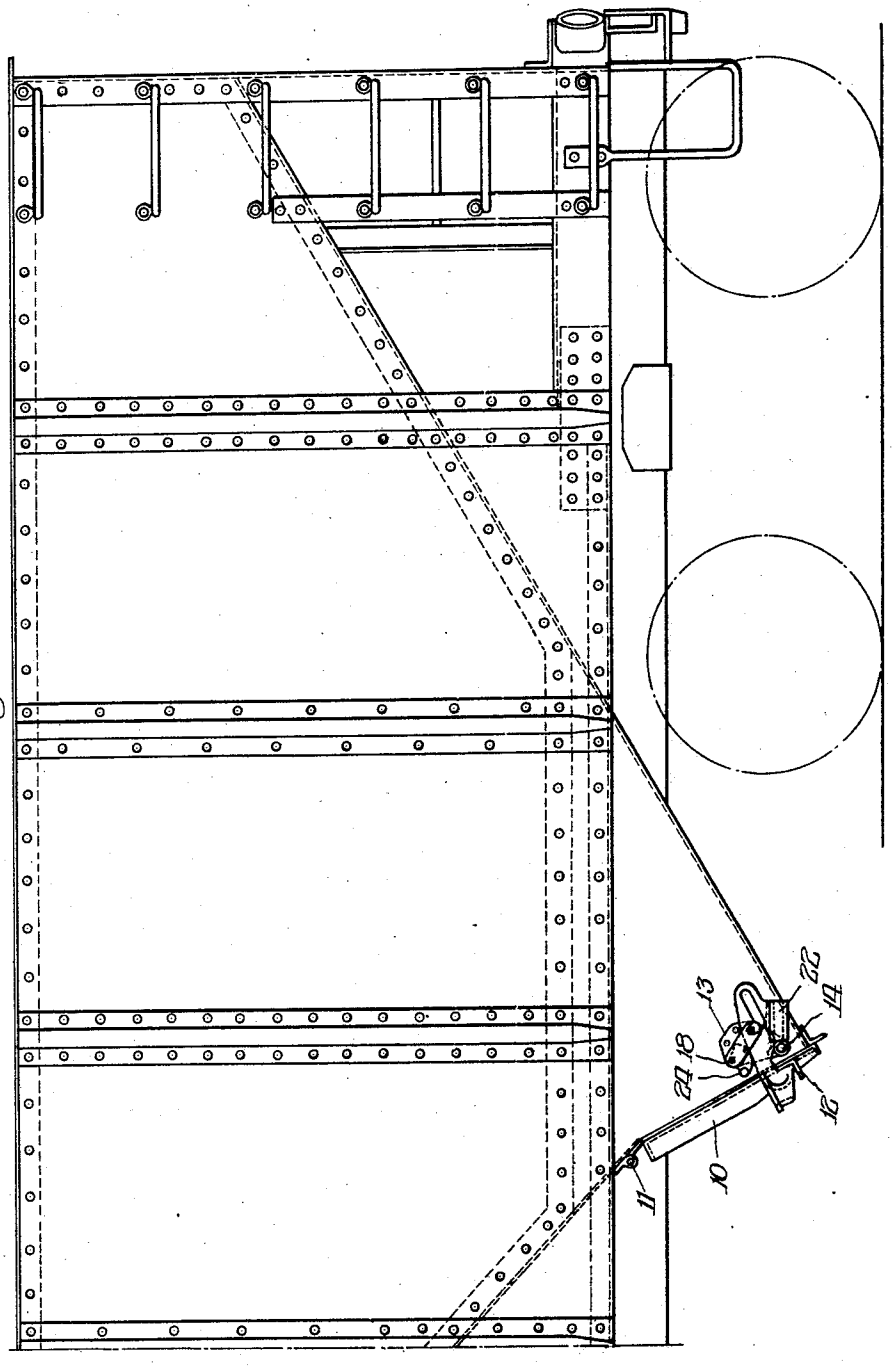


Fig. 1

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Fig. 2.

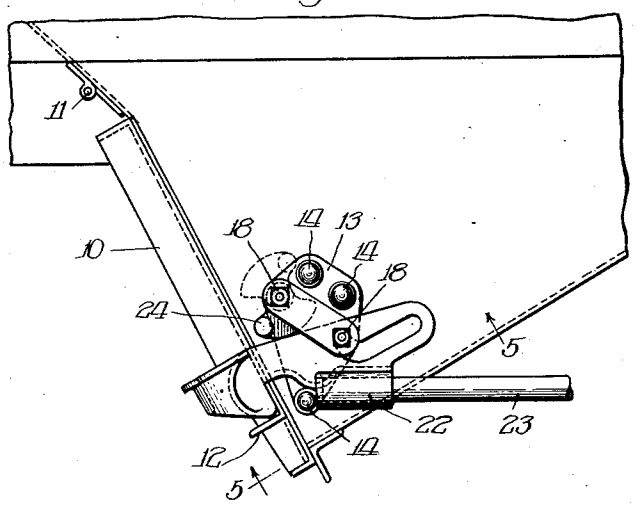


Fig. 3.

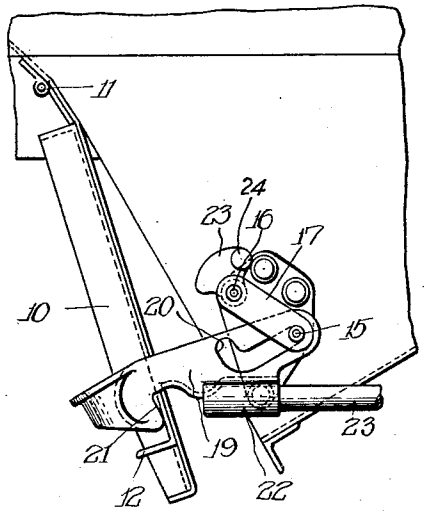


Fig. 4.

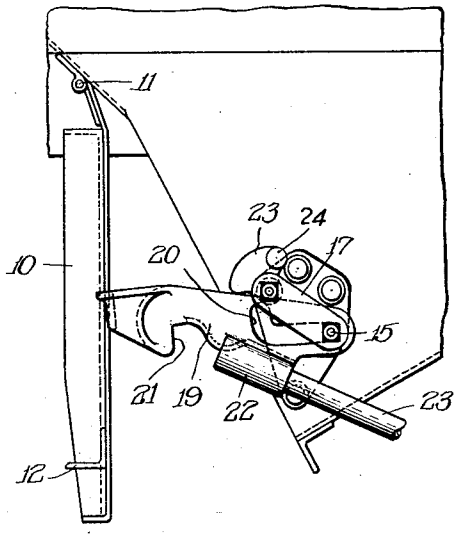
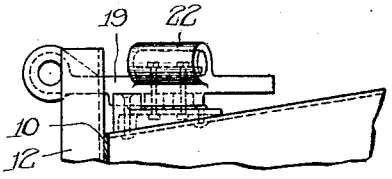


Fig. 5.



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UNITED STATES PATENT OFFICE

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LATCH FOR DUMP CAR DOORS

Application filed September 8, 1930. Serial No. 480,401.

This invention relates to a novel latching means for hopper doors, and is particularly useful as applied to hopper doors of railroad cars of the type employed for conveying and discharging material such as coal, ballast or the like.

The latching device of the present invention is characterized as adapted to readily hold and latch the door in the completely closed position or by ready and simple manipulation to completely release the door for a free and uncontrolled discharge of the contents of the car, and to also, by simple and ready manipulation, release the door from the closed position to a partial degree of opening whereby only a restricted flow or discharge of the lading is permitted.

In practice, it is often desirable in discharging the contents of cars of this general character, to provide only a limited or restricted flow of material from the car and accordingly, it is the object of this invention to provide a simple, inexpensive, and yet positive and efficient means by which the door may be released to a partial degree of opening and there securely held by the latch without liability of disengagement or accidental release of the door.

It is the further object of the present invention to provide a latch, which is not only capable of the partial opening above described but which will positively and efficiently secure the door in its completely closed position or completely release the door by simple movement of the latch.

These, and other objects not specifically enumerated are contemplated for the present invention as will readily appear to one skilled in the art as the following description proceeds. The present embodiment of the invention is given merely by way of example and is not to be considered as limiting the invention in any respect, as the scope of the invention should be determined from the appended claims, and an understanding of the present embodiment, with an appreciation of the advantages which the invention produces therein.

The following description will be more readily understood by referring to the accompanying drawings, in which:

Figure 1 is a side elevation of one end of a hopper car of usual construction provided with the door latching means of the present invention;

Figure 2 is an enlarged elevational view showing the latching means in position with the door completely closed, and

Figure 3 is a similar view showing the door in partial open position held by the latching means;

Figure 4 is a similar view showing the door in completely released position, and

Figure 5 is a view taken on the line 5—5 of Figure 2, and looking in the direction of the arrows.

By referring to the drawings it will be noted that the latching means is applied to a hopper car of usual construction, the details of which will not be described, but which is provided with a transversely extending hopper having an opening at the lower end thereof closed by a door 10, pivoted at its upper end by a hinge 11. The door 10, is also of usual construction and will be observed to embody in its formation an angle bar 12, extending transversely across the lower end thereof for the purpose of engagement with a suitable latching means.

The latching means of the present invention comprises a base plate 13, which is rigidly secured by means of rivets 14, or other suitable fasteners, to the lower side walls of the hopper. Extending upwardly from the base plate 13, are a pair of pivot pins 15 and 16, respectively, the upper ends of which are connected by a metallic strap or plate 17. The strap 17, is mounted in spaced relation to the base plate 13, and is securely held in posi-

tion by means of nuts 18, on the outer ends of the pivots as clearly shown in Figure 2. Mounted on the pivot pin 15 is the latching dog 19, which is preferably constructed in the manner shown in the drawings. From an inspection of the drawings, it will be observed that the latching dog is provided with an L shaped slot 20, in which the pivot pin 15 is positioned for effecting the pivotal mounting of the latch. Forwardly thereof, at the outer end, the latching dog is provided with a shoulder 21 of a construction adapted to overlie and engage the angle bar 12 of the door.

The latching dog is further provided with a handle receiving socket 22, preferably of the character shown in the drawings whereby the movement thereof may be controlled by the handle 23. On the pivot pin 16, a cam shaped locking lug 23, is provided for pivotal movement and of a construction adapting it for engagement of the upper edge of the latching dog for locking the latter against accidental displacement when the door is latched in closed position. This feature is clearly shown in Figure 2. It will be observed, however, that the locking lug is free to be moved in a clockwise direction to a position of release whereby the latching dog is free to be swung upwardly as is necessary in manipulating the latch for a partial or complete opening of the door. The locking lug 23, is provided with an outwardly projecting boss 24, adapted for engagement with the strap 17, for confining the arcuate movement of the locking lug to the effective operating movement.

With the above understanding of the construction of the latch, it will be observed, as shown in Figure 2, that the latching dog may be positioned with the upwardly extending portion of the slot in engagement with the pivot pin 15, whereby the door engaging shoulder is brought to a position for engagement with the angle bar 12, for maintaining the door in completely closed position. With the latching dog so positioned, the locking lug may then be moved to the full line position in Figure 2, whereby the door is securely held closed without liability of accidental displacement or release.

Now in the event it is desired to open the door to a partial degree, this may be accomplished by first inserting the handle 23, in the socket 22, subsequently removing the locking lug to the dotted line position shown in Figure 2, so as to permit free movement of the latching dog, after which the handle is lifted in a manner to cause the latching dog to swing around the point of contact with the angle iron of the door as a pivot, and to thereby move the pivot pin 15, out of the upwardly extending portion of the slot. After such movement is effected, the weight of the lading on the door is free to force the door to the partial open position and extend sufficient to move the latch to bring the pivot pin 15, in engagement with the extreme right hand end of the slot. When the pin reaches the end of the slot, the opening movement of the door is arrested and the door is held against further movement by the engagement of the shoulder with the angle iron.

If it should be desired to completely open the door, after the door has already been partially opened, as shown in Figure 3, it is merely necessary to move the handle downwardly in a manner to swing the latch bodily in a clock-wise direction around the pivot pin 15, which will result in a disengagement between the shoulder and angle iron, and a full release of the door.

On the other hand, if it is desired to open the door to the full released position originally from the completely closed position, it is merely necessary, after the locking lug is removed, to thrust the handle downwardly whereupon the latch will be caused to swing in a clock-wise direction on the pivot pin 15 in the upwardly extending end of the slot whereby it will disengage the shoulder 21, from the angle iron of the door. When the disengagement is once effected the weight of the lading will cause the door to swing to the free open position.

It is of course understood that the handle 23, is readily removable from the socket whereby it will not be necessary to maintain the extended awkward part as a permanent attachment of the car. When the manipulation of the latch is desired the handle may be produced and inserted in the socket for operation.

From the above description, it will readily appear that a door latching means is provided, which is simple in construction and easy to manipulate, and it will accomplish the various objects specified therefor. It will also be appreciated that the invention is applicable to other forms of doors where complete closing and opening, and a partial opening is desired, although it is recognized that the features thereof are particularly adapted to doors of hopper cars as herein illustrated.

I claim:

1. A latching device of the character described comprising a pivot, a latching dog, having a door engaging portion, and an angular slot therethrough, said pivot being positioned through said slot for mounting said latching dog and forming a pivot therefor in either end of said angular slot, and means for manipulating said latching dog in either clockwise or counter clockwise directions.

2. A latching device of the character described comprising a pivot, a latching dog, having a door engaging portion, and an angular slot therethrough, said pivot being positioned through said slot for mounting said latching dog and forming a pivot therefor

in either end of said angular slot, and a handle receiving socket on said latching dog.

3. A latching device of the character described comprising a pivot, a latching dog, having a door engaging portion and an L-shaped slot in sliding and pivotal engagement with said pivot, one end of said slot being further removed from the door than the other end thereof for operative positions of said latching dog, one arm of said slot extending in the direction substantially tangential to the pivotal movement of the door at the point of engagement of the latching dog therewith.

Signed at Chicago, Illinois, this 4th day of September, 1930.

WILLIAM J. HOSCEIT.