J. T. BRADY.

CAR DOOR LATCH AND OPENER.

APPLICATION FILED SEPT. 23, 1919.

1,370,515. **Patented Mar. 8, 1921.**

Fig. 1.

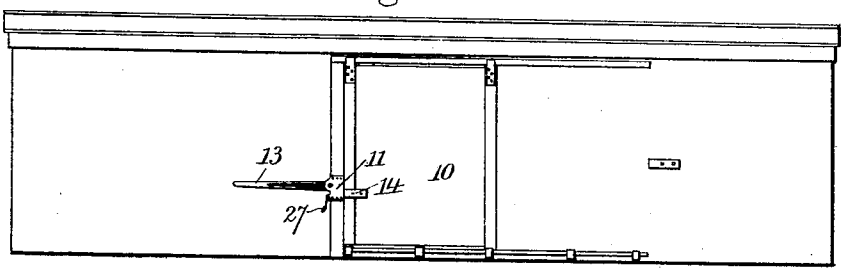


Fig. 2.

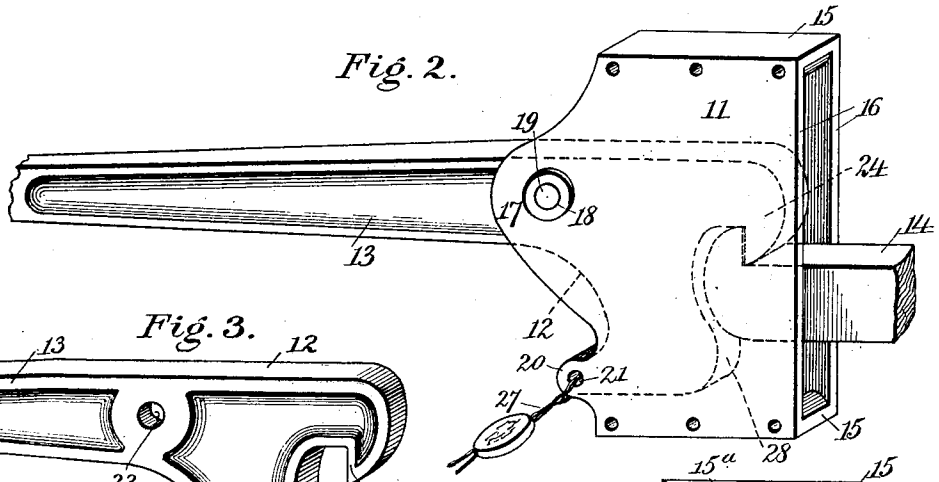


Fig. 3.

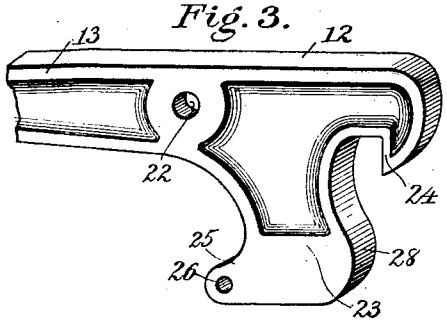


Fig. 4.

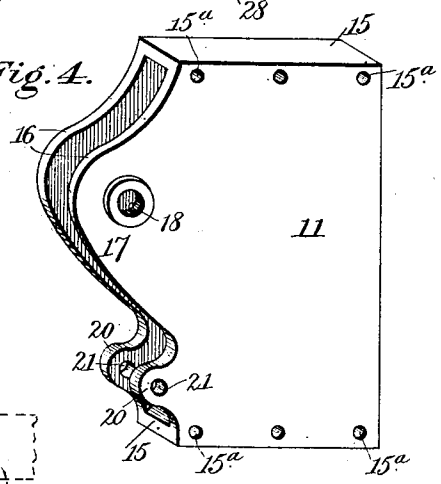


Fig. 5.

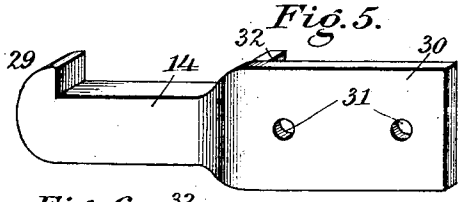
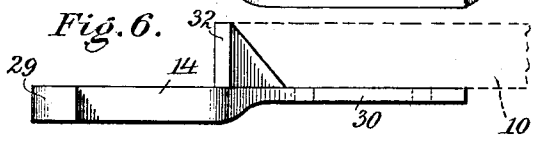


Fig. 6.



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CAR-DOOR LATCH AND OPENER.

1,370,515. Specification of Letters Patent. Patented Mar. 8, 1921.

Application filed September 23, 1919. Serial No. 325,672.

To all whom it may concern:

Be it known that I, JAMES THOMAS BRADY, a citizen of the United States, residing at El Dorado, in the county of Union and State of Arkansas, have invented a new and useful Car-Door Latch and Opener, of which the following is a specification.

This invention relates to door latches, and particularly to car door latches constructed to function also as openers.

The objects of the invention are to furnish a door lock which will be automatic in action when the door is closed, which will keep the door locked under all conditions of service, which will release and partly open the door with one movement, which will function after the door has settled, which can be used in connection with a car seal, which will work easily, have long life and the necessary ruggedness and strength.

The invention is especially designed for use on railway freight car doors; but obviously is applicable to all sliding or rolling doors with many benefits to be realized therefrom.

For a complete understanding of the invention, reference should be made to the drawing accompanying this specification and forming a part of the same, with the understanding, however, that changes from or modifications of the disclosure of the drawing may be made, provided such lie within the scope of the appended claims.

In the drawing:—

Figure 1 is an elevation of a portion of a railway freight car with the invention applied to the same.

Fig. 2 is a perspective view of the device detached, portions being broken away;

Fig. 3 is a similar view of the latch and opener, a part of the handle being omitted;

Fig. 4 is a similar view of the housing for the locking parts;

Fig. 5 is a like view of the keeper; and

Fig. 6 is a top plan view of the same; indicating the position of the door in dotted lines.

The numeral 10 designates a door of a car mounted to slide horizontally. This door is secured and opened by means of the present invention, which is made up of three principal parts; a casing or housing 11, a latch and opener 12 inclosed by the housing, and a keeper 14 engaging with the latch and opener. The housing 11 is secured in any firm manner to the car close to the doorway, and is preferably of one piece of material, with the narrow upper and lower walls 15 connecting the spaced side walls 16. The two ends of the housing are left open. Holes 15^a are provided at the top and bottom of the housing for the reception of bolts in fastening the housing to the car. The side walls have ears 17 with bearings 18 for a pivotal bolt or other element 19 upon which the lever latch and opener 12 are mounted. Similar but much smaller protuberances or ears 20 having bores 21 are formed upon the walls 16 for a purpose to be described.

The latch and opener 12 has a bore 22 for the reception of the pivot 19, and a long tapered handle 13 by means of which it may be swung on the pivot within the housing 11. This handle however is light in weight and is overbalanced by the heavy latch end, the main portion of the weight 23 being at the bottom. The said latch end has a latching hook 24 made extra wide and long enough to engage with the keeper on the door even after settling of the latter. On the lower part of the weight 23 there is an extension 25 similar to the ears 20 and matching the same. A bore 26 in extension 25 is caused to aline with the bores 21 when the latch is in the latching position. A seal 27 may then be applied to the alined bores 21, 26 thus affording a certain means of ascertaining whether or not the car lock has been tampered with. The heavy weighted end 23 prevents any tendency on the part of the latch from unduly vibrating when the car is in motion, and thus avoids any undesirable strain being put upon the wire of the car seal. The extension 25 is beneath the pivot of the latching element, but on the same side of the pivot as the hook 24, so that that part of the latching element which coöperates with the seal also aids in the overbalancing of the handle. The outer edge of the weight 23 has a bulging cam edge 28 adapted to engage with the keeper to force the door open as will be explained below.

Above the cam edge 28 and beneath the hook 24 is a space adapted to receive the keeper whose hook end 29 slides under and locks with the hook end of the latch when the door is closed. The keeper has a reduced flat portion or shank 30 with bolt holes 31 or similar means by which it may

be secured to the door. A rib 32 outstanding from the inner face of the keeper is driven into the door at its edge so as to relieve the bolts of some of their strain, and thus strengthen the connection of the keeper to the door.

The operation of the invention will be readily understood. In closing the door the keeper being rigidly carried moves the latch end of the pivoted latch upwardly until it can pass under the hook 24, when the latch falls by gravity, and the latch end engages the keeper to hold the door closed. It will be understood that the outer rounded face of the hook end 29 of the keeper strikes the outer face of the hook 24 moving the latter upwardly and in dropping by gravity the hook 24 of the latch engages with the hook 29 of the keeper. The seal is then applied. The heavy latch will be maintained in locked position because of its weight under all conditions of service. When the seal is used it will serve as additional means for holding the latch in locking position, while at the same time making the lifting of the latch impossible unless the seal be first broken.

In order to open the door the handle is pulled down upon, which movement disengages the latch and raises the cam edge 28 against the keeper. A continuation of the swinging movement of the latch by means of its handle will force the keeper out of the housing, which will cause the door to partially open. The long handle and the cam edge gives a powerful leverage, which will force a car door open even though frozen or stuck with some material, after which it may be slid along the hangers to the full extent desired.

The present invention is also advantageous because the lock is automatic. In many cases car unloaders will close the doors but will not take time to fasten them. This failing of human nature causes about ninety per cent. of the damages to car doors. By merely sliding the door it automatically locks when my invention is used. The invention is so constructed that it may be applied to any car without change in any of the parts. An important feature of this invention resides in the fact that the latch and opener engages the keeper within the housing whereby the engagement of said elements is fully protected.

In other constructions than car doors, the housing could be replaced by a simple plate constituting a support for the latch.

In still other constructions where an opening movement is not desired, the long handle could be dispensed with.

What is claimed is:—

1. In a door fastening, a housing, a latch pivoted to and within the housing and having a downturned latching hook, a handle integral with the latch and extending out from the housing, a cam edge formed on the end of the latch below and in rear of said hook, a keeper secured to the door and having an upturned hook engaging the hook of the latch within the housing to lock the door, said handle being operable to lift the hook of the latch from the hook of the keeper and to force the door open by means of the engagement of the cam edge with the outer edge of the keeper hook.

2. In a door fastening, a housing composed of opposite side walls spaced apart and connected at top and bottom leaving the two ends open, a keeper on the door having an upturned hook with a rounded outer face, the hook of said keeper being adapted to be projected within one end of the housing, a latch having a downturned latching hook to engage with the upturned hook of the keeper, said latch being pivoted to and mounted within the housing, a depending weighted portion on the latch located between the pivot and the hook, said portion having its outer edge shaped to provide a cam edge which is spaced from and arranged below the hook of the latch, said cam edge curving around and underneath the hook of the keeper and engaging the rounded face of said hook when opening the door to effect a forced opening of the same under all conditions of service.

3. In a car door latch, a keeper fixed on the door and having an upturned hook end, a housing secured upon the car, a latch and opener pivotally mounted in the housing and having a long handle extending outside the housing, and a weighted depending portion within the housing overbalancing the handle, the weighted depending portion having at the bottom and at one side an extension provided with a bore, said housing having ears matching the extension, and each ear provided with a bore whereby when the latch is locked the bores are alined for the reception of a car seal, said weighted depending portion having a cam edge at the edge remote from the extension for engagement with the hook end of the keeper to lift and thrust the same out of the housing when the door is being opened, the latch at its end having a depending hook arranged above and spaced from the cam edge, said cam edge curving around and underneath the hook end of the keeper when the door is latched.

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

JAMES THOMAS BRADY.

Witnesses:

L. S. MORGAN,

R. C. JOHNSON.