July 4, 1933. R. A. SCHAAF 1,917,159

CAR DOORLATCH

Filed June 30, 1932

Fig. 1.

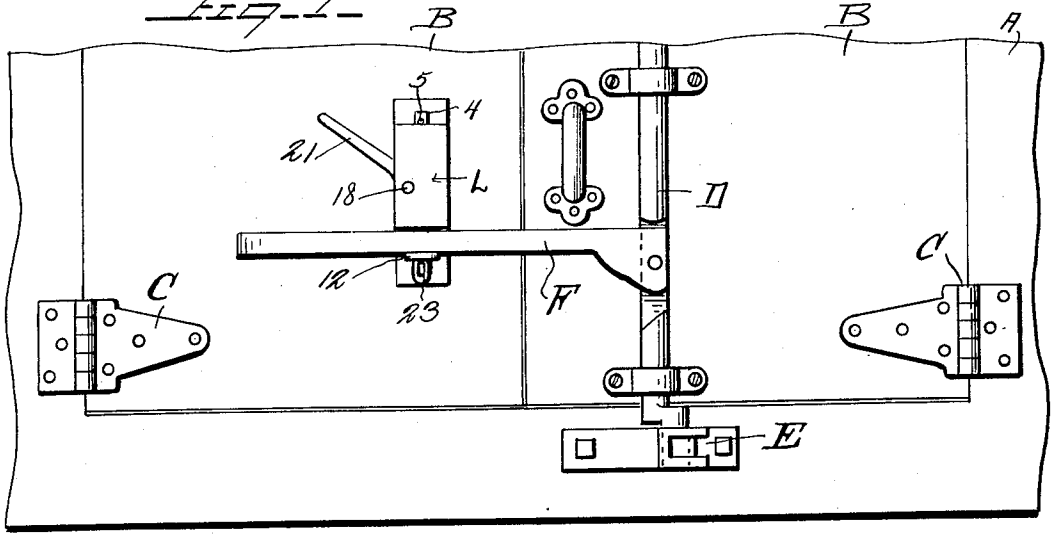


Fig. 3.

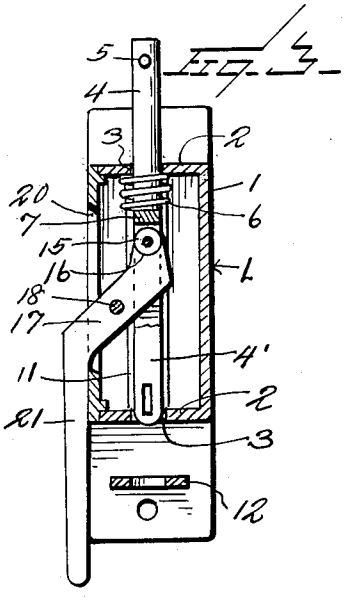


Fig. 2.

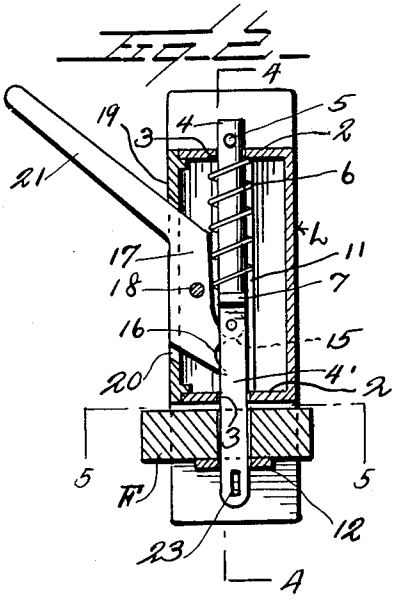


Fig. 4.

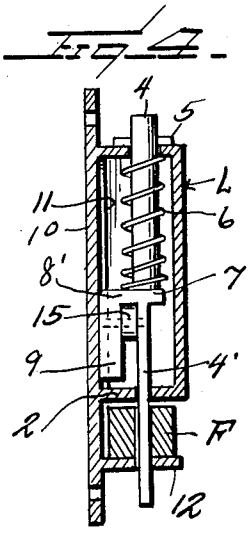
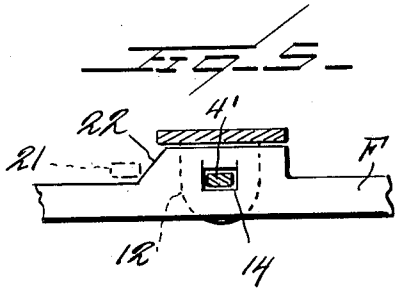


Fig. 5.



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UNITED STATES PATENT OFFICE

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CAR DOORLATCH

Application filed June 30, 1932. Serial No. 620,261.

This invention relates to a car door latch and has relation more particularly to a device of this kind especially designed and adapted for use in connection with a car door fastener embodying use of a hasp lever such, for example, as is well known in the Miner type of refrigerator cars, and it is an object of the invention to provide a latch of this kind which operates automatically in connection with the lever for holding the same in effective or locking position.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved car door latch whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:—

Figure 1 is a fragmentary view in elevation of a pair of refrigerator car doors, one of which having applied thereto a latch constructed in accordance with an embodiment of my invention;

Figure 2 is a view partly in section and partly in elevation of my improved latch as herein disclosed, the associated hasp lever being shown in section and with the latch bar in holding position;

Figure 3 is a view similar to Figure 2 with the latch bar in raised or inoperative position and the hasp lever omitted;

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 2;

Figure 5 is a sectional view taken substantially on the line 5—5 of Figure 2.

As disclosed in the accompanying drawing, A denotes a portion of a refrigerator car having the conventional refrigerator car doors B hingedly connected, as at C, to the car A.

Carried by one of the doors B is a well known type of operating shaft D, each end portion of which coacting in a well known manner with a keeper E secured to the car frame or to the upper or lower sill of the door frame. Pivotally connected with the shaft D is a hasp lever F of a conventional type. As the foregoing features are well known and particularly in the Miner type of car it is not believed that a more detailed illustration and description are required.

When the doors B are properly closed the hasp lever F is swung into a position to overlie a second door B and is held in such position by the latch mechanism L suitably positioned upon this second door B.

As herein disclosed the latch mechanism L comprises a housing 1 bolted or otherwise secured to the door B and has its opposite ends 2 provided with the aligning openings 3 through which the end portions of a latch bar or lever 4 are freely movable. One end portion of the bar 4 exteriorly of the housing 1 has disposed therethrough a stop pin 5 which by contact with the adjacent end wall of the housing 1 serves to limit the endwise movement of the bar 4 in one direction under the influence of the expansible member 6. This member 6 as herein disclosed comprises a coil spring of requisite gauge encircling the latch bar 4 and interposed between the outer or upper end 2 of the housing 1 and the shoulder 7 carried by the latch bar 4 within the housing. This shoulder 7 is provided by a laterally directed arm 8 extending beyond opposite sides of the bar 4. One end portion of this arm 8 is continued by a block 9 disposed in a direction parallel to the bar 4 and which block 9 has sliding contact with the rear or back wall 10 of the housing 1 and within a trackway 11. This block 9 assures the latch bar 4 having requisite endwise movement without rotation.

The working end portion 4′ of the bar 4 is flattened and when the bar 4 is at the limit of its movement under the action of the expansible spring or member 6 said portion 4′ extends beyond the housing 1 a distance sufficient to bridge the space between the inner or lower end 2 of the housing 1 and a lip 12 projecting from the back plate 10 at a de-

sired point spaced from or below the inner or lower end 2 of the housing 1.

The extended or projected portion 4′ is also adapted to be directed through a suitably positioned opening 14 provided in the hasp lever F when in its locking position and resting upon the lip 12 as particularly illustrated in the accompanying drawing.

Rotatably supported between the block 9 and the portion 4′ of the bar 4 and preferably adjacent to the inner portion of the block 9 is a roller 15. This roller 15 is adapted to be engaged within a notch 16 provided in an end portion of a rock lever 17 pivotally mounted, as at 18, substantially midway its ends within the housing 1. The housing 1 in a side wall or plate 19 is provided with an elongated slot 20 through which this rock lever 17 has movement and the end portion of the lever 17 remote from the notch or recess 16 is provided with an angularly related operating extension arm 21.

As the arm 21 is swung downwardly, or in a direction toward the lip 12, the notched or recessed end of the lever 17 will receive the roller 15 with the resultant retracting of the latch bar 4 and this movement of the lever 17 will continue until the arm 21 comes into contact with the housing 1, or more particularly the side wall or plate 19 thereof. While in its position, as particularly illustrated in Figure 3, the arm 21 will extend beyond or below the lip or plate 12 and the bar 4 will be in full retracted position.

At a point outwardly of but in relatively close proximity to the opening 14 therethrough, the hasp lever F is provided with a cam shoulder or surface 22 which, as the lever F is swung into position between the lip or plate 12 and the housing 1, will come into contact with the arm 21 and swing the same outwardly a distance sufficient to allow the member or spring 6, which has been under tension, to throw the bar 4 downwardly through the opening 14 in the hasp lever F whereby said lever F will be effectively held in its extended or locking position. The free extremity of the portion 4′ of the latch bar 4 is provided with a slot or opening 23 whereby a conventional seal strip may be engaged therewith.

When the bar 4 is in locking or extended position the arm 21 together with the lever 17 are in the positions particularly illustrated in Figure 2. When it is desired to free the bar 4, or more particularly the portion 4′ thereof, from the lever F it is only necessary to remove the seal strip and to swing the arm 21 to the position illustrated in Figure 3.

From the foregoing description it is thought to be obvious that a car door latch constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:—

1. A latch mechanism for a hasp lever having a cam surface comprising a latch bar, means for throwing the bar into a position to engage the hasp lever, and a movable arm for throwing the latch bar into release position, said arm when the latch bar is in release position being in the path of travel of the cam surface of the hasp lever when said lever is brought into position for engagement by the latch bar to throw the arm in a direction to allow the latch bar to engage with the hasp lever.

2. A latch mechanism for a hasp lever comprising a latch bar, means for throwing the bar into position to engage the hasp lever, and a movable arm for throwing the latch bar into release position, said arm when the latch is in release position being in the path of travel of the hasp lever to allow said lever when moved into position for engagement by the latch bar to throw the arm in a direction to allow the latch bar to engage with the hasp lever.

In testimony whereof I hereunto affix my signature.

RICHARD A. SCHAAF.