(No Model.)

T. B. KIRBY.

CAR LOCK.

No. 605,880. Patented June 21, 1898.

Fig. 1.

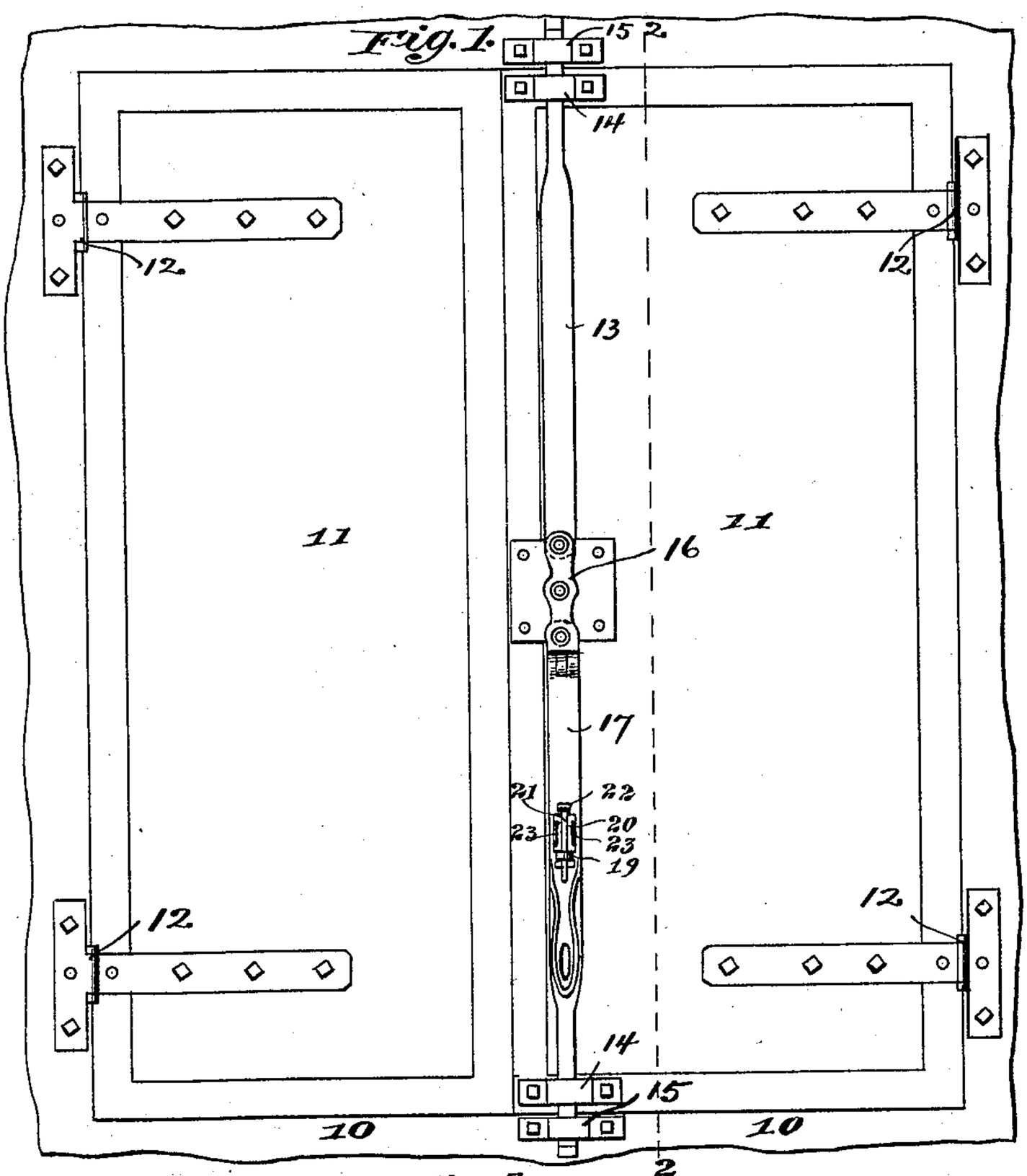


Fig. 2.

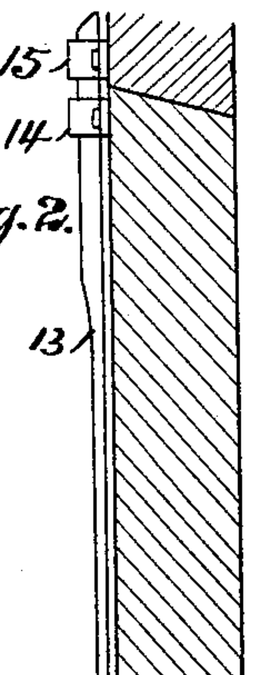


Fig. 3.

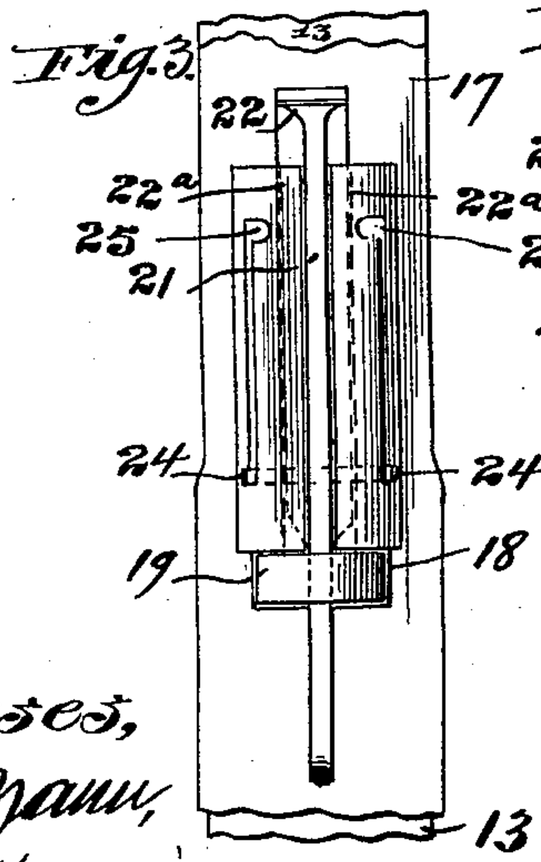


Fig. 4.

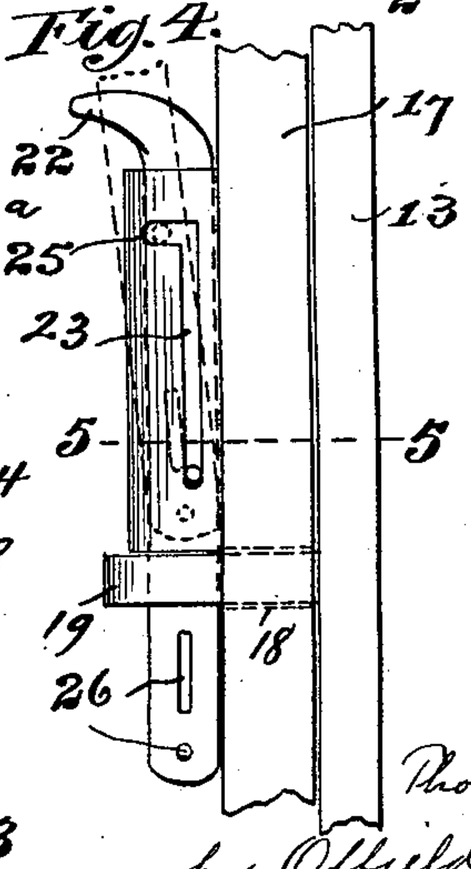
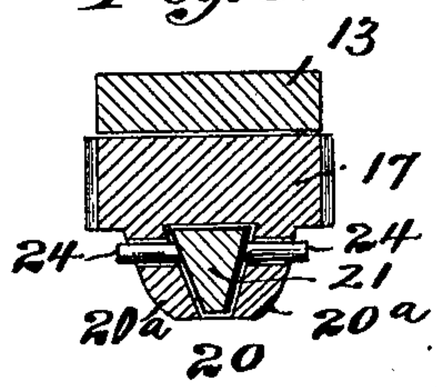


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS B. KIRBY, OF CHICAGO, ILLINOIS.

CAR-LOCK.

SPECIFICATION forming part of Letters Patent No. 605,880, dated June 21, 1898.

Application filed November 15, 1897. Serial No. 658,572. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. KIRBY, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Locks, of which the following is a specification.

This invention relates to car-locks, and more particularly to that class of locks used on refrigerator-cars known as the "Zimmerman" type, and has for its object to provide means for holding and guiding the locking-pin and securing it from becoming detached or separated from the other parts of the lock and thereby becoming lost.

To these ends my invention consists in certain novel features which I will now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a structure embodying my invention. Fig. 2 is a sectional view of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is an enlarged elevation of the locking-pin and its guide and keeper. Fig. 4 is a side elevation of the same, and Fig. 5 a plan section taken on the line 5 5 of Fig. 4.

In the said drawings, 10 represents the wall of the car, and 11 the car-doors, which are hinged at 12 to the car-body. These doors are locked in the usual manner by locking-bars 13, passing through guides 14 on one of the doors and adapted to engage with keepers 15 on the car-body, being operated by means of a link 16, centrally pivoted on the car-door and having the locking-bars 13 pivoted to its free ends.

17 represents the operating-lever, which also serves as a locking-hasp, being slotted, as shown at 18, to receive a loop or staple 19, which is adapted to pass through the slot 18 and receive the locking-pin on the outer side thereof.

The construction thus far described is that usual in locks of the class to which my invention relates, with the exception that in the ordinary construction the loop or staple 19 and the slot 18 are vertically arranged, whereas in the construction which I have devised these parts are transversely arranged, the slot and loop or staple being vertical. Heretofore in locks of this description the locking-pin, which is inserted through the staple 19 after the loop or hasp 17 has been engaged with the same, has been connected to the car-door by means of a chain, and in practice it has been found that owing to the liability of the chain to become broken or detached the locking-pin is frequently lost and it is thereby rendered impossible to lock the car. Moreover, in this prior construction it is necessary to lift the locking-pin into position opposite the opening of the loop or staple before the pin can be inserted in order to lock the car. I obviate these disadvantages by providing upon the operating lever or hasp 17, above the slot 18 and in line with the opening of the loop or staple when the same is inserted through the slot 18, a guide or keeper 20, which is preferably cast in one piece with the lever or hasp 17 and which in its preferred form consists of two flanges 20^a, extending longitudinally of the lever or hasp and inclined outwardly toward each other. In this form of structure the locking-pin 21 has inclined sides to engage the correspondingly-inclined flanges of the guide or keeper, so as to prevent said locking-pin from being separated from the lever or hasp 17. It is obvious, however, that the flanges 20^a and the body of the locking-pin may be given other shapes than that shown for the purpose of causing a proper engagement between the pin and the flange of the keeper. The locking-pin is provided with a head 22, by means of which it may be operated, and this head may also serve the purpose of limiting the downward motion of the pin and preventing it from dropping down through the keeper and thus becoming separated therefrom. In practice, however, I prefer to effect this limitation of the motion of the pin relatively to the keeper by providing a vertical slot 23 in the keeper and a coöperating projection 24 on the locking-pin. In the construction shown the keeper is provided with a slot 23 in each of its flanges, the pin having two projections 24, which are conveniently formed by means of a pin passing transversely through the body of the locking-pin and having its ends projecting into the slots 23. A lateral notch or recess 25, communicating with the slot 23, serves to receive the projection 24 when the locking-pin is raised in the manner shown in dotted lines in Fig. 4, and thus hold the locking-pin in that ele-

vated position with its lower end above and clear of the slot 18, so that the loop or staple 19 may pass through said slot without coming in contact with the lower end of the pin in the operation of locking the car. The locking-pin is provided in the usual manner with an opening or openings 26 in its lower end to receive suitable sealing devices or other locking means such as are usually employed in this connection.

The operation of the device will be readily understood from the preceding description. The locking-pin, being carried by and secured on the operating lever or hasp, cannot become detached and lost or misplaced and may be held up in position by the means provided for that purpose, so as to leave the slot 18 clear for the passage of the loop or staple 19, and when the operating lever or hasp 17 is swung down and back into position, so that the loop or staple 17 projects through the slot 18 therein in the manner shown in the drawings, the locking-pin is always in proper line with the opening of said loop or staple and in position to pass through said opening by a direct downward movement, in which movement it is properly guided by the keeper 20. This engagement may take place by gravity alone, it being only necessary, when the construction shown in the drawings is employed, to disengage the projections 24 from the notches or recesses 25, when the locking-pin will fall into position, and the car may be at once sealed or otherwise secured.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore set forth. For example, it will be seen that the engagement of the projections 24 of the locking-pin with the slots 23 of the keeper is in itself sufficient to guide the pin and limit its movements without the necessity of so shaping the keeper and the pin as to cause an engagement of the body portions of these two parts. I prefer, however, to so shape the pin and keeper for the reason that the strain is thus taken from the pins or projections of the locking-pin, these parts being of comparatively small dimensions and therefore less adapted to resist the strains of use. Moreover, while I have used the term "slots" as applied to the structural features coöperating with the projections 24 it is obvious that grooves will serve the same purpose as slots, and it will also be seen that the grooves or slots may be in the pin and the projections on the keeper. I therefore do not wish to be understood as limiting myself to the precise details hereinbefore described, and shown in the drawings.

I claim—

1. In a car-lock of the character described, the combination, with the locking-bar having a loop or staple and the hinged slotted operating-lever, of a guide or keeper mounted on said lever adjacent to the slot therein, and a locking-pin mounted to slide in said guide or keeper, substantially as described.

2. In a car-lock of the character described, the combination, with the locking-bar having a loop or staple and the hinged slotted operating-lever, of a guide or keeper mounted on said lever adjacent to the slot therein, a locking-pin mounted to slide in said guide or keeper, and means for holding the said locking-pin in an elevated position clear of the slot, substantially as described.

3. In a car-lock of the character described, the combination, with the locking-pin having a loop or staple with a vertical opening and the hinged slotted operating-lever, of a guide or keeper on said lever extending vertically upward from the slot therein, when the lever is in its locked position, and provided with a notch, and a locking-pin mounted to slide vertically in said guide or keeper and having a projection to engage the notch thereof whereby said pin may be held in an elevated position, substantially as described.

4. In a car-lock of the character described, the combination, with the locking-bar having a loop or staple, of the hinged slotted operating-lever having a keeper or guide thereon composed of integral inclined flanges provided with notched slots, and a locking-pin adapted to engage said flanges, and provided with projections to engage the slots and notches, substantially as described.

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