

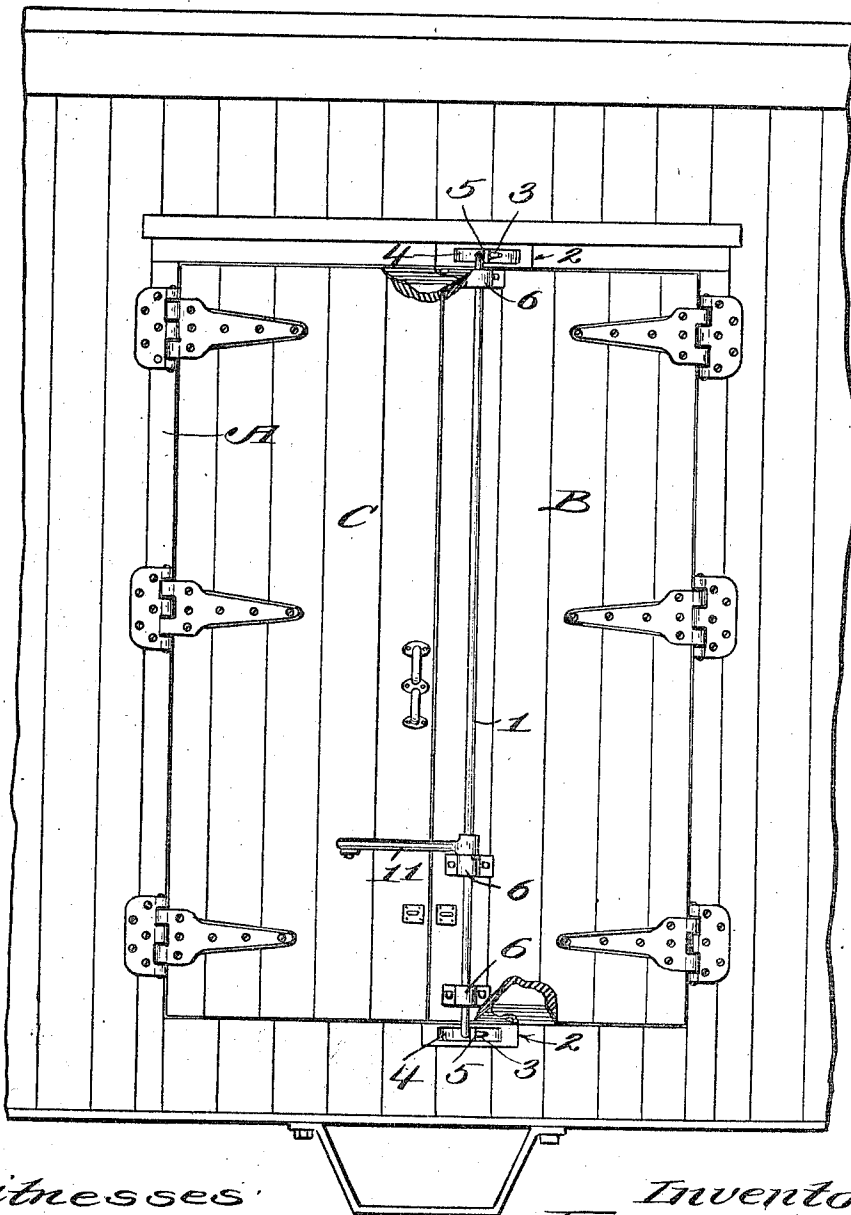
J. R. CARMER.
FASTENER FOR CAR DOORS.
APPLICATION FILED DEC. 18, 1911.

1,037,125.

Patented Aug. 27, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

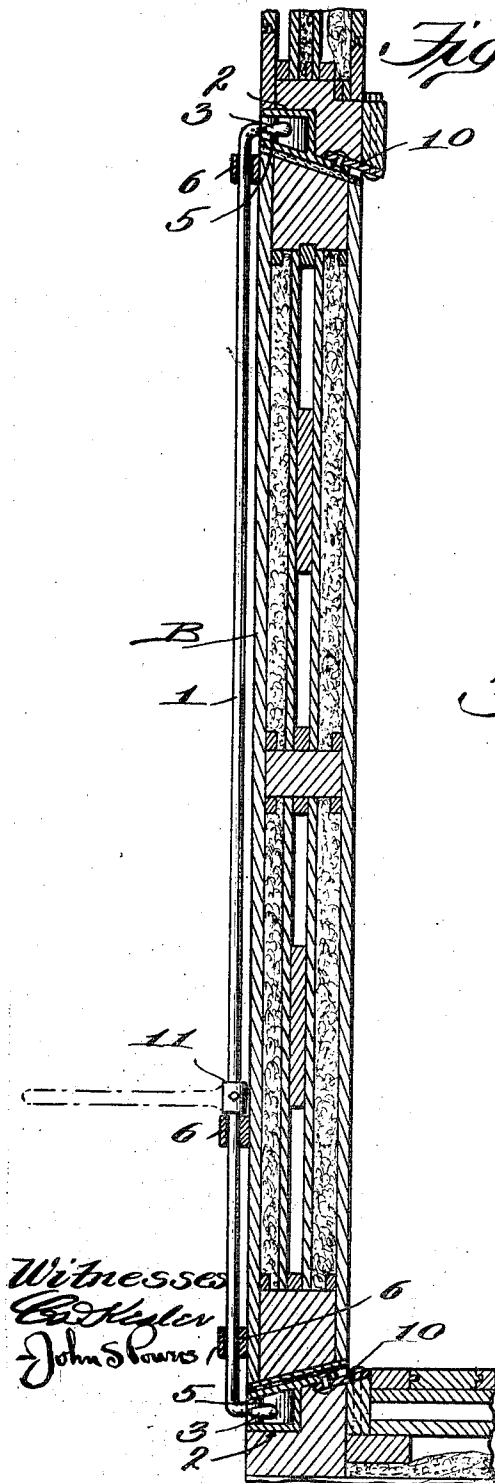


Fig. 2.

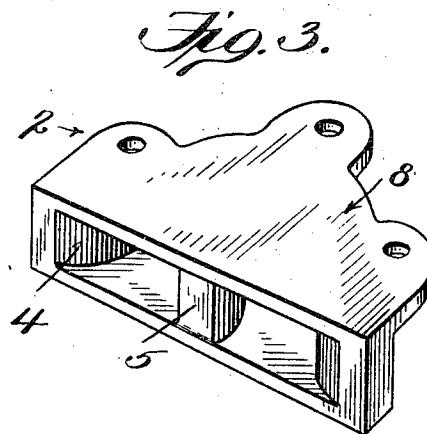


Fig. 3.

Fig. 4.

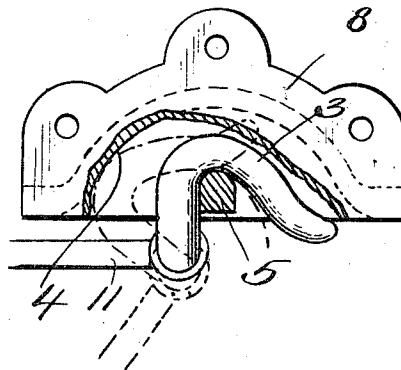


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES R. CARMER, OF WILMINGTON, DELAWARE.

FASTENER FOR CAR-DOORS.

1,037,125.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed December 12, 1911. Serial No. 666,315.

To all whom it may concern:

Be it known that I, JAMES R. CARMER, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented new and useful Improvements in Fasteners for Car-Doors, of which the following is a specification.

This invention relates to improvements in fasteners for car doors, and it proposes a construction of that general type wherein a vertical rod is mounted for turning movement upon the door, (or, if there be two companion doors, upon one of them) and has its ends formed for locking engagement with keepers which are secured to the door frame.

A car door fastener in accordance with the present invention, while of general advantage in connection with all kinds of box freight cars, is of especial advantage in connection with cars designed for air tight and refrigerating storage. It is of great importance in this latter connection that the doors should at all times have a secure and uniform fit in their frames. This condition does not obtain in many cases, even where the door may be excellently constructed and accurately fitted, for the reason that the fasteners used may be accidentally operated, or may be distorted when projecting parts thereof strike against platforms or like obstructions. A fastener in accordance with the present invention avoids this objection and positively insures of the door being in proper and accurate relation to its frame at all times, and in addition has other advantages which will appear as the description proceeds.

The improved fastener is illustrated in the accompanying drawings, in which:

Figure 1 is a view in elevation showing a practical application of a fastener in which the features of the invention are incorporated; Fig. 2 is a view in vertical section of the same; Fig. 3 is a detail perspective view of one of the keepers; Fig. 4 is a view, partly in plan and partly in section, showing the elements of the fastener in locking relation, and Fig. 5 is a detail perspective view showing the form of the rod element of the fastener at either end thereof.

Similar characters of reference designate corresponding parts throughout the several views.

The drawings show a car having the door frame A and two companion doors B and C,

the arrangement being the well known one in which the inner edge portion of the door B overlaps the adjacent edge portion of the door C and thereby maintains the closed relation of the latter when the door B is locked in closed relation.

The elements of the door fastener are the rod 1, which is mounted vertically, for example, upon the door B, for turning movement, the keepers 2, which are secured to the frame A, and the locking fingers 3, which are formed at the ends of the rod 1 and engage in the keepers to maintain the closed relation of the door B.

The lintel and sill of the door frame A are suitably recessed and the keepers 2 are fitted in these recesses in such manner as to come flush with the outer face of the door frame. The keepers 2 consist of boxes which have upper and lower walls, and a vertical wall 4, but which have no front wall nor any elements which project beyond the front face of the door frame. The vertical wall has a substantially semi-circular curvature, its end portions extending to the front face of the keeper and having an outward curvature to facilitate the movement of the fingers 3. The opening at the front of each keeper is interrupted by a centrally disposed vertical web 5, which web is suitably spaced from the vertical wall and has a transversely curved rear face.

The rod 1 is mounted in suitable bearings 6 and has at its ends fingers 3 with coöperate with the keepers. The fingers 3 are disposed in horizontal planes and are hook shaped, their curvature being approximately semi-circular.

The bottom wall of the upper keeper and the top wall of the lower keeper are arranged on inclines which correspond to the inclines of the confronting faces of the lintel and the sill, said inclined walls, as 8, being flush with said respective faces. Each wall 8 is provided with a suitable number, e. g., three, of apertured attachment lugs, which are riveted or otherwise securely fastened to lintel and sill plates 10.

In use, the door C is closed and then the door B. As the door B comes into closed position, the rod 1 is turned by the handle 11 until the latter lies against the door C. As the rod 1 is thus turned, its hook-like fingers 3 will move inwardly, at the same time engaging over the webs 5 and establishing the locked relation of the doors. In this con-

nection, it should be noted that the arrangement of the rod 1 and the radius of the fingers 3 are so selected that, as said fingers enter the keepers at one side of the webs 5, the inner curved face of the wall 4 will exert a cam-like action on the fingers which causes the doors to be forcibly drawn against the seating faces of the door frame and to thereby have a secure fit, sufficient to prevent or practically prevent the passage of air into or from the car. In like manner, when the rod 1 is turned in the reverse direction to release the doors, the inner curved face of the wall 4, coacting with the fingers 3, will establish a cam-action which tends to start the doors from their seat and to thus make it easier to open the same, especially in cold weather, when there is liability of the doors being "stuck."

20 In Fig. 4, the position of the fingers 3, during which the cam-action referred to in the preceding paragraph is effected, is indicated by dotted lines. It should also be noted that the fingers 3 may be, throughout their effective extent, of the same diameter as the rod, and are fashioned by simple bending operations.

It is to be particularly noted that the keepers embody no parts which project beyond the door frame and that the fingers 3, when in operative relation, are, in effect, wholly inclosed in the keepers, and that their engagement with the webs 5 is of such nature that they cannot become disengaged from said webs, except by a turning movement of the rod 1; that is to say, no ordinary jar or shock can effect the disengagement of the fingers from the webs. In existing types of fasteners, wherein the keepers project from the car, the fingers and the keepers are liable to distortion or other damage and the seating of the door is thus detrimentally affected, sometimes with serious consequences, when the good condition of the articles stored in the car depends upon the maintenance of a certain proper temperature. It should also be noted that the keepers are reversible, that is to say, they

are of the same construction and may be used interchangeably, either on the lintel or the sill. Furthermore, they are formed symmetrically with respect to the web 5 and consequently, the rod 1 may be fitted upon either of the doors B or C and the fingers 3 may come into engagement with the webs 5 at either side of the keepers.

Having fully described my invention, I claim:

The combination with a door frame having a recess in one of its horizontal bars and a door which seats against the frame, of a fastener, substantially as described, comprising a vertical rod rotatably mounted on the door, a keeper fitted in the recess and including a vertical wall transversely curved and a vertical web spaced from the wall and arranged at the forward side of the keeper, the web being substantially flush with the front face of the door frame and the rod being located at one side of the web, and a hook like engaging finger which may be of the same cross sectional diameter as the rod and is disposed in a horizontal plane and provided upon that end of the rod which adjoins said keeper, the finger being adapted for locking engagement with the web and having a curved outline of such selection that said finger engages the curved wall prior to its locking engagement with the web, when the rod is being operated to close the door, and subsequent to its locking engagement with the web, when the rod is being operated to open the door, the engagement of the finger with said curved wall establishing a cam action which, on the closing of the door, tends to spring the door to its seat, and on the opening of the door, tends to start the door from its seat.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES R. CARMER.

Witnesses:

BARNET GLUCKMAR,
BENJAMIN FISCHER.