A. W. ZIMMERMAN.

Car-Door Bolt.

No. 228,241. Patented June 1, 1880.

Fig 1

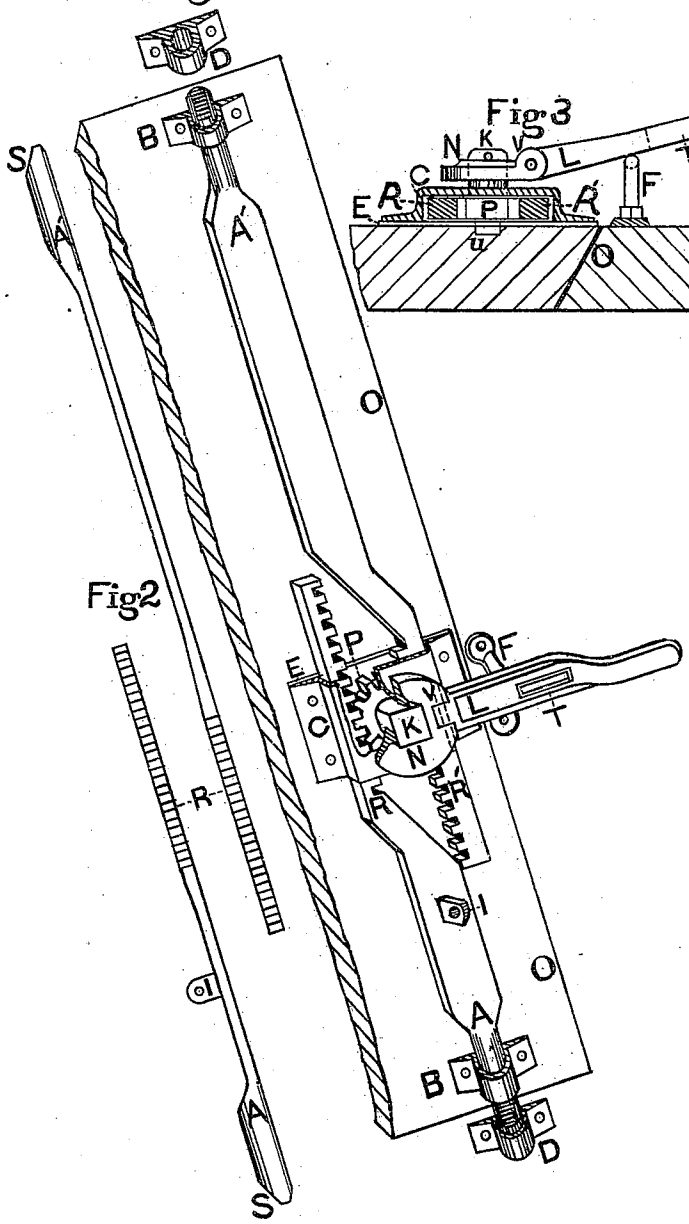


Fig 3

WITNESSES

Geo. B. Stoddard

Herbert A. Crandall

INVENTOR

Arnold W. Zimmerman

By Wm. Zimmerman

Atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARNOLD W. ZIMMERMAN, OF CHICAGO, ILLINOIS.

CAR-DOOR BOLT.

SPECIFICATION forming part of Letters Patent No. 228,241, dated June 1, 1880.

Application filed July 16, 1879.

To all whom it may concern:

Be it known that I, ARNOLD W. ZIMMERMAN, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car and other Door Fastenings, of which the following is a specification.

The invention relates to the fastenings of such car, refrigerator-car, refrigerator, and like doors as swing upon hinges.

The ends I seek to accomplish are, first, the means of securely locking the above-described class of doors; second, the securely closing such doors against the admission of air by driving the door or doors up firmly against the jambs, frame, or joint of door by means of the peculiar construction and working of the bolts in said lock; and, third, the opening of said doors, which, having been thus securely driven home and fastened, are, from their peculiar construction and use, liable to stick or swell from dampness or other causes, and require considerable force to open.

The construction and use of my lock will be fully understood by reference to the accompanying drawings, of which—

Figure 1 is a perspective view, with cover partly broken away so as to show its internal construction. Fig. 2 is a side view of the two bolts. Fig. 3 is an end view of lock upon a section of a door.

Like letters refer to like parts in each figure.

A′ and A are bolts provided with racks R′ R, which engage on opposite sides of a pinion, P. The pinion P has a shaft passing through the bed-plate E below and up through the cap-piece C, above which it is squared to receive the nut N, to which is hinged the lever L at the joint V. The bolts A′ A pass through sleeves B B into eyes D D on frame of door.

As shown in Fig. 1, the bolts are withdrawn and the lever L is resting upon the fulcrum F, which fulcrum may be the handle of the adjoining door. By pressing inward upon the end of lever L a considerable force may be exerted, much more than the same person could do by simply pulling at the door, which may be thus easily opened. When the lever L is then let go it will drop down until it strikes the staple I or becomes parallel with the bolt A.

When the lock is in the position last described and it is desired to lock the door, it is pushed in far enough so that the points or ends of the bolts A′ A may be made to enter the eyes D D, and the lever L is swung around, (in this case to the left,) thereby turning the pinion, which engages the racks R′ R, and thus powerfully pushing the bolts A′ A outward; and from the fact that the ends are inclined, as shown at S S, will cause the bolts A′ A to push or draw the door inward with great force, thus driving it home snug against its frame or bearings, which preferably should be made at an angle, as shown in Fig. 3 at O.

When the lever L, in locking, has completed a revolution, it is parallel with and over the lower bolt, A, which bolt has a staple, I, upon it, so placed that it can now enter the slot T in lever L, which may then be fastened by a padlock, seal, or otherwise.

In Fig. 2 the under sides of the bolts are shown straight. In Fig. 1 the bolts are crooked sidewise, so that the racks R′ R, on either side of the pinion P, may be parallel with the bolts A′ A, and the bolts themselves work upon the same center line, which, however, is not essential.

The bolt A is considerably shorter than A′, for the purpose of keeping the lock within easier reach from the ground.

I do not broadly claim the construction of bolts with inclined ends, as such are well known, and constructed by Chevallier, Patents 49,085, Feldman, 46,891, Birge, 162,017, &c., in which the bolts are beveled for the obvious purpose of overcoming any looseness of parts or imperfect fitting. The bolts A A′, as shown in my construction, answer this same purpose, and at the same time a great deal more, for they act like wedges, or, rather, inclined planes, pushing with great power against the plane of the door to drive it home

through a space of from one to seven inches, while at the same time the bolt may be made light and strong.

What I claim as my invention is—

1. The combination, with the bolts A′ A, of pinion P, hinged operating-lever L, and fulcrum F, substantially as and for the purpose specified.

2. The combination, with the bolts A′ A, pinion P, hinged operating and slotted lever L, and fulcrum F, of the staple I, substantially as shown and described.

ARNOLD W. ZIMMERMAN.

Witnesses:

GEO. B. STODDARD,

HERBERT A. CRANDALL.