J. F. STREBERGER.

LOCK FOR CARRIAGE DOORS.

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987,651.

Patented Mar. 21, 1911.

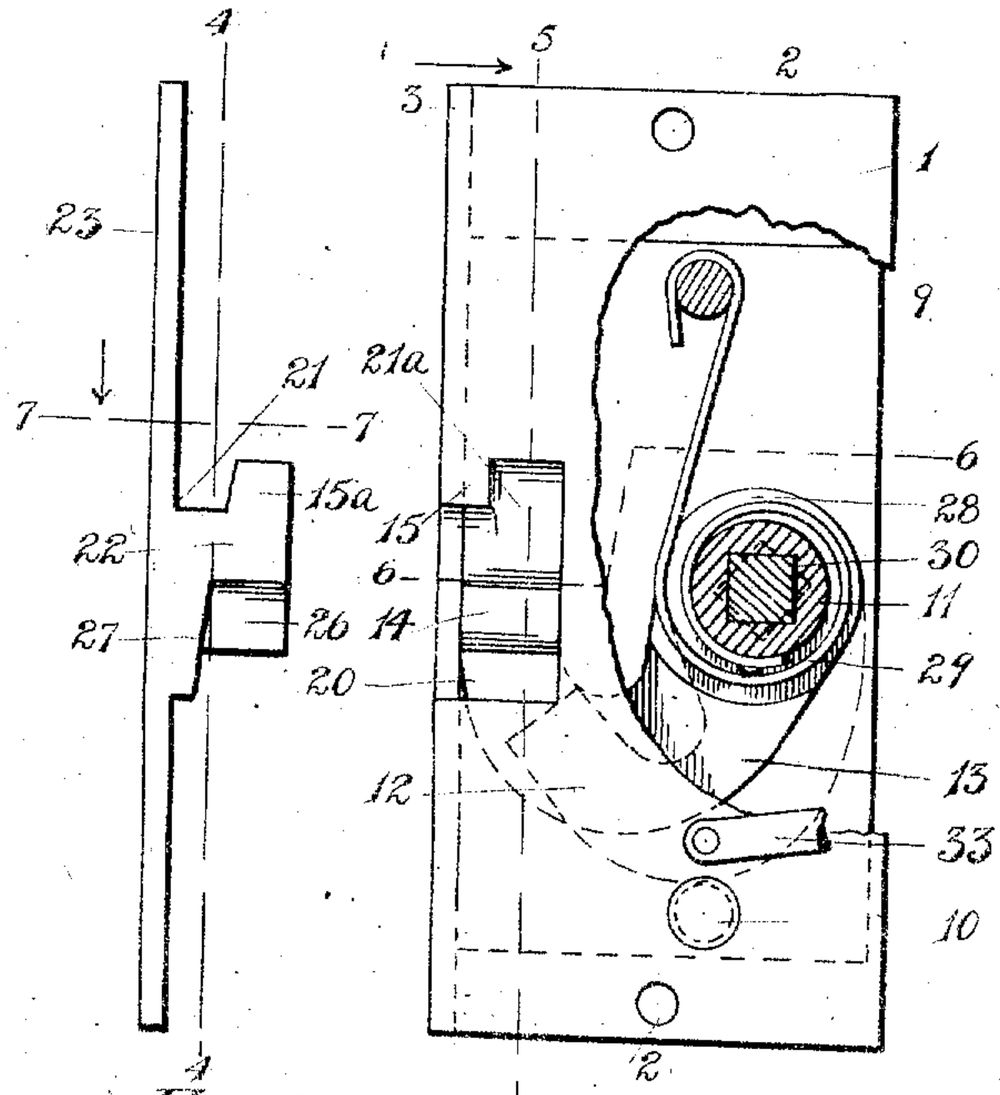

Fig. 2. Fig. 1.

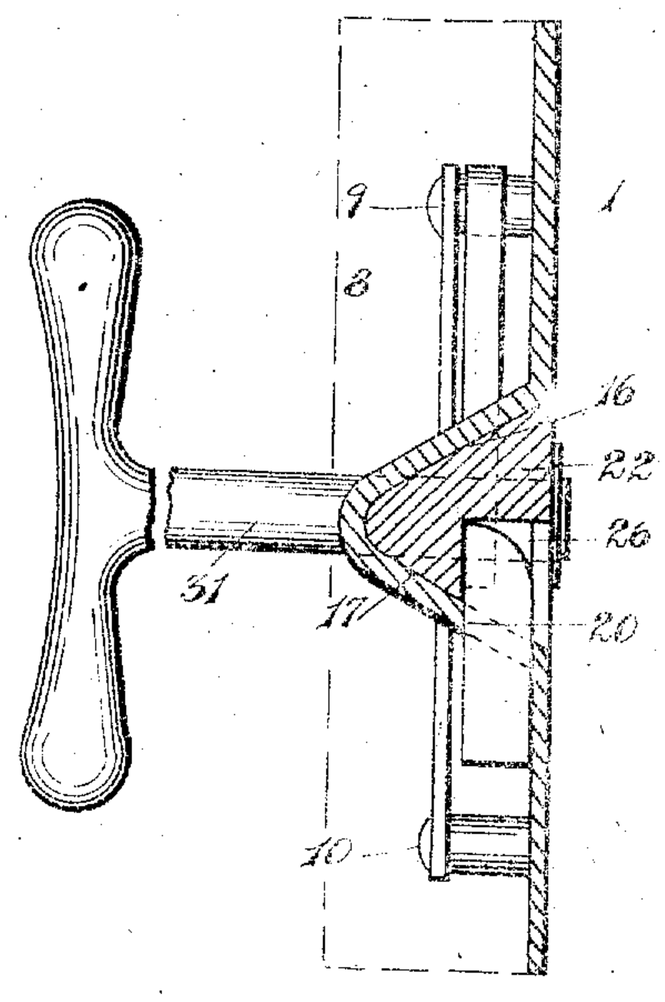

Fig. 5.

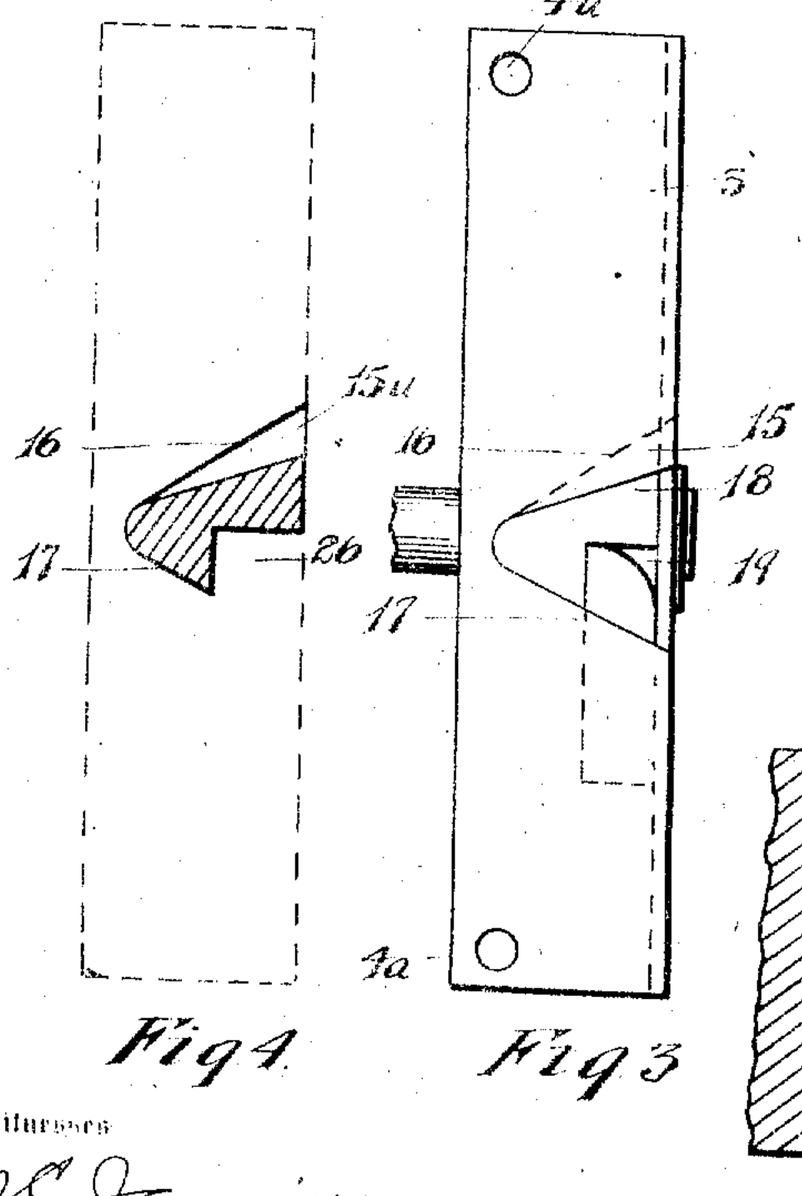

Fig 4. Fig 3.

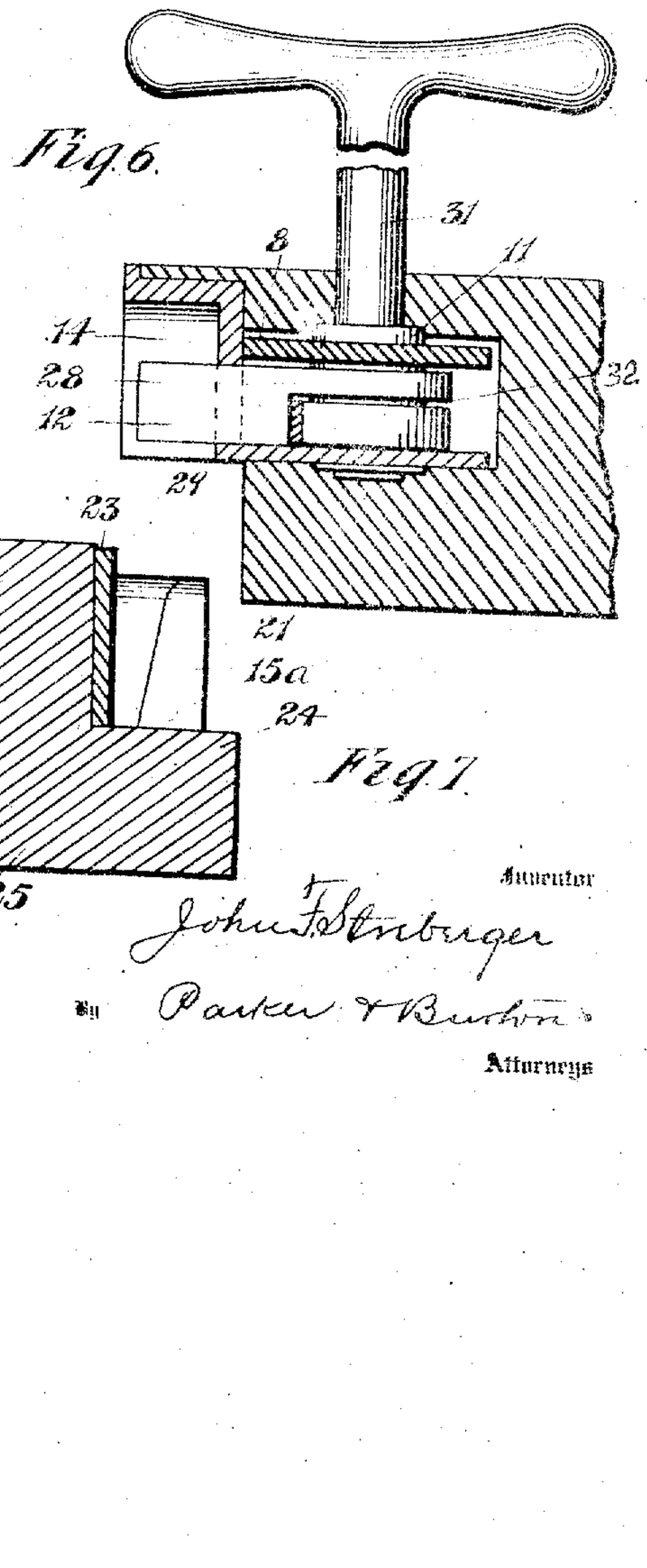

Fig 6. Fig 7.

Witnesses

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UNITED STATES PATENT OFFICE.

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LOCK FOR CARRIAGE-DOORS.

987,651. Specification of Letters Patent. **Patented Mar. 21, 1911.**

Application filed September 6, 1910. Serial No. 580,664.

To all whom it may concern:

Be it known that I, JOHN F. STREBERGER, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Locks for Carriage-Doors, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to latches for vehicle or other doors, and has for its object a latch which forces the door member into a tight vertical and lateral engagement with the frame member thus preventing vibration or movement either vertically or laterally.

A further object is the providing a rest for the door which will release the strain on the hinges. It is well known that the common form of latch does not form a tight engagement on account of the space which must be allowed for the latch to play in its recess, nor, does it to any appreciable extent help the hinges support the door.

My invention by the use of a spring-actuated latch bolt to bear upon the projecting frame member and force it into the recess member in the latch-case, and by providing interlocking lugs and channels in the oppositely beveled face of the projecting member and latch recess overcomes the common fault of loose engagement, and the projecting member being positioned directly under the upper side of the recess member, the door bears upon the projecting member and said member acts as a hanger for the door.

In the drawings:—Figure 1, is an elevation of the latch-case with a portion of the face plate cut away showing part of the latch-bolt, the barrel and the spring. The remainder of the latch-bolt is shown in dotted lines. Fig. 2, is an elevation of the frame plate and the projecting frame member in proper position for engagement with the latch-case as shown in Fig. 1. Fig. 3, is a side view of the latch-case with the latch-bolt in normal position. Fig. 4, is a cross section of the frame member taken along the line 4—4 of Fig. 2 viewed from the left. Fig. 5, is a vertical cross section through the line 5—5 of Fig. 1 in engagement with the frame member as in Fig. 2 viewed from the left of the figures. Fig. 6, is a cross section along line 6—6 in Fig. 1 viewed from above. Fig. 7, is a view of the channeled face of the projection frame member fitted to the door frame.

Similar characters of reference represent similar parts in all the figures.

In the drawings, 1 is the face plate of the latch case.

2, are openings in which screws may be inserted and the latch-case attached to the door.

3, is the side plate of the case which is attached to the end of the door by screws passed through openings 4^a; 8, is the rear housing plate screwed to the posts 9 and 10 and perforated to admit and form a bearing for the barrel 11 which is integral with the latch-bolt arm 13 which connects the latch bolt 12 with the barrel 11. The face plate 1 has also a perforation which acts as a bearing for the barrel 11. The latch bolt has its end face beveled outward and downward.

14 is a recess of the latch case formed of a plate separate from or integral with the housing plates of the latch case. The opening in the face plate 1 is rectangular except for the projection of the reëntering lug 15 in the one outside corner; the upper face 16 and the lower face 17 of the recess are inclined at substantially the same angle toward each other, as they recede from the face plate and meet in a small curve. The inside wall 18 has an opening 19 for the latch-bolt 12 which enters the recess through the opening 20 in one of the faces.

One of the beveled faces of the recess member and the projecting frame member are channeled and lugged, each possessing a lug on the outside and a channel on the inside.

15, represents the lug of the recess 14 and 15^a the lug of the projecting frame member.

21, is the channel in the projecting member and 21^a the channel of the recess 14. The channel 21 of the frame member recedes from the apex of member 22 and gradually deepens and narrows toward the base of the member. The top of the channel does not narrow as much as the bottom and hence the side of the channel is inclined from the bottom outward. The channel of the recess member is the same shape and lies

in the same position with respect to the apex and base of the recess. The lugs are shaped the same as the channels, and are made large enough to wedge in under the pressure of the latch bolt.

The face opposite the channeled face of the member 22 is notched as at 26 and a wall 27 is left between the notch and the plate 23.

The arm 13 of the latch-bolt is notched on the side adjacent the face plate and forms a collar 28 in its attachment to the barrel, 11, the notch and collar forming a chamber 32 for the coils of the spring 29, which engages around and is fastened at one end to the barrel 11; the other end is hooked around post 9. A square perforation 30 is provided in the barrel and in this fits a shank 31 of a knob or handle which turns the barrel 11. This oscillates the arm 13 in the arc of a circle as far as the stop-post 10.

33 is a pivot with part of a lever, which may be attached and used as a connection with a hand lever inside the carriage.

The movement of the arm to the stop post completely withdraws the latch-bolt from the recess 14, and after the grip on the handle is released the spring causes the latch bolt to return to its position in the recess 14 where it is stopped by the upper edge of the opening 19.

The members latch by swinging the door against the door stop and projecting member 22. The bevel faces of the member 22 engaging the beveled end face of the latch-bolt, overcomes the tension of the spring and the bolt is forced out of the way until traveling along the face of the projecting frame member it meets the notch 26. The spring then forces it into the notch and the members are locked together. The lugs and channels of the members are, as described above, fitted to wedge together under the pressure of the latch bolt and thus form a tight engagement. The top of the recess then rests upon the upper face of the projecting member and the latter acts as a rest for the door, thus releasing the hinges of strain and in no way weakening or straining the latch bolt.

The members unlatch by turning the knob or door handle and this turns the barrel and withdraws the bolt from the latch recess. The parts then readily disengage and a pull on the handle will swing the door open.

What I claim is:—

1. A latch having in combination, a housing case having a recess with converging faces, one of which is provided with a latch bolt opening, a frame member adapted to fit in the recess, and having a notch in one of its faces, a spring-actuated bolt in said housing, adapted to be displaced by entrance of the frame member in said recess and to spring into the notch in the frame member, and means for withdrawing said bolt from said housing recess, substantially as described.

2. A lock, having in combination, a case provided with a recess having converging faces, one of which is lugged and channeled and the other provided with a latch bolt opening, a frame member having a recess and adapted to fit in the case recess, a spring-actuated bolt in said case adapted to be displaced from said recess by entrance of the frame member therein, and to spring into said frame member recess and hold said member in tight engagement in said case recess, and means for withdrawing said bolt from said frame member recess, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

JOHN F. STREBERGER.

Witnesses:

CHARLES F. BURTON,

LOTTA LEE BRAY.