Dec. 22, 1931. C. B. LOWE 1,837,560

LATCH MECHANISM

Original Filed Dec. 26, 1928 2 Sheets-Sheet 1

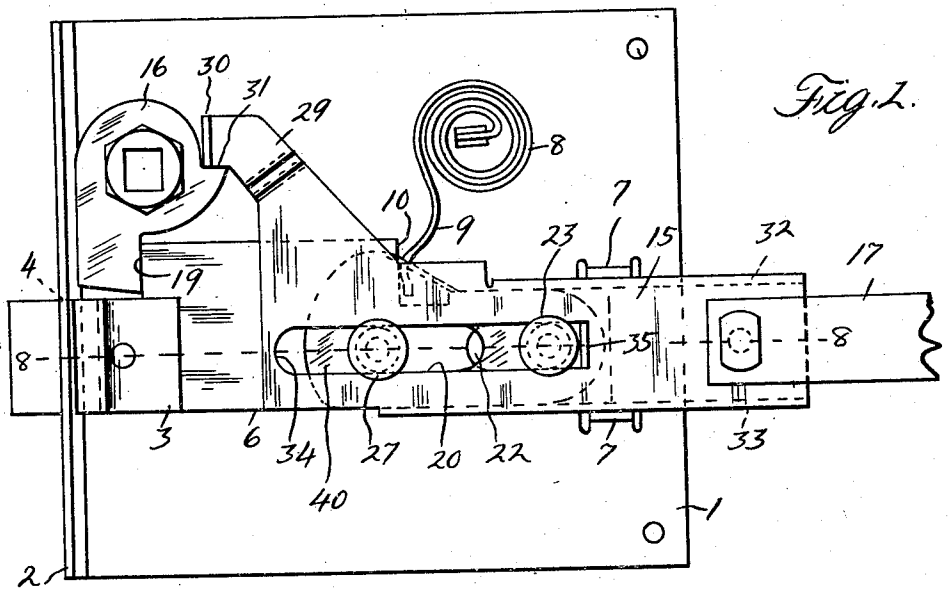


Fig. 1.

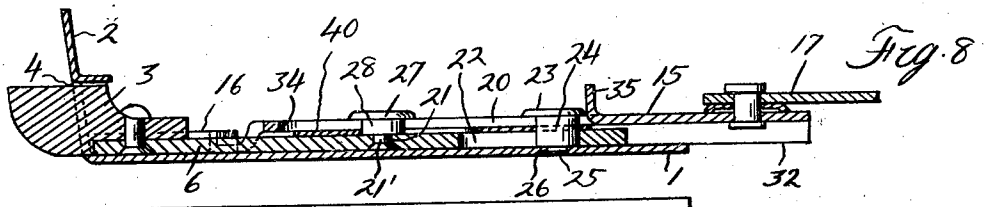


Fig. 8

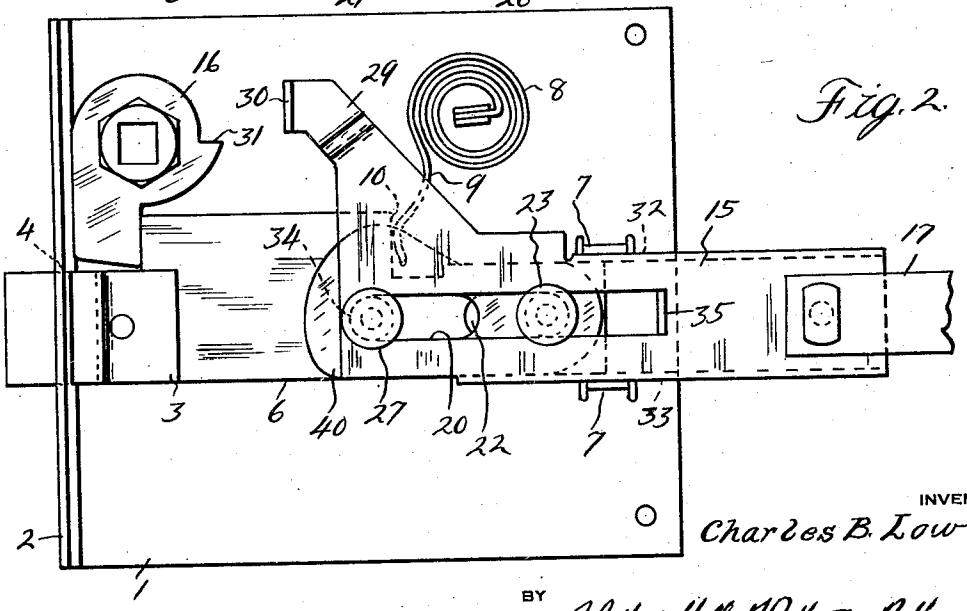


Fig. 2.

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Fig. 3.

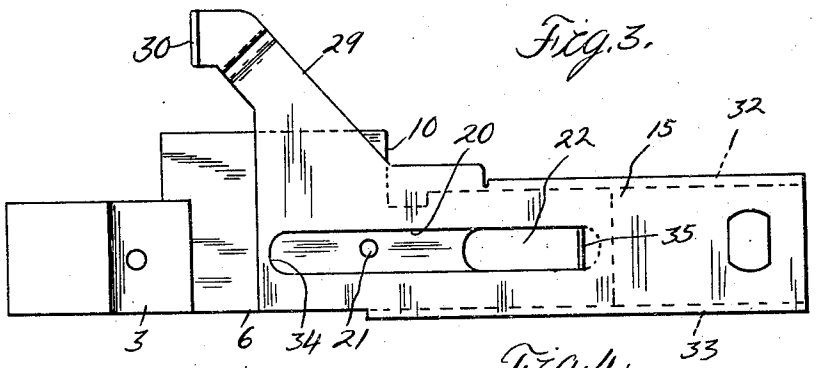


Fig. 4.

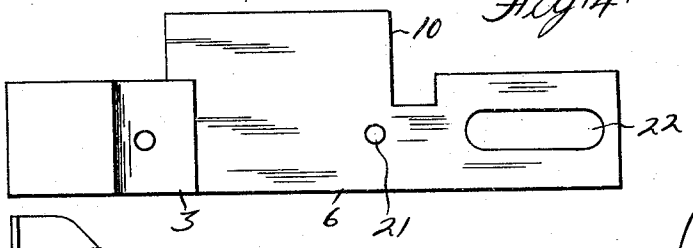


Fig. 6.

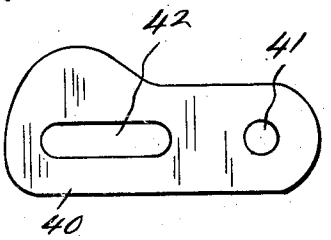


Fig. 5.

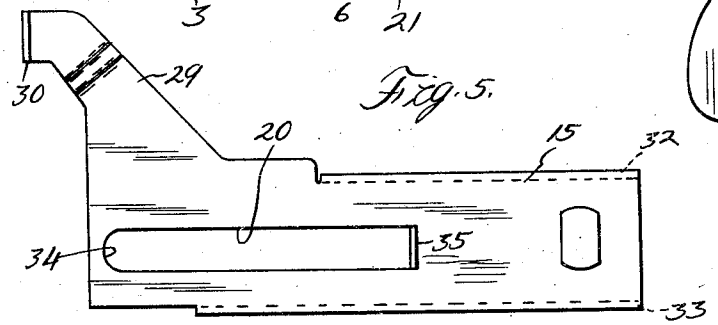
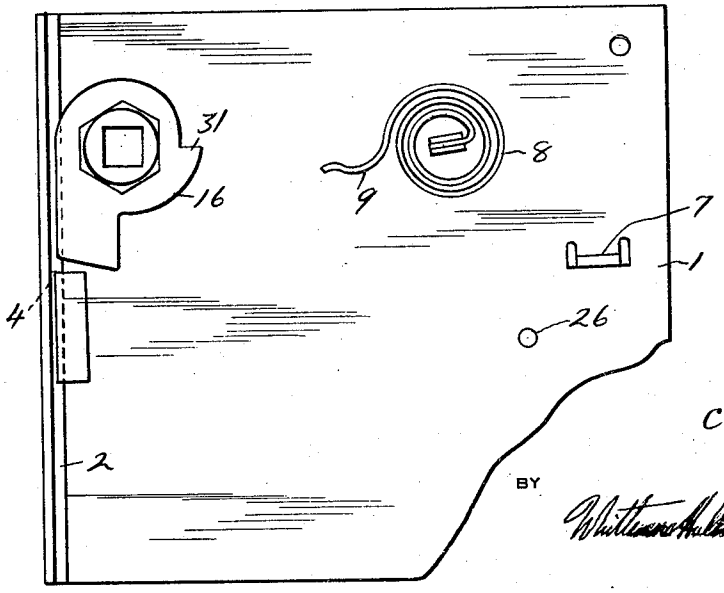


Fig. 7.



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UNITED STATES PATENT OFFICE

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LATCH MECHANISM

Application filed December 26, 1928, Serial No. 328,571. Renewed May 11, 1931.

This invention relates generally to vehicle door latches and consists of certain novel features of construction, combinations and arrangements of parts that will be hereinafter more fully described and particularly pointed out in the appended claims.

In the accompanying drawings—

Figure 1 is a side elevation of a latch mechanism embodying my invention showing the parts in dogging position,

Figure 2 is a view similar to Figure 1 and showing the parts in neutral position,

Figure 3 is a detail elevation of the latch bolt, yoke and forward link,

Figure 4 is a detail of the latch bolt and yoke,

Figure 5 is a detail view of the forward link,

Figure 6 is a detail view of the intermediate leaf spring,

Figure 7 is a detail view of the latch case plate with the movable parts removed therefrom.

Figure 8 is a sectional view on the line 8—8 of Figure 1.

Referring now to the drawings, 1 is a case plate adapted to be secured to the inner side of a door and having a lateral flange 2 at its forward edge adapted to be secured to the free edge of the door, 3 is a reciprocating latch bolt that is movable through an opening 4 in the lateral flange 2 for engagement with a suitable keeper (not shown), 6 is a substantially flat yoke rigidly secured to the bolt 3 and adapted to slide on the case plate 1 between struck-out lugs 7, and 8 is a helical spring anchored on the case plate and having a depending arm 9 abutting a shoulder 10 of the yoke and normally retaining the bolt in projected position.

For retracting the latch bolt 3, I have provided a reciprocating link 15 and a rotatable roll back 16. As shown, the link 15 has a slotted connection with the yoke 6 and is adapted to be operated from the inner side of the door by a link 17 and lever (not shown), while the roll back 16 is journaled in the case plate 1 adjacent to the lateral flange 2 for engagement with a shoulder 19 of the yoke and is adapted to be operated from the outer side of the door by a suitable handle and shank (not shown). Preferably the link 15 has a single relatively long longitudinally extending elongated slot 20 at the forward end thereof that registers with a circular opening 21 and a longitudinally extending elongated slot 22 in the yoke 6. A headed stud 23 has an enlarged shank portion 24 in the registering slots 20 and 22 and has a reduced shank portion 25 extending through and secured in a circular opening 26 in the case plate 1, while a second headed stud 27 has an enlarged shank portion 28 in the slot 20 in the link 15 and has a reduced shank portion 21 secured in the circular opening 21 in the yoke 6. This link 15 is also provided at its forward end with an upstanding arm 29 having a forward extension 30 that is adapted to be moved into the path of a shoulder 31 of the roll back 16 to prevent rotary movement thereof by the outside handle to retract the bolt, and is provided at its longitudinal edges with lateral guide flanges 32 and 33 that overlap or override the longitudinal edges of the yoke 6. Thus the stud 23 and flanges 32 and 33 serve as guides for the reciprocating link 15 while the stud 27 on the yoke 6 constitutes an abutment for the forward end 34 of the slot 20 when the link 15 is moved rearwardly by the lever and link 17 to retract the latch bolt. The stud 23 on the case plate 1 also serves as an abutment for a lateral flange 35 on the link 15 when the latter is moved forwardly by the lever 17 and link 18 to cause the arm 29 to dog the roll back 16.

In use the link 15 is oftentimes moved forwardly by the lever and link 17 when the door is open to cause the roll back 16 to be dogged by the arm 29, and when this is done some means is necessary to hold the link 15 and arm 29 against accidental displacement when the latch bolt 3 is moved rearwardly incident to the slamming to or closing of the door. In other words, when the door is moved to closed position the latch bolt 3 engages and is moved rearwardly by the keeper striker plate (not shown) and unless some means is provided for holding the link 15 in its forward dogging position with respect to

the roll back 16, the said link 15 being mounted on the yoke 6 secured to the bolt 3 would be moved rearwardly by the yoke 6 when the latch bolt is moved rearwardly with the result that the roll back 16 would then be accidentally released when the door was fully closed. In the present instance, however, such accidental releasing of the roll back is prevented by the provision of an elongated longitudinally curved or bowed leaf spring 40 that is located between the link 15 and the yoke 6. Preferably this spring 40 has a circular opening 41 that registers with the slots 20 and 22 in the link 15 and yoke 6 respectively and with the circular opening 26 in the case plate and receives the enlarged shank portion 24 of the headed stud 23, and has a longitudinally extending elongated slot 42 that registers with the slot 20 and circular opening 21 and receives the enlarged shank portion 28 of the stud 27. Thus with this construction the spring 40 is held against movement by the headed stud 23 but permits free movement therein of the stud 27 carried by the yoke 6. Due to its longitudinal curvature and spring qualities, the spring 40 has a tendency to keep the link 15 out of frictional contact with the yoke 6 so that the latter may move longitudinally on the case plate 1 without moving the link 15. Thus with my construction when the roll back 16 is dogged by the arm 29 of the link 15 when the door is opened, the said link 15 will be held by the spring 40 in dogging position so that it will not be moved by the yoke 6 when the latch bolt is moved rearwardly incident to the closing of the door.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim as my invention is:

1. In a door latch, the combination with two reciprocating parts, of means maintaining said parts in spaced relation to each other but operable to hold one of said parts against movement when the other of said parts reciprocates.

2. In a door latch, the combination with two reciprocating parts, of means associated with both of said parts and adapted to hold one of said parts against movement when the other of said parts reciprocates.

3. In a door latch, the combination with two reciprocating parts, of means located between said parts and normally separating the same but operable to hold one of said parts against movement when the other of said parts reciprocates.

4. In a door latch, the combination with two reciprocating parts movable successively and in unison, of means between said parts operable to hold one of said parts against movement when the other of said parts is moved.

5. In a door latch, the combination with two reciprocating parts arranged in overlapping relation and movable successively and in unison, of means located between said overlapping parts and operable to hold one of said parts against movement when the other of said parts is moved.

6. In a door latch, the combination with two over-lapping sliding parts, one being a link, of means between said parts and adapted to hold said link against movement during a predetermined sliding movement of the other of said parts.

7. In a door latch, the combination with two sliding parts, one being a link, of a leaf spring between said parts and adapted to hold said link against movement during a predetermined sliding movement of the other of said parts.

8. In a door latch, the combination with two sliding parts, one being a link, of a stationary member located between said parts and adapted to hold said link against movement during a predetermined sliding movement of the other of said parts.

9. In a door latch, the combination with two overlapping sliding parts, one being a link and movable relative to the other, of a stationary leaf spring between said parts and adapted to hold said link against movement during a predetermined sliding move- of the other of said parts.

10. In a door latch, the combination with two movable parts, one being a latch bolt yoke, and the other an actuating link for said yoke, of means between said parts capable of holding the link against movement when the yoke is moved.

11. In a door latch, the combination with a latch bolt having a sliding yoke, of means for retracting said bolt including a roll back and a link operatively associated with said yoke, said link overlapping and constituting a rearward extension of said yoke, means constituting a forward extension of said link for dogging said roll back when said link is moved relative to said yoke, and means between the yoke and overlapping link operable upon movement of said yoke to hold said link against movement and thereby maintain said dogging means in operative dogging position with respect to said roll back.

12. In a door latch, the combination with a case plate, a latch bolt yoke and a link arranged in overlapping relation and slidable successively and in unison on said case plate, of a member anchored on the case plate but located between said link and yoke and adapted to hold said link against movement during a predetermined movement of said yoke.

13. In a door latch, the combination with a case plate, of a stud projecting from said case plate, a latch bolt yoke slidably mounted on said case plate and having a slot receiving said stud, a stud projecting from said yoke, a link for operating the yoke slidable over the case plate and having a slot receiving both of said studs, and a leaf spring anchored on one of said studs between said yoke and link and having a slot receiving the other of said studs.

14. In a door latch, the combination with two sliding parts, of means between said parts operable to hold one of said parts against movement when the other of said parts is moved.

15. In a door latch, the combination with two overlapping sliding parts, of a flexible element between said parts operable to hold one of said parts against movement when the other of said parts is moved.

16. In a door latch, the combination with two sliding parts, of a flexible leaf spring between said parts and normally separating the same but operable to hold one of said parts against movement when the other of said parts is moved.

In testimony whereof I affix my signature.

CHARLES B. LOWE.