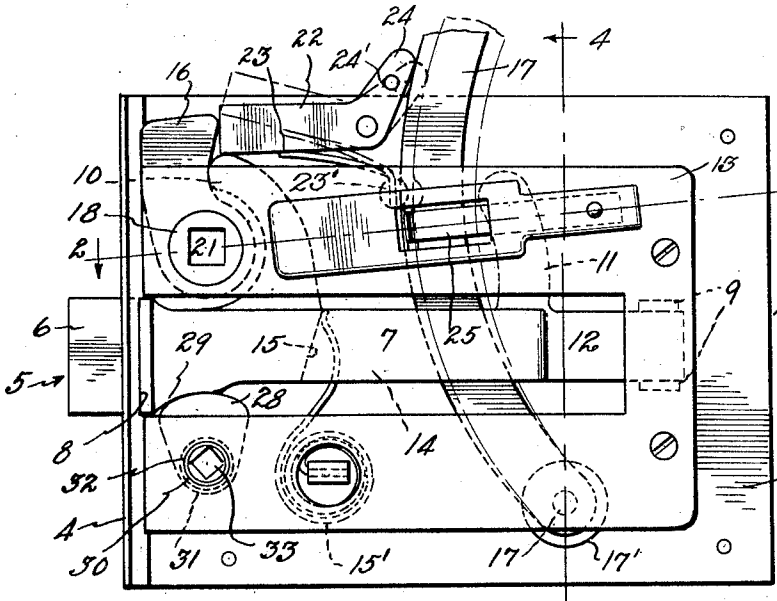
March 22, 1927. 1,621,497

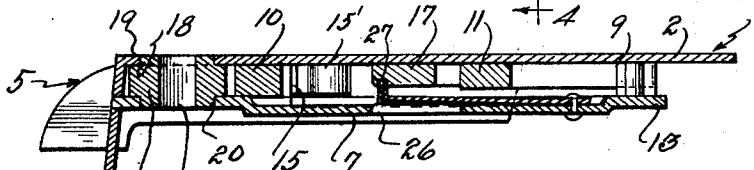
W. C. DEVEREAUX

DOOR LATCH

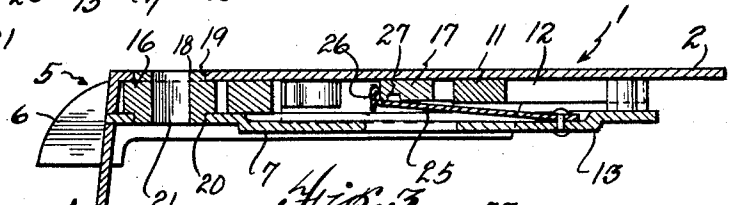
Filed April 6, 1925



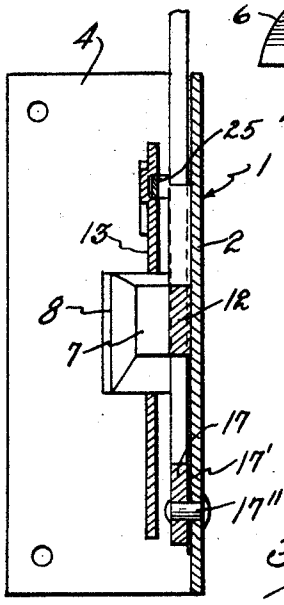
Hig. 1



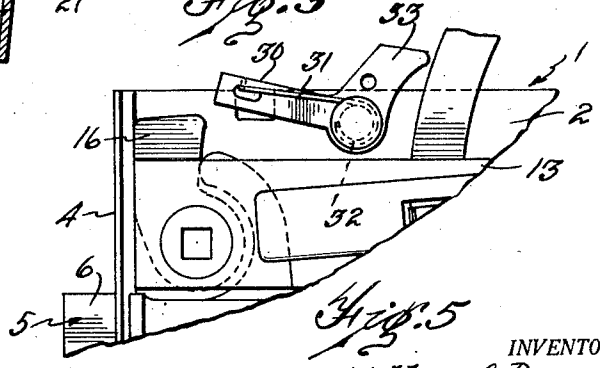
Hig. 2



Hig. 3



Hig. 4



Hig. 5

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UNITED STATES PATENT OFFICE.

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DOOR LATCH.

Application filed April 6, 1925. Serial No. 21,104.

This invention relates generally to door locks and latches and refers more particularly to those designed for use upon the doors of vehicle bodies.

One of the essential objects of the invention is to provide a latch in which a dog is adapted to be operated directly by one of the bolt retracting members for rendering the other retracting member inoperative and is adapted to be restored automatically to normal position by independent means carried preferably by the case plate.

Another object is to provide simple and effective means for retarding the forward movement of the lever when it is released in its rearward position after retracting the bolt to prevent the lever from springing or moving beyond neutral position to actuate the dog and thereby accidentally render the outside bolt retracting member inoperative.

With the above and other objects in view the invention consists in certain novel features of construction, combinations and arrangements of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing;

Figure 1 is a side elevation of a door latch embodying my invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a fragmentary elevation of a modification.

Heretofore, a pivotal dog has been employed for blocking the movement of the roll back. With some constructions this dog was moved into and out of operative dogging position by a suitable handle that operated independently of the bolt retracting means. With other constructions this dog was moved to operative position by an independent handle and returned to inoperative position by a projection on the bolt shank. Constructions have also been provided in which the dog has been connected by a link to one of the bolt retracting members whereby the dog was moved into or out of its operative dogging position by the movement of the bolt retracting member. However, in so far as applicant is aware, there is nothing in the prior art which shows a dog that is moved into operative dogging position by direct engagement with one of the bolt retracting members and is automatically returned to inoperative position by independent yieldable means anchored preferably on the case plate. An added feature of this construction is the provision of yieldable means for retarding the forward movement of the lever when it is released in its rearward position after retracting the bolt to prevent the lever from springing or moving beyond neutral position to actuate the dog and thereby accidentally render the outside bolt retracting member inoperative. Thus self-dogging of the outside operative member is obviated entirely in my construction.

Referring now to the drawings in which like characters of reference designate corresponding parts throughout the several views, the numeral 1 designates a lock embodying my invention having a case plate 2 that is preferably secured to the inner side of a door and is provided at one edge with a laterally extending flange 4 that is secured to the outer edge of the door. Slidably mounted on the case plate 2 is a bolt 5 preferably having an integral head 6 and shank 7. As shown, the head 6 preferably extends through a suitable opening 8 in the lateral flange 4 of the case plate and is adapted to engage a suitable keeper (not shown) upon the door jamb of a vehicle body, while the shank 7 preferably extends between spaced guide lugs 9 struck out from the case plate 2 and is provided at spaced points with upstanding forwardly curved projections or arms 10 and 11 respectively. The shank 7 of the bolt is also preferably provided at its inner end with a flat reduced portion 12 that extends behind a suitable cover plate 13 and is preferably provided adjacent to the reduced end portion 12 with a longitudinally extending slot 14. As shown, the forward wall 15 of this slot preferably serves as an abutment for the free end of a helical spring 15′ that is anchored upon the case plate 2 and that normally holds the bolt in projected position.

For retracting the bolt, I preferably provide a suitable roll back 16 that is adapted to be operated from the outside of the door, and a pivoted lever 17 that is adapted to

be operated from the inside of the door. As shown, the roll back 16 is engageable with the forward projection 10 of the bolt shank and is provided with a hub 18 that is journaled in aligned openings 19 and 20 respectively in the case plate 2 and cover plate 13, preferably immediately in rear of the lateral flange 4. Any suitable means (not shown) may be engaged with the square opening 21 in the hub 18 for rocking the roll back against the projection 10 to retract the bolt. The lever 17 is preferably pivoted at its lower end on the case plate 2 and extends upwardly through the slot 14 in the bolt shank 7. Any suitable handle (not shown) may be employed for moving the lever against the rear projection 11 of the shank 7 to retract the bolt. Thus, the lever 17 and roll back 16 may be independently operated against the tension of the spring 15 to retract the bolt.

In order that the outside operating means may be rendered inoperative from the inside of the vehicle I preferably provide a dog 22 that is pivoted on the case plate 2 between the roll back 16 and lever 17 so that it may be operated by the lever for preventing rearward movement of the roll back. As shown, this dog 22 is normally held out of the path of movement of the roll back by means of a suitable spring 23, carried by a stud 23′ on the case plate 2, and is provided at its rear end with an upstanding projection 24 that is adapted to be engaged by the forward edge of the lever 17. Any suitable means may be employed for limiting the upward swinging movement of the dog 22. As shown, a lug 24′ is pressed outwardly from the projection 24 and is engageable with the upper edge of the case plate 2. Thus, with this arrangement, when the lever 17 is moved forwardly beyond normal position, the dog 22 will be swung downwardly against the tension of the spring 23 and will be positioned immediately in rear of the roll back 16 so that the latter cannot be operated from the outside of the door to retract the bolt. For detachably holding the lever 17 in this forward position, I preferably provide a suitable leaf spring 25 that is anchored at its rear end upon the cover plate 13 and is provided at its forward end with a laterally projecting return bent portion or rib 26 that is engageable with a suitable depression 27 in the outer face of the lever 17 when the latter is in its forward position. When the dog 22 is in operative position behind the roll back 16 and the lever 17 is held by the spring 25 in its forward position, the lever may be readily operated from the inside of the vehicle to release the roll back 16 and retract the bolt by merely moving the lever to the rear so that the projection 26 of the spring 25 becomes disengaged from the depression 27, whereupon the spring 23 will automatically move the dog 22 upwardly out of the path of the roll back. This roll back may then be operated from the outside of the vehicle if desired, for retracting the bolt.

Normally the lever 17 will be held in upright position against the lateral projection 26 of the leaf spring by the upstanding projection 11 of the spring pressed bolt shank, thus any objectional play of the lever will be obviated. As shown in Figure 2 of the drawing, this spring 25 inclines from the cover plate 13 toward the case plate 2, hence the inclined outer face of the spring will frictionally engage the lever 17 so that its forward movement will be retarded. Moreover the lateral projection 26 of the spring will serve as a stop for limiting the return movement of the lever after it has been used to retract the bolt. Ordinarily the impetus of the lever is so great after being released that it would spring beyond neutral position and would actuate the dog, however with the present construction this difficulty has been obviated entirely and the dog may be actuated only by positively moving the lever forwardly by hand. As an added precaution against accidental forward movement of the lever 17 beyond neutral position, I preferably provide a spring metal washer 17′ that is initially cup-shape in form and that is mounted on the pivot 17′ between the lever 17 and case plate 2 so that it will press firmly against the lever and will retard the forward movement thereof when it is released. In fact the construction of this spring washer 17′ is such that it alone suffices to eliminate the possibility of inadvertently locking the roll back against operation.

If desired, a suitable cam 28 may be used for preventing the bolt from being retracted from either side of the door. As shown, this cam 28 is engageable with the depression 29 in the shank 7 of the bolt and has a hub 30 that is journaled in aligned openings 31 and 32 respectively in the case plate 2 and cover plate 13. This hub 30 may be operated by any suitable means but preferably has a square opening 33 therethrough for receiving a suitable key operated shank (not shown).

Thus, from the foregoing description, it will be readily apparent that the roll back 16 and lever 17 may be independently operated for retracting the bolt. Moreover, the dog 22 may be actuated by the inside lever 17 for rendering the roll back inoperative and may be held in operative position by the lever. It will also be apparent that the spring 23 cannot automatically move the dog 22 upwardly out of the path of the roll back until the inside lever 17 is moved rearwardly from its forward position. Thus, the in-

side lever 17 controls the movement of the dog to both operative and inoperative positions.

In Figure 5 I have shown a slight modification in which the dog 30 is normally held in raised position by means of a wire spring 31. As shown, this spring 31 is mounted upon the pivot 32 for the dog and has an arm 33 secured to the dog adjacent to its forward end.

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 a case plate, and a lever mounted thereon for swinging movement, of means on the case plate engageable with the lever for retarding the swinging movement thereof.

2. In a door latch, the combination with a case plate, and a lever mounted thereon for swinging movement, of a member on the case plate having a portion for retarding the movement of the lever and having another portion for limiting the movement of said lever in one direction.

3. In a door latch, the combination with a case plate, and a lever pivoted on the case plate for swinging movement, of a spring washer on the pivot of the lever for retarding the swinging movement of said lever.

4. In a door latch, the combination with a case plate, a cover plate, and a lever movable between said plates, of means projecting from one of said plates for retarding the movement of said lever.

5. In a door latch, the combination with a case plate, a cover plate, and a lever movable between said plates, of a member on one of said plates having a lateral projection for limiting the movement of said lever in one direction.

6. In a latch, the combination with a case plate, and a spring pressed bolt having a shank slidably mounted on the case plate, of a projection on the shank, a lever engageable with said projection for actuating said bolt, and yieldable means having a part in advance of the lever cooperating with said projection for holding said lever firmly in neutral upright position.

7. In a latch, the combination with a case plate, and a spring pressed bolt having a shank slidably mounted on the case plate, of a projection on the shank, a lever engageable with the projection for actuating said bolt, and a spring element adapted to retard the movement of said lever having a projection cooperating with the projection aforesaid for normally holding the lever firmly in neutral upright position.

8. In a door latch, the combination with a locking bolt, of a roll back for retracting the bolt, a dog for rendering the roll back inoperative, a lever movable away from the roll back to retract the bolt and movable toward the roll back to actuate the dog, and a yieldable member having a projection engageable with said lever when moved toward the roll back for holding the dog in operative dogging position.

9. In a latch, the combination with a case plate, a spring projected bolt carried thereby, and a rollback for retracting the bolt, of a dog for rendering the rollback inoperative, a second bolt retracting member for actuating the dog, a lug on the case plate constituting a stop for the bolt retracting member, and yieldable means carried by the lug normally retaining the dog inoperative.

10. In a latch, the combination with a latch bolt, and a retracting member therefor, of means for rendering said member inoperative including a second bolt retracting member mounted to swing from neutral position toward said first mentioned bolt retracting member, and a dog having a portion adapted to be engaged directly by said second bolt retracting member when swung toward said first retracting member and having another portion adapted to block the operative movement of said first retracting member when the said second mentioned member is moved from neutral position toward the said first bolt retracting member.

11. In a latch, the combination with a latch bolt, and a rollback for retracting said bolt, of means for rendering said rollback inoperative including a lever mounted to swing from neutral position toward said rollback, and a dog having an upstanding projection adapted to be engaged directly by said lever when swung toward said rollback and having another portion adapted to block the operative movement of said rollback when the lever is moved from neutral position toward the rollback.

In testimony whereof I affix my signature.

WILLIAM C. DEVEREAUX.