March 13, 1928. 1,662,450

C. G. ANDERSON

VEHICLE DOOR LATCH

Filed Oct. 8, 1925

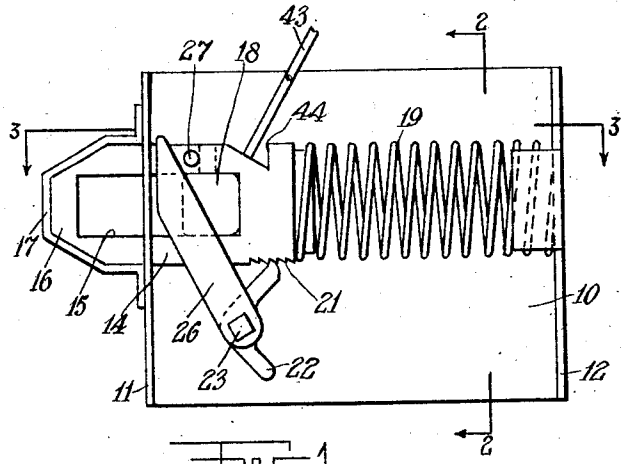


FIG. 1

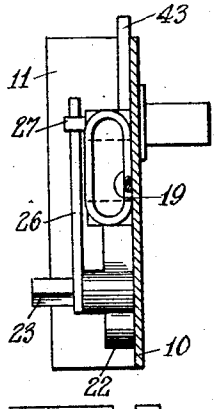


FIG. 2

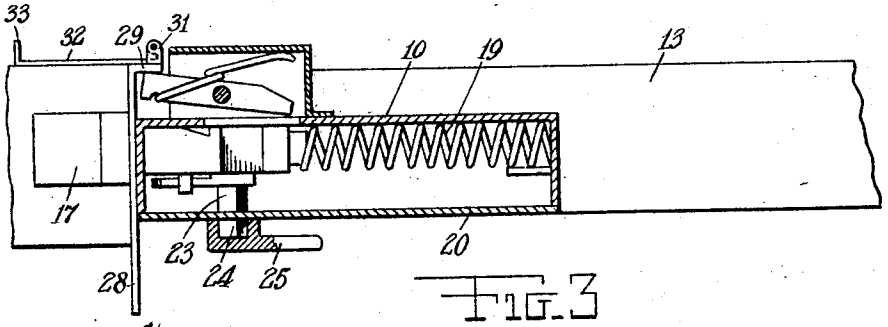


FIG. 3

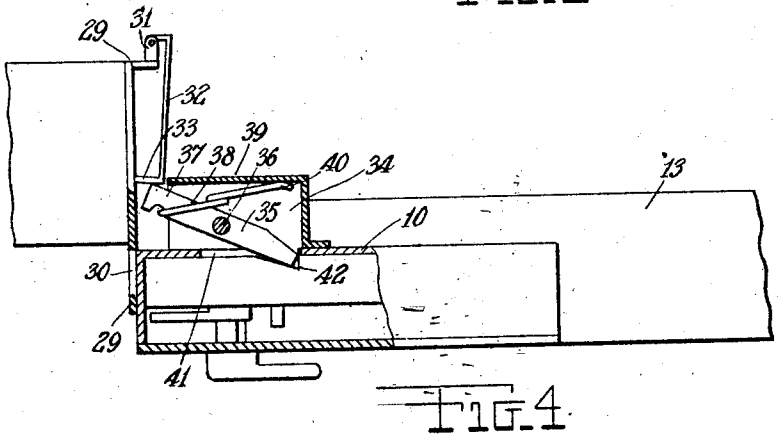


FIG. 4

INVENTOR
C.G.Anderson
BY J. Ledermann
ATTORNEY

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CLARENCE G. ANDERSON, OF LOS ANGELES, CALIFORNIA.

VEHICLE DOOR LATCH.

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The main object of this invention is to provide a latch having various novel characteristics attached thereto. One of the characteristics is the provision for securing the door to which the latch is attached in two positions, one position being that in which the door is completely closed and sealed in the jamb, the other position being that in which the door is partly opened.

Another object is to provide a latch which becomes effective in two positions, a completely closed position, and an open position, and means cooperating with the latch for releasing the sliding bolt of the latch so that the same may be retracted manually.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Referring briefly to the drawing, Figure 1 is a front elevational view of the latch, showing the cover plate removed therefrom.

Figure 2 is a sectional side elevational view of the same, taken on line 2—2 of Figure 1.

Figure 3 is a plan sectional view, taken on line 3—3 of Figure 1, showing the method of releasing the sliding bolt for manual retraction thereof.

Figure 4 is a view similar to Figure 3, showing the sliding bolt locking means in engaged position with said sliding bolt for preventing retraction of the latter.

Referring in detail to the drawing, the numeral 10 indicates the base plate upon which the entire latching means is mounted. This base plate has a front end wall 11 and a rear end wall 12 between which the cooperating members of the latch are arranged. The base plate is preferably mounted in a rectangular recess suitable for its reception formed on a door such as 13 on the inside surface thereof so that the lock may be operated from within a chamber. A sliding bolt 14 forms part of the latch mechanism and is provided with a rectangular channel 15 and a triangular nose 16 which when in locked position, extends beyond the front end wall 11 of the latch casing and is housed in a similarly shaped keeper 17. A square block 18 is mounted on the face of the base plate 10 and registers in the channel 15, forming a guide for the sliding bolt 14. Rearward of the sliding bolt, the coiled spring 19 is fixed or positioned between the rear end of the sliding bolt with which it contacts and the rear end wall 12. This coiled spring is preferably formed of a substantially rectangular shape so as to readily fit between the base 10 and the cover plate 20. At the bottom of the sliding bolt, near the rear end thereof adjacent to where the coiled spring 19 contacts with it, a plurality of teeth 21 are provided which are engaged by one end of an angular pawl 22, which angular pawl is mounted upon a rotatable square shank 23. Said square shank is rotatably mounted in the base plate 10, extends thruout the entire width of the latch casing, projects somewhat thru the cover plate 20, and the projecting end 24 has a lever handle 25 secured thereto by which means the pawl is manually rotated. An arm 26 is fixedly mounted on the portion 23 of the square shank and normally extends angularly upward when the sliding bolt is in advanced or extended position, being adapted to have its end extend in front of a mover pin 27 which is mounted on the side of the sliding bolt 14.

The keeper plate, into which the projecting end of the sliding bolt is adapted to be entered, consists of a flat plate 28, which is mounted upon the surface of the door jamb and has the housing 17 into which the projecting end of the bolt enters integral therewith. The keeper plate 28 extends for the thickness of the door, having on its external edge an off-set ledge 29, which ledge extends toward the door 13 and the end of the keeper plate opposite to this ledge extends beyond the surface of the jamb into the chamber of the room. This extending end 29 has an opening 30 therein which is of suitable dimensions to receive the nose 16 of the sliding bolt 14 when the latter is in aligned position therewith. A pair of ears 31 are mounted on the outer surface of the ledge 29, and between these ears, a stop lever 32 is pivotally mounted, said lever having an off-set extension 33 at its free end whose edge is adapted to contact with the surface of the keeper plate and form a shoulder for a sliding bolt releasing means, which latter will be more fully hereinafter described. The stop lever is pivotally mounted to permit the same to be moved into two positions, an inactive position, in which it assumes the lo-

cation shown in Figure 3, and an operative position, in which it assumes the location shown in Figure 4.

Means are provided for securing the sliding bolt in retracted position automatically as it is being retracted manually and comprises a hollow housing 34 mounted on the external side of the base plate 10. Within this housing, a square bar 35 is mounted which is pivoted intermediate its ends on a stud 36 fixed in the housing. One end 37 of this pivoted bar extends outwardly from the front open end of the housing 34, and around this extending end, a resilient member 38 is coiled angularly and twisted at a position over the square bar 35, then extending rearwardly in the housing, to the roof 39 with which it contacts, the ends of the resilient member being formed into a pair of legs 40. The far end of the pivoted bar 35 passes thru a recess 41 formed in the base plate 10 of the lock and is adapted to normally register in a triangular recess 42 on the sliding bolt when the latter is in retracted position.

The latch is operated from within the chamber and cannot be manipulated from without except thru the operation of a second lever bar 43 which is pivotally mounted on the base plate 10 and has its lower end registering in a triangular recess 44 formed in the sliding bolt 14, the pivoted lever being normally concealed in some convenient recess formed in the door 13. When the sliding bolt is to be retracted from the position it is shown in Figure 1, the handle lever 25 is rotated in a clockwise direction, thus moving the shank 23 and the lever 26 attached thereto. The lever in being rotated in a clockwise direction, engages the mover pin 27, and as this pin forms an integral part with the sliding bolt 14, the latter is retracted to the position shown in Figure 4. As the recess 42 formed on the sliding bolt becomes aligned with the rear end of the pivoted bar 35 when the sliding bolt is retracted, said rear end of the pivoted bar 35 is urged into the recess 42 by the flexibility of members 38 and the legs 40, which members lift the front end 37 of the pivoted bar and lower the rear end a corresponding distance, thus retaining the sliding bolt in retracted position, permitting opening or closing of the door as desired. In order to lock the door in partly opened position it is simply necessary to throw or swing the stop lever 32 into the position shown in Figure 4, in which the flange 32 lies and contacts with the keeper plate 29 at a position approximately half its width. As the door is being swung to its closed position on its hinges, the projecting end 37 of the pivoted bar 35 contacts with the flange 33 as the sliding bolt is normally aligned with the opening 30 in the keeper plate 29. Further pressure on the door 13 causes the end 37 of the pivoted bar to be moved toward the base plate 10, and as the sliding bolt becomes exactly aligned with the opening 30, the rear end of the pivoted bar 35 is completely removed from the recess 42 and permits said sliding bolt to be extended to its projecting position by the spring 19. In order to latch the door 13 in its closed position, in the jamb, the same movement of the sliding bolt is accomplished by having the end 37 of the pivoted bar engaged on the ledge 29, as illustrated in Figure 3.

I claim:—

1. A latch comprising a casing, a lever retracted sliding bolt, a keeper having a pair of aligned recesses adapted to alternately receive the sliding bolt when the latter is in extended position, said sliding bolt having a triangular recess on one side, a spring behind said sliding bolt yieldably extending the latter, a bar pivoted intermediate its ends on said latch, one end of said bar engageable in the recess of the sliding bolt to retain the latter in retracted position, a spring connected to said bar normally urging the latter into engagement in the recess of the sliding bolt, and means for tilting said bar out of engagement with the sliding bolt.

2. A latch comprising a casing, a lever retracted sliding bolt, a keeper having a pair of horizontally aligned recesses adapted to receive the sliding bolt when the latter is in extended position, said sliding bolt having a triangular recess on one side, a spring behind said sliding bolt yieldably extending the latter, a bar pivoted intermediate its ends on said latch, one end of said bar engageable in the recess of the sliding bolt to retain the latter in retracted position, a spring connected to said bar normally urging the latter into engagement in the recess of the sliding bolt, a ledge on said keeper adapted to engage one end of the tilted bar and rotate the latter out of engagement in the recess of the sliding bolt to release the latter for extension, and pivoted means on said ledge for limiting the rotation of said door to align the sliding bolt with one of the recesses in the keeper.

In testimony whereof I affix my signature.

CLARENCE G. ANDERSON.