L. A. SCHUMAKER.

AUTOMOBILE DOOR LATCH.

APPLICATION FILED NOV. 19, 1920.

1,393,911.

Patented Oct. 18, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

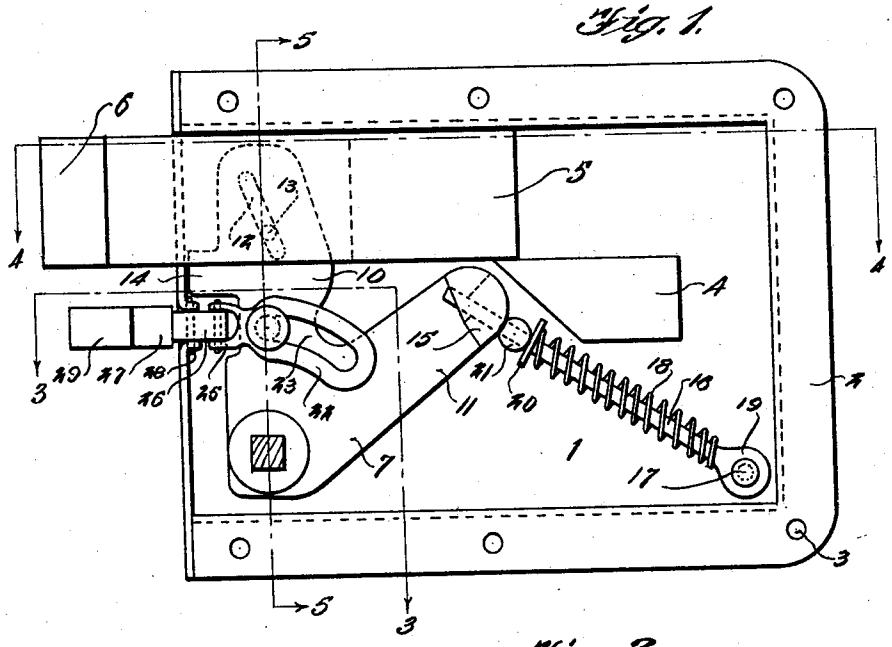
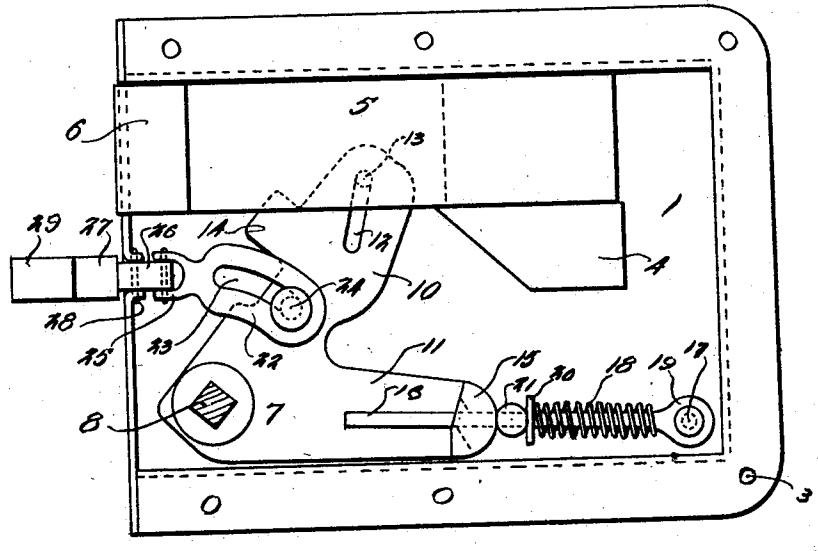


Fig. 2.



Inventor

WITNESSES.

LAWRENCE A. SCHUMAKER.

Leroy A. Kauffman.

Chas. A. Smith

By Richard B. Owen.

Attorney

L. A. SCHUMAKER.

AUTOMOBILE DOOR LATCH.

APPLICATION FILED NOV. 19, 1920.

1,393,911.

Patented Oct. 18, 1921.

2 SHEETS—SHEET 2.

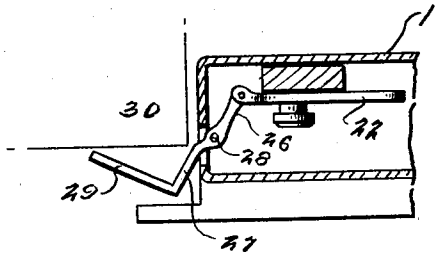


Fig. 3.

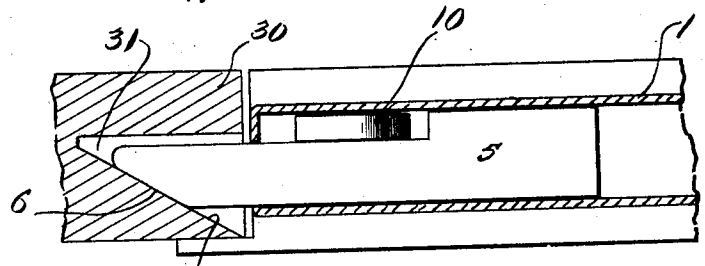


Fig. 4.

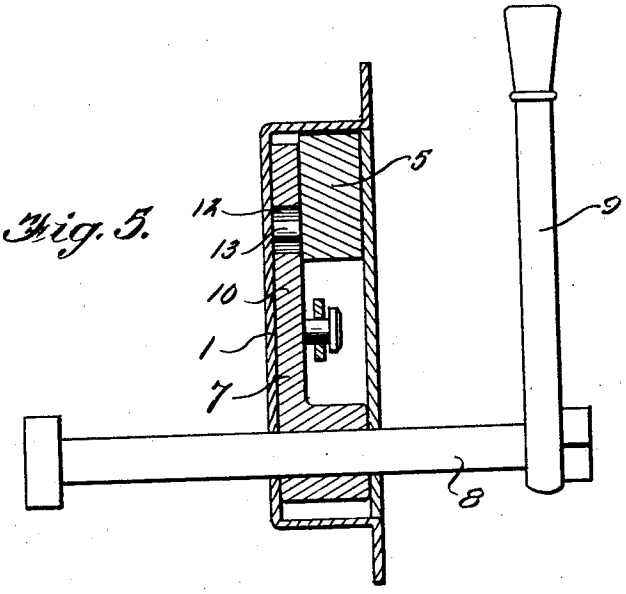


Fig. 5.

WITNESSES.

Leroy Q. Kauffman

Chas. E. Smith

Inventor

LAWRENCE A. SCHUMAKER.

By Richard B. Owen.

Attorney

UNITED STATES PATENT OFFICE.

LAWRENCE A. SCHUMAKER, OF MICHIGAN CITY, INDIANA.

AUTOMOBILE-DOOR LATCH.

1,393,911. Specification of Letters Patent. Patented Oct. 18, 1921.

Application filed November 19, 1920. Serial No. 425,149.

To all whom it may concern:

Be it known that I, LAWRENCE A. SCHUMAKER, a citizen of the United States, residing at Michigan City, in the county of Laporte and State of Indiana, have invented certain new and useful Improvements in an Automobile-Door Latch, of which the following is a specification.

This invention relates to an automobile door latch and has for its principal object to provide a device of this nature which may be used with automobile doors or doors of buildings or other structures and which is provided with means for holding the door rigidly in a closed position thus preventing rattling and at the same time keep out the wind and cold.

Another object of the invention is to provide a latch which does not require the slamming of the door to close it, the latch being provided with means for retaining the latch bolt in a retracted position until the door is in a closed position, means being provided for releasing the latch bolt as soon as the door is in its closed position.

A still further object of the invention is to generally improve upon latches of this character by providing a device which will be extremely simple, durable and inexpensive in construction, one which is efficient and reliable in operation, and well adapted to the purpose for which it is designed.

With these and numerous other objects in view, the invention resides in certain novel features of construction, and the combination and arrangement of parts as will be hereinafter fully described and claimed.

In the drawing:—

Figure 1 is a rear elevation of the latch casing showing the bolt latch in an extended position,

Fig. 2 is a rear elevation of the latch casing showing the latch bolt in a retracted position,

Fig. 3 is a section taken on the line 3—3 of Fig. 1 looking in the direction of the arrow,

Fig. 4 is a section taken on line 4—4 of Fig. 1 looking in the direction of the arrow, and

Fig. 5 is a section taken on the line 5—5 of Fig. 1 looking in the direction of the arrow.

Referring to the drawings in detail it will be seen that the numeral 1 designates a casing which may be of any preferred construction and as shown is substantially rectangular in cross section having the lateral flange 2 running around its outer periphery and provided with apertures 3 so that the casing may be securely attached to a door in the usual manner. A block 4 is fixedly situated in the casing toward the center thereof and forms a slide-way for the latch bolt 5 which has its locking end bent toward the rear thereof as shown at 6 and this beveled end 6 is adapted to extend beyond the casing as shown in Fig. 1 when the latch bolt is in a locked position.

A bell crank lever 7 is rigidly mounted on the cylindrical bar 8 which is rotatably mounted in the casing 1. The portion of the bar 8 which passes through the bell crank lever 7 is preferably square as indicated in Fig. 1 so that this bell crank lever 7 will be actuated upon movement of the bar 8. A suitable operating eye 9 is attached to one end of the bar 8 for rotating same. The bell crank lever 7 is formed with the arms 10 and 11. The arm 10 is disposed at an acute angle from the arm 11 and is provided with a slot 12 for receiving the pin 13 provided in the latch bolt 5. A stop extension 14 is also provided around this arm 10 and is adapted to abut the end of the casing 1 when the latch bolt 5 is in an extended position. The arm 11 of the bell crank lever 7 is provided with a shoulder 15 at its end and this shoulder 15 is provided with a slot for receiving the rod 16 which is pivotally carried in the casing by means of a pin 17. The sides of the slot in the shoulder 15 diverge from each other toward the end of the arm 11 and form stops for the movement of the rod 16 as will be later described. An expansion coil spring 18 is disposed around the bolt 16 so as to be between the eye 19 and washer 20. A roller 21 having a slot therein for receiving the rod 16 is disposed between the shoulder 15 and washer 20 and thus it will be seen that the round surface of this roller 21 will engage the rounded portion of the shoulder 15.

From the construction thus far described it will be seen that the spring 18 will normally hold the latch bolt 5 in a locked or extended position as shown in Fig. 1 of the drawing. The rod 16 is extending at an angle from the bottom of the casing 1. If the bell crank lever 7 is rotated so as to take

the position shown in Fig. 2 of the drawing this expansion coil spring 18 will hold the latch 5 in a retracted position since the bar 16 is extended substantially parallel with the bottom of the casing 1 and there will be no tendency of a part of the spring to rotate the bell crank lever 7 but to the contrary will push straight in alinement with the arm 11.

I have provided a tripping mechanism for the bell crank lever 7 which consists of a link 22 having a curved slot 23 therein for receiving the pin 24 provided on the arm 10 of the bell crank lever 7. One end of this link is used as shown at 25 and a pin extends through the ends of the yokes so as to pivotally support a trigger 26. This trigger 26 consists of a shank 27 which is suitably pivoted intermediate its ends to the casing 1 as is shown at 28 and is provided with a right angularly extending extension 29 which is adapted to abut the door jamb 30 thus pulling upon the link 22 and slightly rotating the bell crank lever efficiently to place the bar 16 at an angle to the bottom of the casing 1 and it will be seen that at this time the spring will push upon the arm 11 at an angle and thus cause the latch bolt 5 to take an extended position.

The bolt slot 31 provided in the door jamb 30 is beveled outwardly or toward the direction in which the door will swing as shown at 32. The beveled portion 6 of the latch bolt 5 will engage the beveled portion 32 and thus the spring 18 which will be pushing upon the latch bolt 5 through the intermediacy of the bell crank lever 7 will cause these two beveled surfaces to slide in relation to each other and since the bolt only may slide the door will necessarily close as far as possible thus preventing rattling and at the same time keeping out wind and cold.

Obviously, the invention is not limited and restricted to the precise, and exact details of construction as illustrated and described, because it is susceptible of a variety of embodiments, and many minor mechanical changes may be made in such preferred incorporation of the invention without departing from the substance or essence of the invention and without the sacrifice of any of its substantial benefits and advantages.

Having thus described my invention what I claim as new is:—

1. In combination, a casing, a latch bolt slidable therein, a bell crank lever pivoted therein, one arm of said bell crank lever provided with a slot, a pin on said bolt adapted to ride in said slot, the other end of said bell crank lever provided with a shoulder having a slot therein, a bar pivoted in the casing and having its end extending through the slot in said shoulder, and an expansion coil spring disposed on the rod for normally holding the latch bolt in an extended position through the intermediacy of the bell crank lever.

2. In combination, a casing, a latch bolt slidable therein, a bell crank rotatably mounted in the casing, one arm of the bell crank lever provided with a slot, a pin on the latch bolt adapted to ride in the slot, the other arm of the bell crank lever provided with a shoulder having a slot extended therethrough, a rod pivotally carried in the casing so that one end will extend through the slot in the shoulder, and a spring disposed on the rod so as to hold the latch in a retracted or extended position as described and a trigger mechanism for slightly moving the bell crank lever so as to shunt the latch bolt in an extended position.

3. In combination, a casing, a bolt slidable therein, a bell crank lever having one arm attached to the bolt for sliding same, means attached to the other arm of the bell crank lever for rotating same, and a trigger mechanism including a link having a curved slot therein, a pin on one arm of the bell crank lever adapted to ride in the slot of the link, a trigger pivotally mounted on the casing and having one end extending beyond the casing and the other end pivotally connected to the link for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

LAWRENCE A. SCHUMAKER.

Witnesses:

ARTHUR F. SCHUMAKER,

ALBERT F. PRELLWITZ.