April 22, 1930. J. B. FREYSINGER 1,755,352

AUTOMOBILE DOOR LATCH

Filed Aug. 6, 1926

Fig. 1.

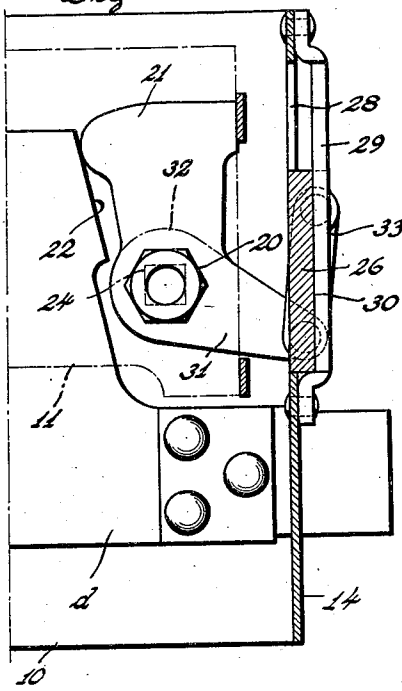


Fig. 2.

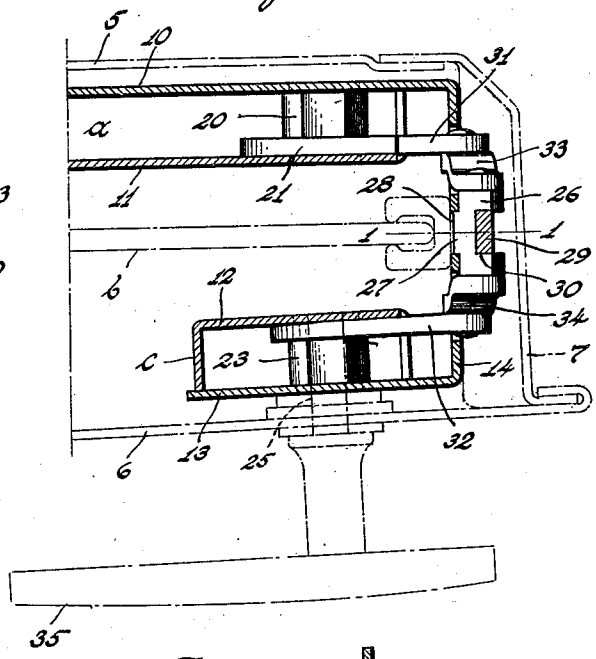


Fig. 3.

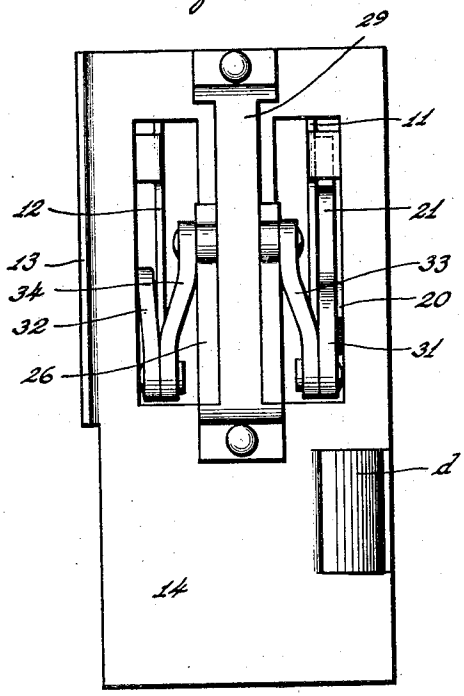
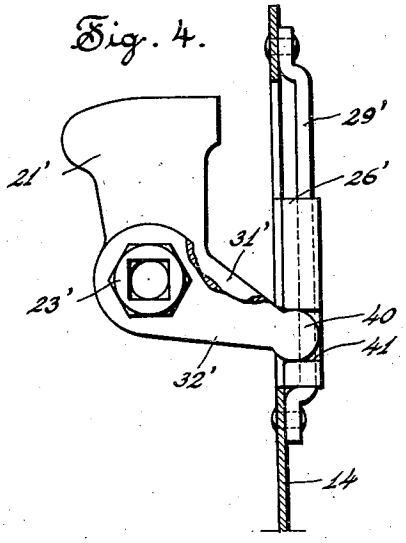


Fig. 4.



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UNITED STATES PATENT OFFICE

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AUTOMOBILE DOOR LATCH

Application filed August 6, 1926. Serial No. 127,665.

This invention relates to automobile door latches of the type having a latch or bolt adjacent one side of the door, for instance the inner side, and means on the other side, for instance the outer side, of the door for operating the bolt or latch, there being a clearance space between the bolt and the operating means therefor to accommodate the window glass.

The aim of the present invention is to provide a latch of this sort having various features of novelty and advantage.

More particularly, the aim of the invention is to provide a latch of this sort having an improved, simple and effective connection between the operating means to one side of the window space and the bolt to the opposite side of the window space.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the appended claims.

In the accompanying drawings, I have shown, by way of illustration, two of the many embodiments which the present invention may take. These embodiments are disclosed in their simplest form, parts of the latches being more or less diagrammatically illustrated and certain parts or adjuncts, which are old and well known, such, for instance, as the lever for operating the bolt from the inside of the door and key controlled mechanism for preventing actuation of the latch, being omitted. In said drawings:

Figure 1 is a vertical sectional view taken substantially on line 1—1 of Fig. 2;

Fig. 2 is a horizontal sectional view through the latch frame and shows my improved connection in top plan;

Fig. 3 is a view looking at the front of the latch; and

Fig. 4 is a view showing, more or less diagrammatically and in side elevation, another embodiment which the invention may take.

Referring to the drawings in detail, *a* designates a casing adapted to be connected to an automobile door to one side of the space provided for the window *b*, and *c* designates a support or casing located to the other side of the space provided for the window. The casing *a*, which may comprise the plates 10 and 11, may be secured to the inner panel 5 of the automobile door, and the casing *c*, which may comprise the spaced apart plates 12 and 13, may be secured to, or placed adjacent, the outer panel 6 of the door. The frame of the casing may be completed by a front plate 14 which is adapted to be secured to the rail 7 of the door. This plate 14 may be formed separately of the casings *a* and *c* and detachably secured thereto, but, preferably, this plate is formed integrally with the plates 10 and 13. Slidably mounted in the casing *a* is a bolt *d* which may be of any approved or desired construction, only a portion of the bolt being shown in the drawings, as the particular shape thereof and the manner in which it is supported form no part of the present invention.

Journalled in the side plates of the casing *a* is a bushing or hub 20 to which is fixed, as by means of a driving fit, a roll-back 21. This roll-back is adapted to engage the edge 22 of the bolt to retract the latter when the roll-back is rotated counterclockwise, referring to Fig. 1. Journalled in the casing *c* on an axis coincident with that of the hub 20 is a hub or bushing 23 having a squared opening 24 as shown by broken lines in Fig. 1, which is adapted to receive the squared end of an operating spindle 25 extending through the outer panel 6 of the door, the outer end of the

operating spindle being rigidly connected to the grip or handle 35. Slidably mounted on the front plate 14 is a slide which may be of any suitable construction. In the embodiment shown in Figs. 1, 2 and 3, this slide is designated by the numeral 26 and has, on its rear face, a tongue 27 which rides in a vertical slot 28 in the front plate. 29 designates a guide secured at its opposite ends to the front plate. This guide engages in a vertical groove 30 in the front face of the slide. It will be noted that the slide is thus supported for vertical movement only. The slide may be operatively connected to the operating spindle 25 on the one hand and to the roll-back 21 on the other hand in various ways, but by way of illustration, I have shown link arrangements. Secured to, or formed integrally with, the roll-back 21 is a forwardly extending arm 31 which extends through an opening in the front plate 14. Carried by the bushing 23 is a similar arm 32. Between the arm 31 and the slide is a link 33, and between the forward end of the arm 32 and the opposite side of the slide is a like link 34. By preference, the pivotal connections between the arms and the links are substantially in the plane of movement of the slide so that maximum leverage may be obtained.

It will be clear, of course, that, when the operating spindle 25 is rotated in the proper direction, the arm 32 will raise the slide 26, and this movement of the slide will, through the link 33 and the arm 31, throw the roll-back to the left, referring to Fig. 1, and thereby retract the bolt. When the operating lever is released, a suitable spring, not shown, may return the parts to the positions illustrated in the drawings. It will be noted that with my improved construction the space for the window is left free, the window guide may come up close to the selvage or the front plate 14, and the turning movement of the operating spindle is transmitted to the roll-back in a very effective and simple manner.

Referring now to the embodiment shown in Fig. 4, the slide 26′ may be mounted for vertical sliding movement on the front plate 14′ in any suitable manner but, by way of illustration, I have shown it as supported in the same manner as is the slide of the preceding embodiment. The roll-back 21′ may be journalled in the inner casing, and the bushing 23′ may be journalled in the outer casing in the same manner as in the preceding embodiment. Fixed to the bushing 23′ is an arm 32′ which has, at its outer end, a circular portion 40 which fits in a horizontal groove 41 in one side face of the slide. The roll-back 21′ has an arm 31′ which is identical to the arm 32′ and transversely alined therewith. The forward end of the arm 31′ has a portion identical to the portion 40 and is adapted to engage in a groove similar to the groove 41 but on the opposite side of the slide. It will be clear that rotary movement of the bushing 23′ is transmitted through the arm 32′, the slide 26′ and the arm 31′ to the roll-back. When the arms are turned the circular ends thereof will ride in the grooves 41.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim as my invention:

1. A latch of the character described having a pair of supports with a free space between them adapted to accommodate a window and a front plate at the forward end of said supports, a bolt carried by one of said supports, operating means in the other of said supports, a slide mounted for vertical movement on the outer face of said front plate, means for slidably retaining said slide on the outer face of said front plate, an operative connection between said bolt and slide, and an operative connection between said operating means and slide.

2. A latch of the character described having a pair of spaced apart supports with a free space between them adapted to accommodate a window, a bolt carried by one of said supports, operating means in the other of said supports, a slide mounted forwardly of said free space for sliding movement, an operative connection between said bolt and slide and including a member pivoted in that support carrying said bolt, and an operative connection between said operating means and slide and including a member pivoted in the other support, said pivoted members being pivoted substantially on the same axis and to opposite sides of said free space.

3. A latch of the character described having a pair of spaced apart supports and a front plate, a slide mounted for vertical movement on said front plate, a bolt mounted in one of said supports, a roll-back journalled in said support and having a forwardly extending arm, an operating spindle in the other of said supports, a forwardly extending arm on said spindle and alined with said first mentioned arm, and a link between each of said arms and said slide, said roll-back and spindle being journalled on axes substantially in alignment with one another.

4. A latch of the character described having a pair of supports with a free space be-

tween them adapted to accommodate a window, and a front plate at the forward end of said supports, said front plate having a slot, a bolt carried by one of said supports, operating means on the other of said supports, a slide mounted for vertical movement on the outer face of said front plate and provided with a groove, a guide secured to said front plate forwardly of said slot and engaging in said groove, said slide having a tongue engaging in said slot, an operative connection between said bolt and slide, and an operative connection between said operating means and slide.

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