Aug. 22, 1933. H. W. RIGHTMYER 1,923,688

DOORLATCH

Filed Sept. 20, 1932

Fig. 1

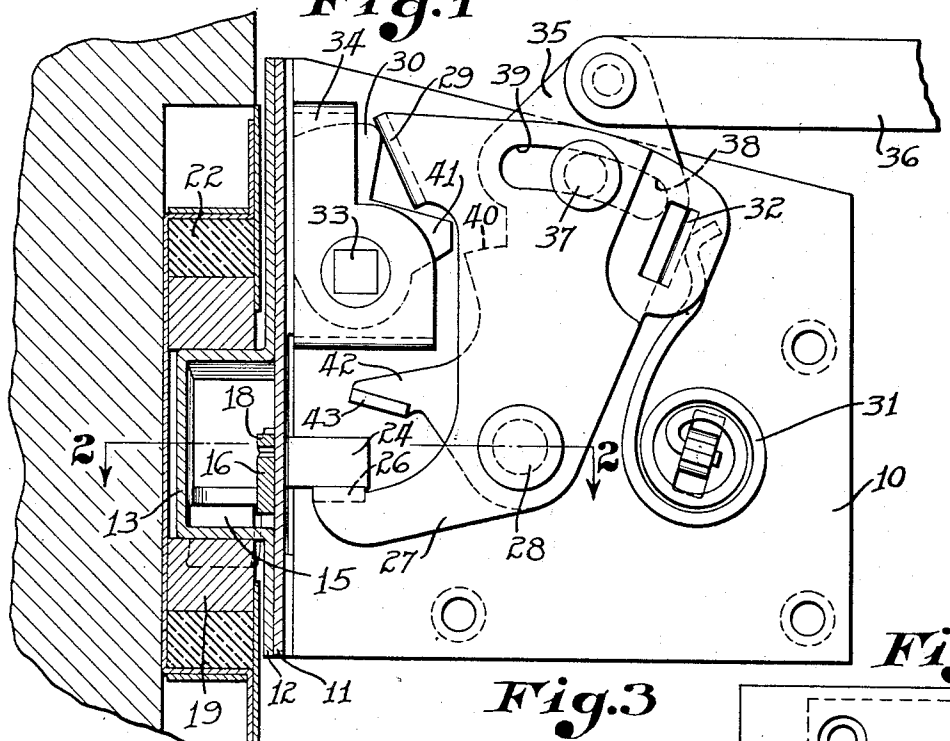


Fig. 2

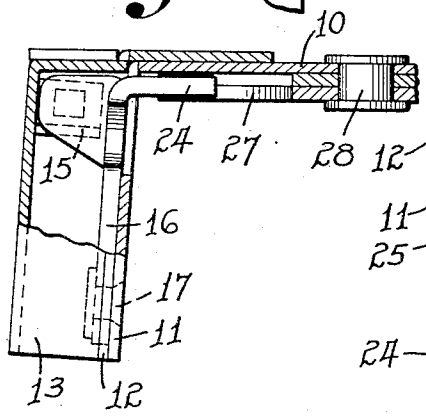


Fig. 3

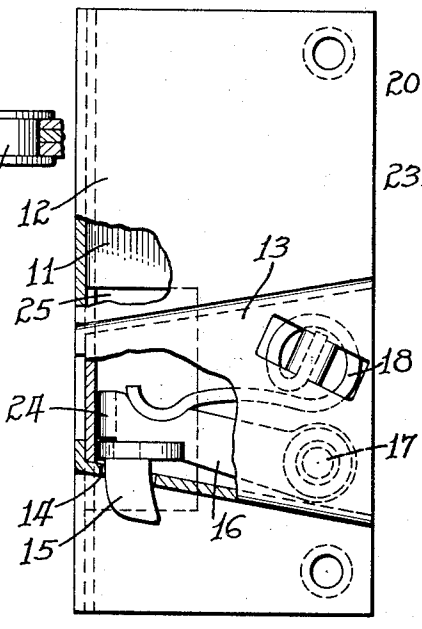
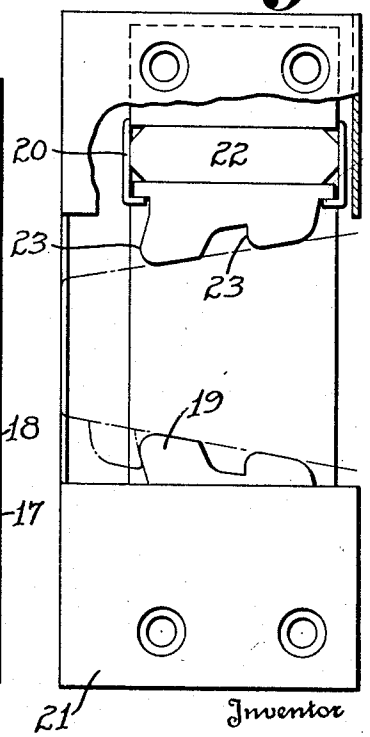


Fig. 4



Inventor

Holden W. Rightmyer

By Owen & Owen

Attorneys

Patented Aug. 22, 1933 1,923,688

UNITED STATES PATENT OFFICE

1,923,688

DOORLATCH

Holden W. Rightmyer, Toledo, Ohio, assignor to The American Swiss Company, Toledo, Ohio, a Corporation of Ohio

Application September 20, 1932
Serial No. 634,021

6 Claims. (Cl. 292—223)

This invention relates to door latches, but more particularly to a combination dove tail and latch for vehicle body doors, in which cooperating wedge elements are employed constituting the dove tail, and latching members are combined with the wedging elements for retaining the door in closed position.

An object of this invention is to provide a new and improved device comprising a combination dove tail and door latch, which is adapted for practical installation on automobile bodies.

Another object is to produce a door latch having the new and improved features of construction and arrangement hereinafter described.

An embodiment of the invention is shown for purposes of illustration, but not of limitation, on the accompanying drawing, in which:

Figure 1 is a side elevation partly in section of a combined dove tail and door latch showing the parts in latched position;

Figure 2 is a transverse sectional view on the line 2—2 of Figure 1;

Figure 3 is an end view of the face plate with some of the parts broken away to show the latching elements; and

Figure 4 is an elevation partly in section of the dove tail member attached to the door frame or jamb.

In the illustrated embodiment of the invention, the combined dove tail and latching device comprises a back plate 10 having an integral face plate 11 at one end, which extends outwardly at an angle to the back plate. Suitably secured to the face plate 11 is a plate 12 having an integral hollow wedging element 13. An opening 14 is formed in the lower wall of the wedging element 13 adjacent the smaller end thereof, and projecting through this opening is a latching dog 15, which is secured to the outer end of an arm 16 disposed within the hollow wedging element 13. The inner end of the arm 16 is pivoted at 17, and a spiral spring 18 likewise disposed within the wedging element engages the arm 16 for urging the latching dog 15 to latching position.

When the door is closed the wedging element 13 is disposed between metal blocks 19, which are slidable in housings 20 carried by a mounting plate 21. In rear of each metal block 19 is a rubber block 22, which are preferably under compression, and urge the blocks 19 toward each other. The faces of the blocks 19 are inclined to correspond to the slope or taper of the opposite side walls of the wedging element 13. Each of the metal blocks 19 is provided with a pair of shoulders 23. When the door is closed one of the inner shoulders 23 is engaged or caught by the latching dog 15, the inner shoulder 23 providing an additional latching abutment adapted to be engaged by the latching dog. It will be understood that the blocks 20 are similarly constructed for production purposes.

Fixed to the arm 16 of the latching dog adjacent the head 15 thereof is an extension 24, which extends through a vertically elongate opening 25 in the face plate 11. As shown in Figure 1, the extension 24 projects inwardly beyond the inner side of the face plate 11, and the underside thereof is engageable by a flange 26 on a plate 27, which is pivotally mounted on a pin 28 on the back plate 10. The plate 27 extends upwardly, and is provided with a flange 29 at the upper portion thereof, which is held in engagement with a roll back arm 30 by a spiral spring 31. The free end of the spring 31 engages a lug 32 projecting inwardly from the plate 27.

The roll back arm 30 is provided with a squared opening 33 to receive the shank of a door handle disposed on the outside of the door. A cover plate 34 fits over the roll back 30, and cooperates with the back plate 10 providing a pivotal mounting therefor. From the above description it is apparent that by swinging the roll back 30 to the right of Figure 1, the plate 27 is rocked in a clockwise direction about its pivot 28, thereby to raise the latching dog 15 through the extension 24 and arm 16 to release the wedging element 13 from the wedge blocks. Upon release of the outside door handle the spring 31 returns the roll back 30 to normal position, and the spring 18 returns the latching dog 15 to latching position.

In order to retract the latching dog 15 from the inside of the door, an arm 35 is pivotally mounted on the pin 28 beneath the plate arm 27 and projects slightly beyond the upper edge of the back plate 10. Pivoted to the upper end of an arm 27 is a link 36, the opposite end of which is connected to a remote control operating unit (not shown) of any suitable or desired construction well known to those skilled in this art. The upper portion of the arm 35 engages the front face of the lug 32 so that by imparting a clockwise movement to the arm 35 by pulling on the link 36, the latching dog 15 is retracted through the arm 27 and parts above described.

Both the plates 27 and 35 are guided in their swinging movements by a single rivet 37 mounted on the back plate 10 and extending through curved elongate slots 38 in the arm 35 and 39

in the arm 27. The slot 39 is preferably about one-half the length of the slot 38, since the arm 35 is moved in non-bolt retracting direction in order to dog or render inoperative the outside operated roll back 30. For this purpose the plate 35 is provided with a shoulder 40 in the front edge thereof, which is adapted to be moved directly beneath a lug 41. The lug 41 is movable with the roll back arm 30 and disposed at substantially right angles thereto. It is manifest that when the arm 35 is moved to the left of Figure 1 the shoulder 40 is moved directly beneath the lug 41, thereby blocking clockwise or bolt retracting movement of the roll back 30.

Provision is made for automatically moving the arm 35 out of roll back dogging position when the door is slammed. For this purpose an extension 42 is formed on the lower end portion of the arm 35, and projecting laterally from the extension is a flange 43, which is adapted to be moved into or substantially into contact with the latching extension 24 when the arm is in roll back dogging position. When the door is slammed the latching dog 15 is retracted during its movement over the wedge blocks 19 before snapping into latching position. This retracting movement is imparted to the extension 24 causing the latter to move upwardly and through the flange 43 rock the arm 35 in a clockwise direction (Figure 1) to move the shoulder 40 away from the lug 41, and in this manner release the outside operated roll back.

From the above description, and taken in connection with the drawing, it will be manifest that a commercially practicable construction is produced which can be made to a large extent from metal stampings, and, owing to its simplicity and compactness of arrangement, the construction can be inexpensively and efficiently produced. The parts are so designed that they may be readily and conveniently assembled with a minimum of labor and expense.

It is to be understood that the above is given merely by way of illustration, and not of limitation, and numerous changes in details of construction, arrangement and operation may be effected without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent is:

1. A door latch comprising a latching element, a spring-tensioned retracting arm, an inside-operated actuating lever engageable with said arm, said arm and lever being arranged one over the other, a common pivot for said members, means for operating said actuating lever, an extension on said arm, an outside operated roll back engageable with said extension for retracting said latching element, and cooperating abutments on said roll back and arm respectively for blocking movement of said roll back when said arm is rocked in a reverse direction.

2. A door latch comprising a latching element, a spring-tensioned retracting arm, an inside-operated actuating lever engageable with said arm, a common pivot for said arm and lever, means for actuating said lever, an extension on said arm, an outside operated roll back engageable with said extension for retracting said latching element, cooperating abutments on said roll back and arm respectively for blocking movement of said roll back when said arm is rocked in a reverse direction, and another extension on said lever movable into the path of movement of said latching element whereby said element moves said lever out of roll back blocking position when the door is slammed.

3. A door latch comprising a latching element, a spring-tensioned retracting arm, an inside-operated actuating lever engageable with said arm, said arm and lever being arranged one over the other, a common pivot for said members, means common to said arm and lever for guiding the rocking movements thereof, means for operating said actuating lever, an extension on said arm, an outside operated roll back engageable with said extension for retracting said latching element, and cooperating abutments on said roll back and arm respectively for blocking movement of said roll back when said arm is rocked in a reverse direction.

4. A door latch comprising a latching element, a spring-tensioned retracting arm, an inside-operated actuating lever engageable with said arm and movable to retract said latching element, a common pivot for said arm and lever, means for actuating said lever, an extension on said arm, registering slots in said arm and lever, a stationary pin in said slots, the slot in said lever being longer than the slot in said arm to afford reverse movement of said lever, and cooperating abutments on said roll back and lever respectively thereby to block movement of said roll back upon said reverse movement.

5. A door latch comprising a latching element, a spring-tensioned retracting arm, an inside-operated actuating lever engageable with said arm and movable to retract said latching element, a common pivot for said arm and lever, means for actuating said lever, an extension on said arm, registering slots in said arm and lever, a stationary pin in said slots, the slot in said lever being longer than the slot in said arm to afford reverse movement of said lever, cooperating abutments on said roll back and lever respectively thereby to block movement of said roll back upon said reverse movement, and an extension on said lever movable into the path of movement of said latching element thereby to move said lever out of blocking position when the door is slammed.

6. In a device of the class described, the combination of a housing having a wedge-shaped projection, a movable latching member in said housing having a part extensible therethrough, outside operated means for actuating said latching member and including a retracting arm operatively engageable with said member, inside-operated means for actuating said latching member and including an actuating lever operatively engageable with said arm and movable to actuate said member through said arm, a common pivot for said arm and lever, and an abutment on said actuating lever movable into engagement with said outside-operated means for rendering the latter inoperative upon movement of said inside-operated means in non-bolt retracting direction.

HOLDEN W. RIGHTMYER.