W. H. KROLL.

COMBINATION HINGE AND CATCH FOR AUTOMOBILE DOORS.

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1,383,548.

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Fig. 1.

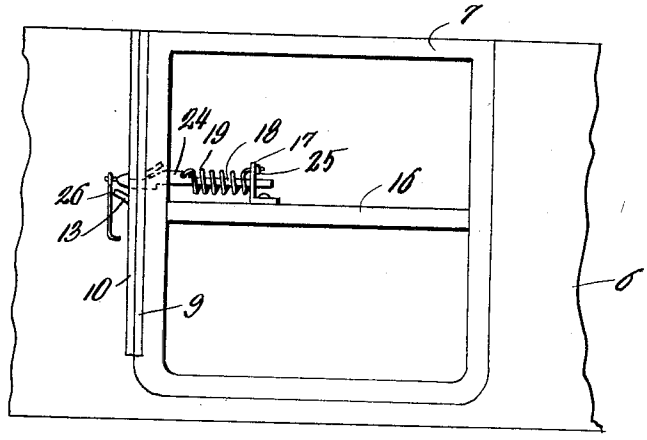


Fig. 2.

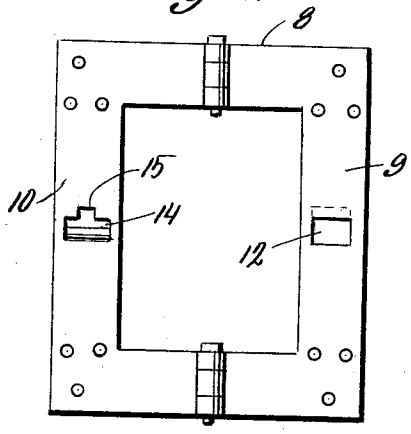


Fig. 3.

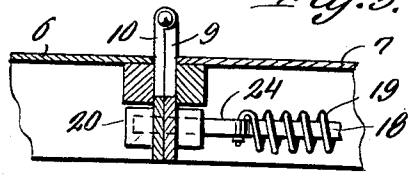


Fig. 4.

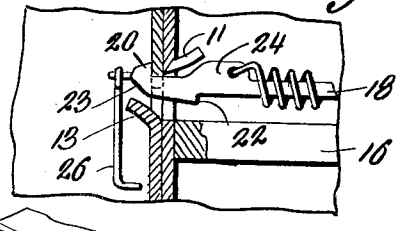
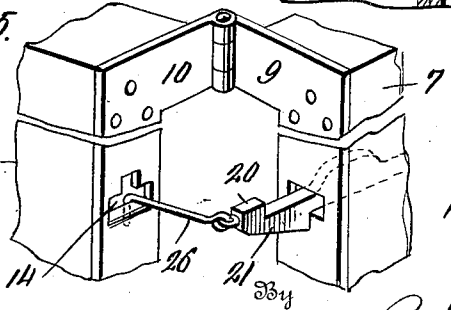


Fig. 5.



WITNESSES

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COMBINATION HINGE AND CATCH FOR AUTOMOBILE-DOORS.

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To all whom it may concern:

Be it known that I, WILLIAM H. KROLL, a citizen of the United States, residing at De Pere, in the county of Brown and State of Wisconsin, have invented certain new and useful Improvements in Combination Hinges and Catches for Automobile-Doors, of which the following is a specification.

This invention relates to a combination hinge and catch for automobile doors, and is designed primarily to eliminate the necessity of slamming the doors of an automobile in order to insure closing of the same.

A further object of the invention is to provide a catch coöperable with the door hinge to automatically close the door after the latter has passed through a certain partial movement, likewise permitting opening of the door merely by the exertion of pressure thereon, completely eliminating the use of door handles, levers, etc.

The above and other objects of the invention will be in part described and in part understood from the following description of the present preferred embodiment of the invention taken in connection with the accompanying drawings, wherein:

Figure 1, is a side elevational view of a device constructed in accordance with this invention illustrating its application on a vehicle door, a portion of the inside of the vehicle being shown.

Fig. 2, is an elevational view of a hinge constructed in accordance with this invention.

Fig. 3, is a fragmentary horizontal sectional view showing a top plan view of the latch member used in this invention and its manner of connection to a door hinge.

Fig. 4, is a detail fragmentary side elevational view of the device illustrating its application on a door and door frame, a portion of the latter being shown in section, and

Fig. 5, is a detail fragmentary perspective view of the device illustrating its application and showing the door in an open position.

In order to illustrate the application of this invention, a portion of a vehicle 6 is shown in which is mounted the skeleton of a door 7.

The door is hinged to the vehicle by a hinge 8, one side 9 of which is attached to the inner margin of the door, while the opposite side 10 is attached to the door frame. The sides 9 and 10 are pivotally connected by pintles in a manner well known in the art. The side 9 has an arcuate lip 11 struck upwardly therefrom, so as to provide an abutment, likewise providing a substantially rectangular opening 12. The side 10 has a portion thereof struck out and rolled over, as indicated at 13, to provide a deflector, likewise providing an opening 14 with which a squared recess 15 communicates. The opening 14 is arranged diametrically opposite to the opening 12, so that the said openings will register when the sides of the hinge are brought in contact as illustrated to advantage in Fig. 4.

The door skeleton has a brace 16 mounted therein, upon which a right angled bearing plate 17 is mounted. The bearing plate receives one end of a latch bar 18 which is preferably circular in configuration and has a coil spring 19 convoluted thereon. The opposite end of said bar has a squared lug 20 upstanding from its upper margin. An inclined enlargement 21 is formed on the lower margin of the latch bar, one end of which terminates in an abrupt shoulder 22, while the opposite end issues into an oblique face 23 as shown to advantage in Fig. 4. The upper margin of said bar, remote from said lug 20 is enlarged to provide a trip 24 which is engaged by one end of the spring 19. The opposite end of said spring extends through the bearing 17 and is threaded to receive a nut 25 which permits adjustment of the tension of the spring when desired.

When the door is in an open position the latch bar 18 will be in the position shown in Fig. 5 of the drawings, in which position the shoulder 22 is in engagement with the side 9 of the hinge and is held in this position by the contractile action of the spring 19. The opening movement of the door is limited by a hasp fastener 26, one end of which is connected to the outer terminal of the latch bar by an eye-bolt, the opposite terminal being engageable with the deflector 13.

When the door is moved into a closing position, the lug 20 of the latch bar will pass through the recess 14 and the body of the bar pass through the opening 14 of the hinge. When going through this phase of movement the latch bar is raised upwardly in view of the inclined enlargement 21 with its oblique face 23 by contact with the deflector 13. After the latch bar has been elevated to a position where the shoulder 22

clears the lower margin of the hinge opening 12, the contractile action of the spring will exert a pressure upon the latch bar 18 so as to bring the lug 20 into contact with the inner face of the side 10 of the hinge, as shown in Fig. 3 of the drawings. In this way the door when it is perhaps still two or three inches opened, will be automatically operated into a completely closed position by the spring 19 and will be held in a closed position by the latter, which will also act to prevent rattling of the door during movement of the vehicle. The door may be opened by exerting pressure thereon, which action moves the door entirely independently of the latch bar until the abutment 11 comes in contact with the abutment 24, the latter causing the bar to be moved downwardly so as to disengage the lug 20, thereby permitting the latch bar to be retracted through the openings 14 and 12 until the bar reaches the position shown in Fig. 4.

Various changes may be made in this device within the scope of the appended claims.

What is claimed is:

1. A combined door hinge and catch including a yielding latch bar mounted in the door and engageable with the door frame to automatically operate the door into a closed position.

2. A combined door hinge and catch including a yielding latch bar mounted in the door and engageable with the door frame to automatically operate the door into a closed position, pressure on said door automatically disengaging the latch bar and permitting the door to be opened.

3. The same as claim 2, change the period to a comma and add—and means carried by said latch bar and automatically operable to limit the movement of said door.

4. A combined door hinge and catch including a hinge, one side of which is engaged with the door and the opposite side engaged with the door frame, a latch bar mounted in said door and engageable with the side of the hinge on the door frame, means mounted upon said latch bar to automatically project the latter into the door frame upon contact of the latch bar with the hinge on said frame, whereby said door is automatically closed after having been operated through a predetermined movement.

5. A combined door hinge and catch including a hinge, one side of which is engaged with the door and the opposite side engaged with the door frame, a latch bar mounted in said door and engageable with the side of the hinge on the door frame to hold the door closed, opening movement of said door automatically disengaging said latch bar substantially as described.

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

WILLIAM H. KROLL.

Witnesses:
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