

April 7, 1925.

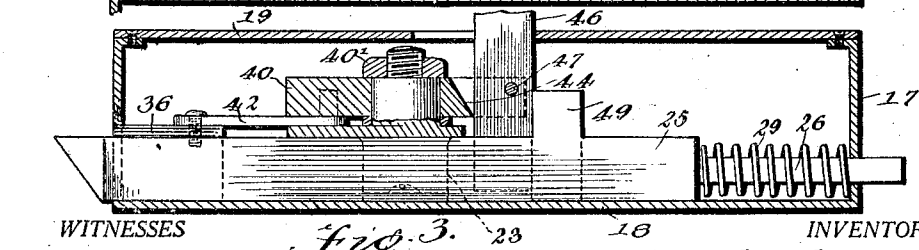
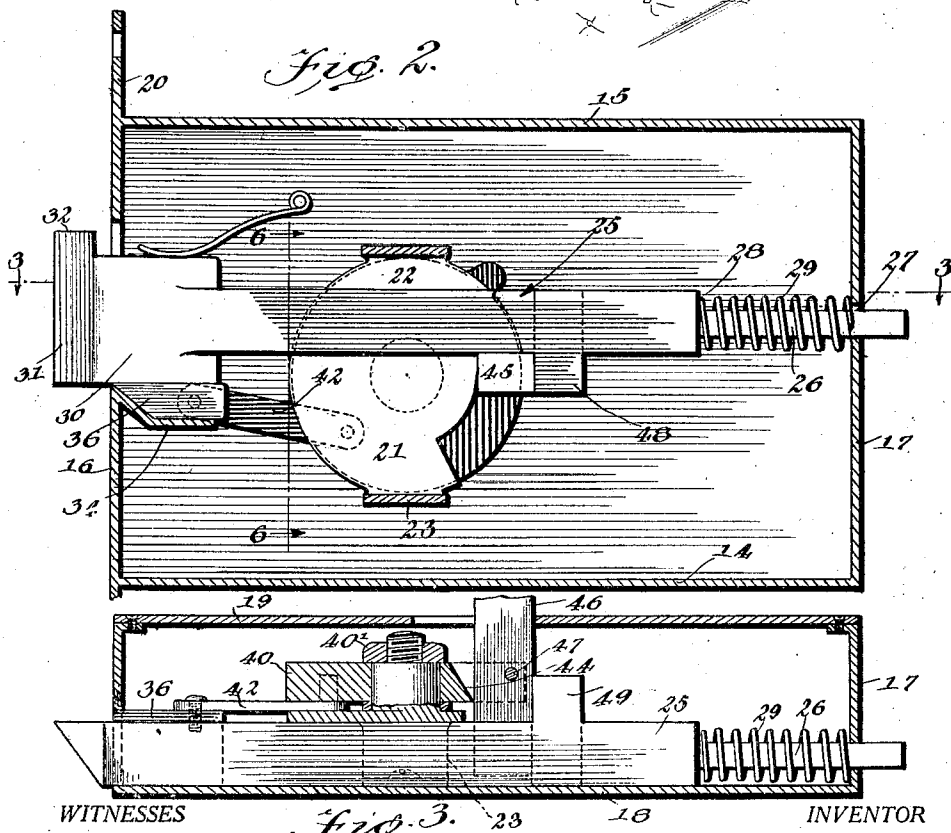
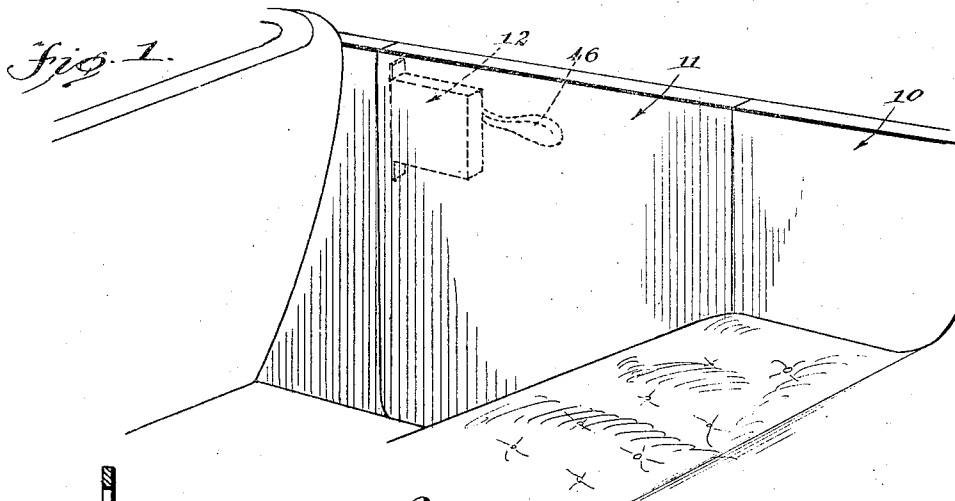
1,532,322

J. H. LANE

DOOR CATCH

Filed June 2, 1923

2 Sheets-Sheet 1



WITNESSES

INVENTOR

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J. H. Lane,

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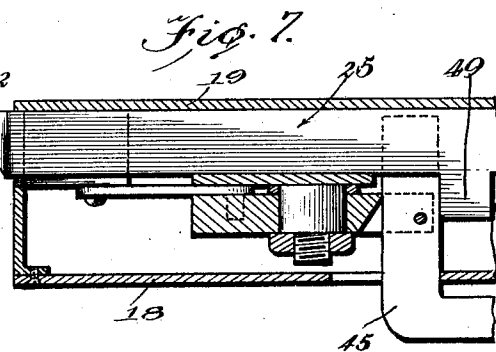
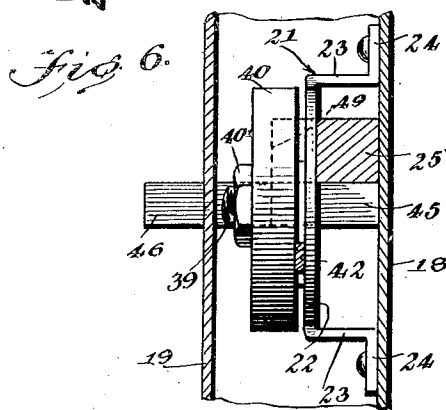
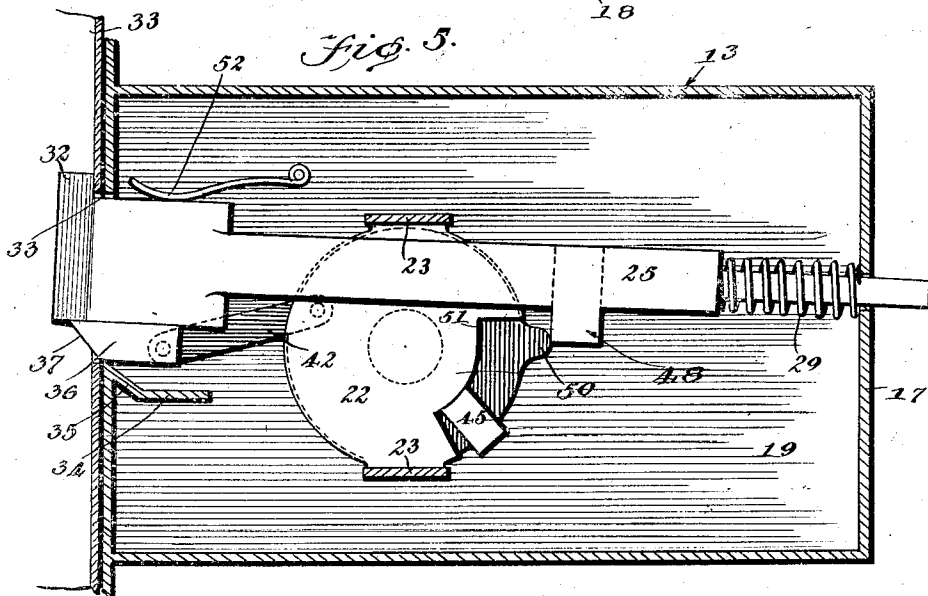
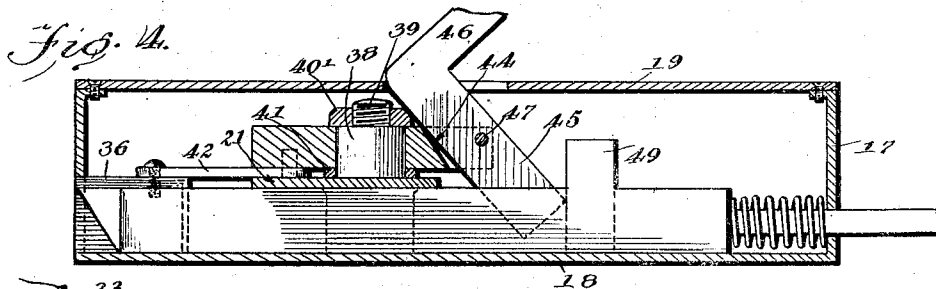
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J. H. LANE

DOOR CATCH

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2 Sheets-Sheet 2



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES HENRY LANE, OF RICHFIELD, IDAHO.

DOOR CATCH.

Application filed June 2, 1923. Serial No. 643,060.

To all whom it may concern:

Be it known that I, JAMES H. LANE, a citizen of the United States, residing at Richfield, in the county of Lincoln, State of Idaho, have invented certain new and useful Improvements in Door Catches, of which the following is a specification.

This invention relates to improvements in door catches.

The present invention more particularly relates to a door catch for doors of the type commonly employed on motor vehicle bodies, and has for its object to provide a device of this character which can be utilized as a catch for a door and also utilized for rigidly locking the door against opening within the associated door frame.

It is also an object of the invention that the device be simple in structure and adapted to be applied to any conventional type of door.

A further object of the invention is that the device be adapted to be operated from the outer side of the door to which the same may be applied.

Other objects, and objects relating to details of construction, combination and arrangement of parts will hereinafter appear in the detailed description to follow.

The invention is illustrated by way of example in the accompanying drawings, in which:—

Figure 1 is a fragmentary perspective view illustrating the combined lock and catch device of the present invention when applied to a door on a motor vehicle body,

Figure 2 is a vertical sectional view taken through the combined lock and catch device and longitudinally thereof,

Figure 3 is a horizontal sectional view of the device taken longitudinally thereof similar to Figure 2,

Figure 4 is a horizontal sectional view taken on the line 3—3 of Figure 2 and looking in the direction of the arrows,

Figure 5 is a view similar to Figure 2 and illustrating the lock bolt when operated to rigidly lock the same within the associated door jamb,

Figure 6 is a detail sectional view taken on the line 6—6 of Figure 2 and looking in the direction of the arrows, and

Figure 7 is a fragmentary horizontal sectional view taken through a lock slightly modified with respect to the construction of lock shown in Figures 1 to 6, inclusive.

Like reference numerals designate corresponding parts throughout the several views.

Referring to the drawings in detail, and particularly Figure 1, 10 indicates generally the body of a motor vehicle which is provided with a side door 11, said side door being of conventional construction and hinged in the usual manner. At 12 there is indicated generally a combined lock and catch of the present invention.

The combined lock and catch device may comprise a casing, generally indicated by the reference numeral 13, said casing being elongated and rectangular in cross section and more specifically comprising a bottom wall 14, a top wall 15, a forward end wall 16, a rear end wall 17, a stationary inner side wall 18 and a removable side wall 19. The casing is also formed at its forward end with tangs or extensions 20, whereby the same may be secured to a door frame.

Upon the inner side wall 18 of the casing there is secured a combined guide and supporting member 21 which comprises a circular plate 22 having a pair of tangs 23 extending therefrom and each tang 23 being formed with an off-set portion 24 which is utilized in securing this member to the side wall of the casing. A lock bolt 25 is provided which is slidable between the plate 22 and the inner side wall 18 of the casing and which has its rear end formed with a reduced cylindrical portion 26 slidable through an opening 27 in the rear wall 17 of the casing 19. The opening 27 is slightly enlarged with respect to the lock bolt portion 26, for a purpose which will later become apparent. Between the shoulder 28 provided by the reduced lock bolt portion 26 and the rear wall casing there is interposed a compression spring 29, said compression spring encircling the reduced lock bolt portion 26, as shown, and being adapted to urge the lock bolt 25 forwardly. The forward end of the lock bolt 25 is provided with a head 30 which is rectangular in shape, as shown, and which is beveled at its forward end, as at 31. The forward end of the head 30 is provided with an upwardly extending protrusion 32 which is likewise beveled, as shown. The forward wall 16 of the casing is provided with an opening 33 through which the head 30 of the lock bolt 25 passes and this opening is enlarged with respect to the lock bolt 30, for a purpose which will later become apparent,

As shown in Figure 5, the door jamb 33 is provided with a recess or pocket in which the head 30 of the lock bolt 35 may extend and as usual this door jamb is hollow, whereby upon raising the head 30 of the lock bolt 25, as illustrated in Figure 5, the upwardly extending protrusion or extension 32 of said head would engage upon the inner side of the lock jamb 30. The manner in which this element is utilized, whereby to firmly lock the door with which the present device may be associated against opening and also against rattling will hereinafter be described.

The forward wall 16 of the casing 13 is provided with a rearward extension 34 which is preferably U-shaped in cross section and which is formed to provide an inclined surface at its forward end, as at 35. This extension 34 is in substance a guide member, and within this guide member there is slidably mounted a block 36 having a forward inclined edge 37 complementary to the inclined surface 35 of the guide member 34. As is obvious with the forward sliding of the block 36 the forward end of the lock bolt 25 will be raised to bring the same to the position shown in Figure 5 of the drawings.

The member 21 has its plate portion 22 formed with a stud 38 which terminates at its outer end in a reduced threaded portion 39. Upon the stud 38 there is rotatably positioned a circular plate member 40, and said member is held in position by a suitable nut 40'. Also between the inner face of this member and the plate portion 22 of the guide member 21 there is interposed a washer 41. The member 40 has pivotally secured thereto the one end of a link 42, and the other end of the link being in turn pivotally connected to the rear end of the block 36. The disc member 40 is further provided with a recess 43 which is preferably formed with an inclined inner wall 44 and within said recess there is positioned the laterally extending portion 45 of a handle 46, said portion 25 being pivotally supported by the disc member 40 through the means of a pin 47. The free end of the handle portion 45 is adapted to engage with an enlargement 48 formed upon the lock bolt 25. The enlargement 48 extends from the lower side of the lock bar 25, as shown to advantage in Figures 2 and 5, and also extends from the inner side of the lock bolt 25, as shown at 49 in Figs. 3 and 4. The circular plate or disc 40 is further formed with a protrusion 50 which is adapted to engage with the portion 48 of the lock bar 25, when said disc is rotated in a rearward direction. Also the plate portion 22 of the member 21 is provided with an arcuate-shaped recess 51 as shown to advantage in Figure 5, whereby to permit the rotation of the member 40

together with the handle 46 carried thereby.

There is further provided for the lock bolt 25 a spring finger 52 which has its one end anchored to the casing 13 and its other end adapted to press upon the upper edge of the lock bolt head 30, and thereby to maintain the same in its lowered position. The spring finger 52 is curved at its free end, as shown, in order to permit slidable engagement with the lock bolt head 30.

In the use of the present invention when the same is mounted upon a door, as illustrated in Figure 1, the door may be "slammed" to its closed position in the usual manner and the lock bolt 25 will be depressed for engaging with the door jamb sufficient to permit the lock bolt head 30 to enter the door jamb in position for holding the door closed. When it is desired to open the door the handle 46 may be grasped and moved for swinging the inner end rearwardly and against the protrusion 48 of the lock bolt 25, whereby to depress said lock bolt against the tension of the spring 29 and permit the door to be opened. After the door has been closed should it be desired to lock the same against rattling and also against opening, then the handle 46 should be manipulated to rotate the disc member 40 and as illustrated in Figure 5 of the drawings, the block 36 will be pushed forwardly by the action of the link 42 which will cause this block to lift the forward head 30 of the lock bolt 25 so that the protrusion 32 of this lock bolt head will engage upon the inner side of the door jamb 33. Also with this rotative movement of the disc 40, the protrusion 50 thereof will engage with the enlarged portion 49 of the lock bolt and move the lock bolt rearwardly and against the tension of the spring 29 and this rearward movement of the lock bolt will insure that the protrusion 32 of the lock bolt head will positively engage with the inner side of the door jamb 33, as illustrated in Figure 5. The lock bolt 25 will now be held to rigidly lock the door against rattling and also against opening.

In Figure 7 the structure shown is a duplicate of that shown in Figures 1 to 6, inclusive, and like reference numerals have been applied. It will be noted, however, that the handle 46 is arranged on the other side of the locking bolt 25 when compared with the structure shown in Figures 1 to 6, inclusive. The only change necessary in this structure is that the lug 49 of the locking bolt 25 should occur on the opposite side with respect to the structure previously shown and described. By the arrangement shown in Figure 7 the handle would occur upon the inner side of the door to which the lock is applied. By providing doors on an automobile body with locks of this character the same can be manipulated

only by persons inside of the automobile body. In case the automobile body had a plurality of doors then one of these doors could be provided with a key lock which
 5 could be operated from the exterior of the body and the remainder of the doors could be provided with a lock of this invention with apparent advantages.

While I have shown and described the
 10 preferred form of my invention, I wish it to be understood that I am aware of the fact that the construction, combination and arrangement of parts may be changed by those skilled in the art without departing
 15 from the spirit of the invention, as indicated by the appended claims.

I claim:

1. A device of the character described comprising a spring pressed vertically shift-
 20 able lock bolt, a rotatable disc, a handle pivotally supported upon said disc and said handle being adapted to be utilized for rotating said disc, a lug extending from
 25 said bolt adapted to be engaged by said handle when the latter has been swung in one direction about the axis of its pivot, whereby the lock bolt will be retracted, and means adapted to be actuated when
 30 the disk is rotated in one direction to elevate the lock bolt at the forward end of the latter.

2. A device of the character described comprising a longitudinally movable and vertically shiftable substantially horizontal
 35 lock bolt, a rotatable member, a handle for retracting said lock bolt and for rotating said member selectively, a block slidable beneath the forward end of said lock bolt and adapted to elevate said end of the lock member
 40 when moved forwardly, and connecting means between said rotatable member and

block, whereby the forward end of the lock bolt may be elevated with the rotation of said rotatable member, for the purpose de-
 45 scribed.

3. A device of the character described comprising a spring pressed vertically shift-
 50 able lock bolt, a rotatable disc, a handle pivotally supported upon said disc and said handle being adapted to be utilized for ro-
 55 tating said disc, a lug extending from said bolt adapted to be engaged by said handle when the latter has been swung in one direction about the axis of its pivot, whereby the lock bolt will be retracted, means adapt-
 60 ed to be actuated when the disk is rotated in one direction to elevate the lock bolt at the forward end of the latter, and spring means engaging said lock bolt adjacent to the forward end of the latter and tending

4. A device of the character described comprising a spring pressed vertically shift-
 65 able lock bolt, a rotatable disc, a handle pivotally supported upon said disc and said handle being adapted to be utilized for ro-
 70 tating said disc, a lug extending from said bolt adapted to be engaged by said handle when the latter has been swung in one direction about the axis of its pivot, whereby the lock bolt will be retracted, means adapt-
 75 ed to be actuated when the disk is rotated in one direction to elevate the lock bolt at the forward end of the latter, and two elements respectively carried by said disk and said lock bolt for co-engaging when the disk has been rotated in said one direction and the forward end of the lock bolt has been lifted to effect slight retractive movement of the lock bolt.

JAMES HENRY LANE.