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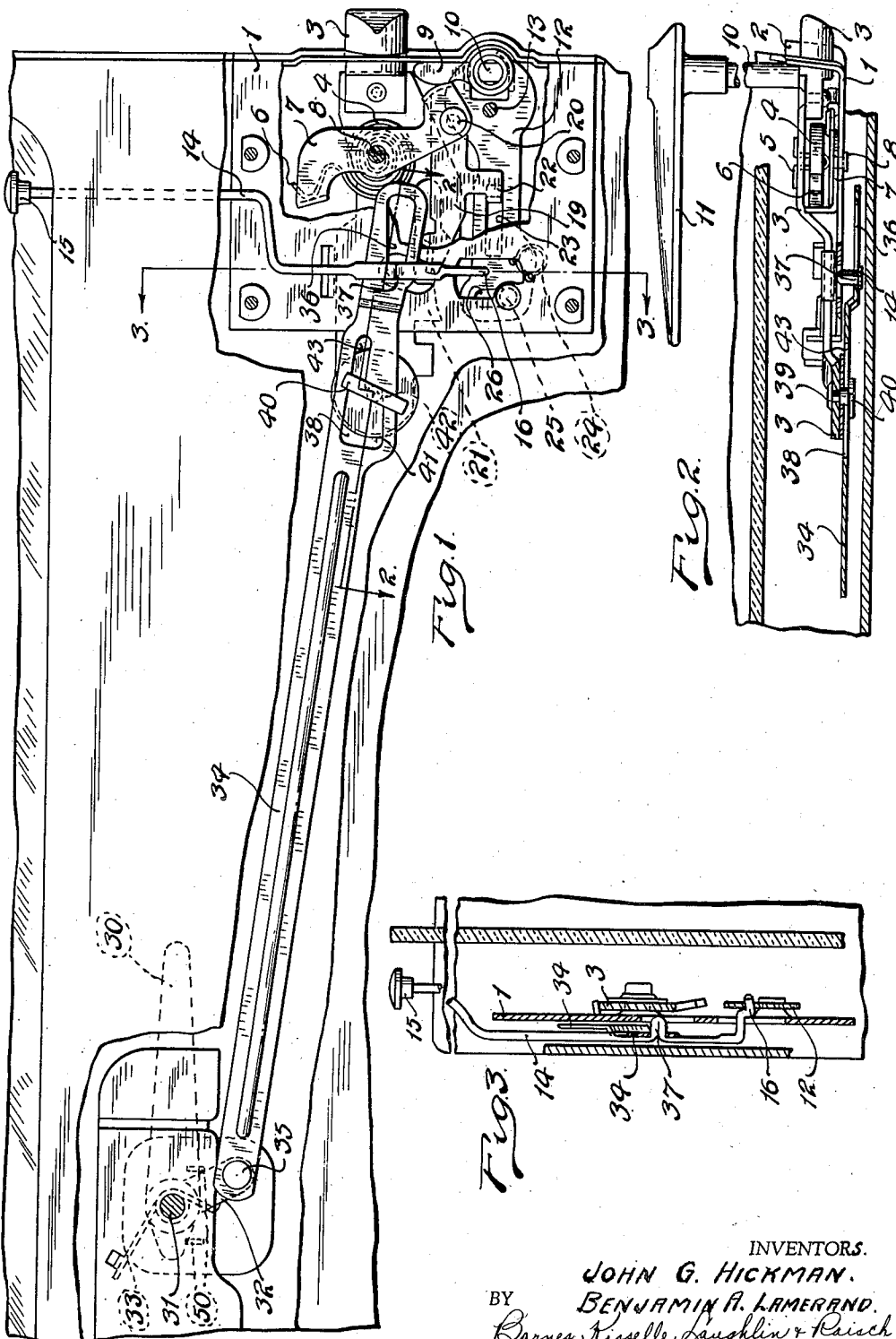
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2,213,839

DOOR LOCK

Filed Oct. 17, 1938

2 Sheets-Sheet 1



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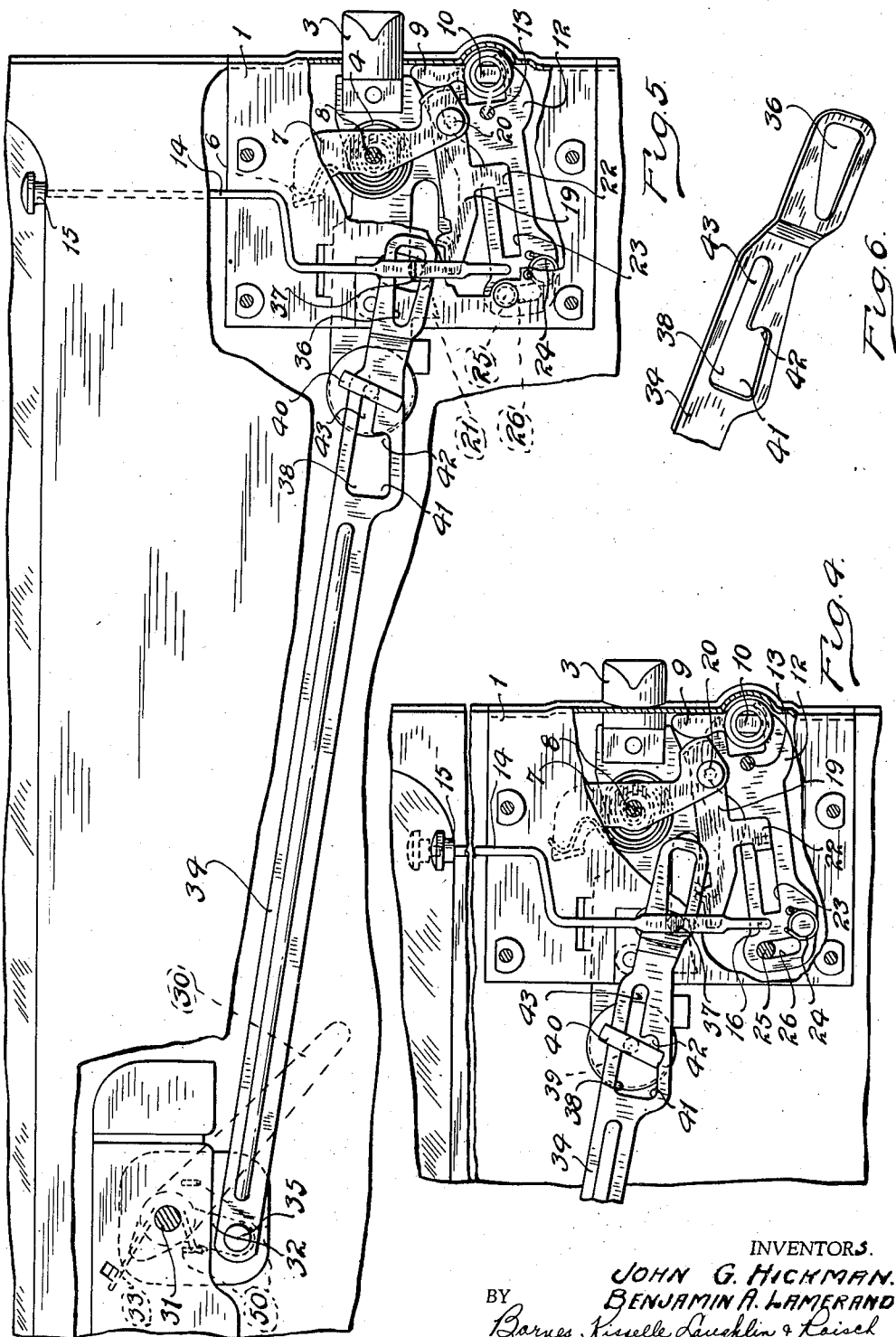
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UNITED STATES PATENT OFFICE

2,213,839

DOOR LOCK

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5 Claims. (Cl. 292—167)

This invention relates to a door lock and more particularly to a door lock for an automotive vehicle.

In the presently used automobile door lock the inside handle is always connected to the bolt so that turning of the handle always retracts the bolt and permits opening of the door. This type of lock presents a hazard to the occupant of the vehicle, particularly when the car is in motion. Many children have fallen out of vehicles while in motion by innocently turning the door handle which causes the door to open. Adults have also been injured by accidentally or unwittingly turning the inside door handle which opens the door and causes the adult to fall out of the moving vehicle.

It is an object of this invention to increase the safety of the vehicle passenger, particularly against the hazard above mentioned. This has been accomplished by arranging the inside remote door handle so that it can be disconnected from the latch bolt. When disconnected from the latch bolt, turning of the inside handle is ineffective to retract the latch bolt.

In the drawings:

Fig. 1 is an assembly view showing the inside remote handle connected to the latch bolt so that turning of the handle retracts the latch bolt.

Fig. 2 is a section along the line 2—2 of Fig. 1.

Fig. 3 is a section along the line 3—3 of Fig. 1.

Fig. 4 is a side elevation showing the position of the draft link when turning of the remote handle is ineffective to retract the bolt.

Fig. 5 is an assembly view showing the remote handle turned from its normal to its bolt retracting position but with the handle ineffective to retract the bolt.

Fig. 6 is a detail of the remote handle draft link.

Referring more particularly to the drawings there is shown a door lock which per se is the same as that shown in the Andersen-Bowlus Patent No. 2,039,873. The frame of the lock is designated 1 and the selvage plate 2. The bolt 3 is slidably mounted on the latch frame. A spiral spring 4 is anchored on the sliding bolt 3 by the clip 5 and a free end 6 engages one end of a lever 7 which is pivotally mounted as at 8 upon the latch frame. The other end of the lever abuts against the outside rollback 9. The spindle 10 of the outside door handle 11 is secured in the outside rollback 9 so that turning of the outside handle 11 turns the rollback. A swinging control lever 12 is pivoted on pin 13 which is fixed to the latch frame. The lever 12 can be pivoted about

the pin 13 by a push and pull rod 14, the upper end of which projects through the garnish molding and is provided with a button 15. The lower end of the rod 14 is pivotally connected to the lever 12 as at 16.

A retractor for the sliding bolt in the form of a lever 19 is pivotally secured at one end to the lever 7 by the pin 20 and the other end of the retractor lever 19 is adapted for engagement with the lug 21 on the bolt 3. The lever 19 also has a lug 22 which slidably engages the lever 12 in the slot 23. The push button rod 14 can be raised or lowered to swing the lever 12 about the pin 13.

A snap over center spring 24 yieldably retains the lever 12 in raised or lowered position. The free end of the lever 12 is guided by a pin 25 which engages the lever in the slot 26. When the lever 19 is in raised position, as shown in Fig. 1, the outside handle can be turned down to swing the rollback 9 counter-clockwise. The rollback 9 operates through the lower end of lever 7, pin 20, and retractor 19 to retract the bolt. During the retraction of the bolt the free end of the retractor 19 abuts lug 21. When the push button 15 is depressed the lever 19 is thrown to the position indicated in Fig. 5 clear of lug 21. Turning of the outside rollback is now ineffective to retract the bolt 3. Thus far the lock described is identical with that shown in the Andersen-Bowlus Patent No. 2,039,873.

An inside remote handle 30 is fixed on the shaft 31 which is rotatably supported on the lock board. A lever 32 is also fixed to the shaft 31. A torsion spring 33 is provided for returning the handle 30 to its normal horizontal position, shown in Fig. 1. The lever 32 is pivotally secured to a draft link 34 by a rivet 35. The other end of the draft link 34 is adapted for connection to the sliding bolt 3 and is shown in detail in Fig. 6. This end of the lever is provided with an elongated triangular opening 36. The rod 14 has a return bent portion 37 which engages the link 34 in the triangular opening 36, see Fig. 3.

The draft link is also provided with an opening 38 which receives the pin 39 which is riveted to the inner end of the sliding bolt 3, see Fig. 2. The pin 39 is provided with a cross bar 40 which overlaps the draft link 34 along the top and bottom edges of the opening 38. The opening 38 comprises an enlarged portion 41 which provides a shoulder 42 in the draft link 34 and the opening 38 also comprises an elongated portion 43 along which the pin 39 rides when the draft link 34 is ineffective to retract the bolt.

The operation of the lock is as follows: When

the lock is in the condition shown in Fig. 1 so that pin 39 is positioned in front of shoulder 42, then turning of the inside handle 30 will retract the latch bolt 3 because the retracting or leftward movement of the draft link 34 is transmitted through pin 39 to the bolt 3. At this time turning of the outside handle and rollback 10 will retract the bolt as above described and the push button 15 is raised and retractor 19 is operatably connected to lug 21.

To disconnect both the outside handle and the inside handle from the latch bolt and thus render both inner and outer handles ineffective to retract the bolt, the push button 15 is depressed. This position of the push button is shown in the full lines, Fig. 4. By depressing the push button 15 the return bent portion 37, which now interengages the draft link 34 in the reduced end of the triangular opening 36, swings draft link 34 about pin 35 and thus disengages pin 39 from shoulder 42. At the same time the push rod 14, acting through lever 12 and lug 22, swings retractor 19 to lowered position so that it is free to swing by lug 21 on bolt 3. If the outside handle is now turned, retractor 19 will simply move by lug 21 and the bolt 3 will not be retracted. If the inside handle 30 is now turned down from normal position, shown in Fig. 1, to bolt retracting position, shown in Fig. 5, the draft link 34 will be drawn to the left from the position shown in Fig. 4 to that shown in Fig. 5 and draft link 34 will simply slide along pin 39 in the elongated opening 43. The elongated opening 43 is sufficiently long so that the pin 39 will not reach the end of the opening 43 before the inside handle 30 has reached the limit of its turning movement, as shown in Fig. 5. The turning of the inside handle 30 is limited by lugs 50, one of which abuts lever 32 when the inside handle is in normal position and the other of which abuts lever 32 when the handle has been swung to full bolt retracting position, shown in Fig. 5.

From the above it is evident that by depressing the push button 15 the safety of the occupant of the car is doubly assured. He is safe from molestation from without the car because the outside handle is ineffective to retract the bolt and he is safe from falling out of the car because the bolt cannot be retracted by the inside handle to permit the door to open.

We claim:

1. In a door lock assembly, a retractable latch bolt, a movable inside door handle, a draft link extending between the handle and the bolt, a connection between the handle and one end of

the draft link, and shiftable clutch means entirely carried by the other end of the draft link and the bolt, said means being shiftable to one position to operatively connect the draft link with the bolt and shiftable to another position to disconnect the draft link from the bolt whereby actuation of said handle is optionally effective or ineffective to retract said bolt.

2. In a door lock assembly, a retractable latch bolt, a swingable handle positioned remote from the bolt, a shiftable link, a connection between one end of the link and the swingable handle, and a pin and shoulder connection between the other end of the link and the bolt, said link being shiftable to disconnect the pin from the shoulder whereby swinging of the handle is ineffective to retract the bolt.

3. In a door lock assembly, a retractable latch bolt, a swinging handle, a draft link, a pivotal connection between one end of the draft link and the handle and a shiftable connection between the other end of the draft link and the bolt in the form of a shoulder on the draft link and a pin on the bolt, and means for shifting the draft link about its pivot to disconnect the shoulder from the pin whereby swinging of the handle is ineffective to retract the bolt.

4. In a door lock assembly, a retractable latch bolt, a swingable handle, a draft link, a pivotal connection between one end of the draft link and the handle, a shiftable connection between the other end of the draft link and the bolt in the form of an opening in the draft link forming a shoulder and a pin on the bolt positioned in the opening and interengaging the shoulder, and means for swinging the draft link to disconnect the pin from the shoulder and render the swinging handle ineffective to retract the bolt.

5. In a door lock assembly, a retractable latch bolt, swingable inside and outside door handles, a draft link, a pivotal connection between one end of the draft link and the inside door handle, a breakable connection between the other end of the link and the latch bolt in the form of a pin and shoulder, a shiftable retractor between the outside door handle and the latch bolt; and means including a connection between the shiftable link and shiftable retractor for simultaneously shifting said link and retractor to disconnect the pin from the shoulder and the retractor from the latch bolt whereby the inside and outside handles are rendered ineffective to retract the bolt.

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