Nov. 23, 1937. S. BUBES 2,100,237

DOOR LOCK

Filed March 13, 1937

Fig. 1.

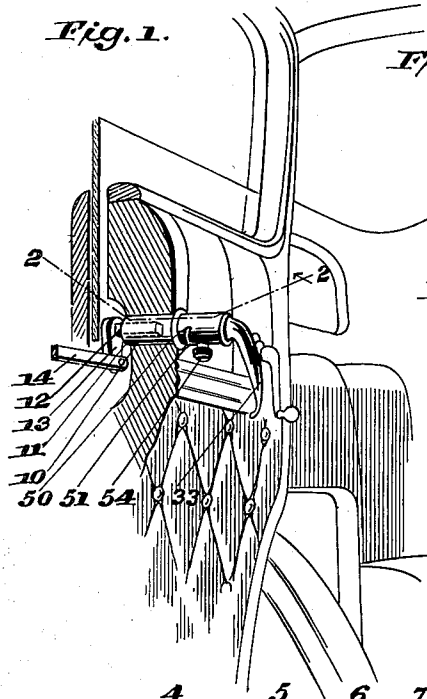


Fig. 4.

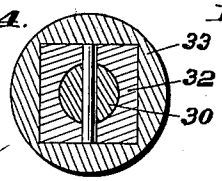


Fig. 5.

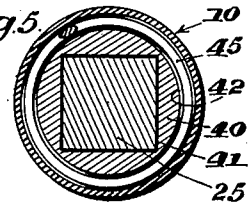


Fig. 6.

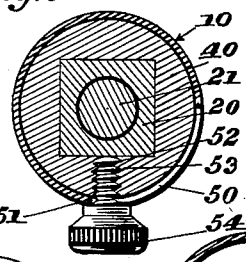


Fig. 7.

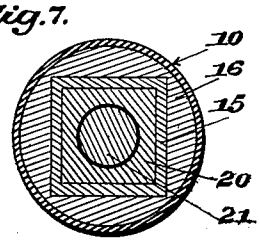


Fig. 8.

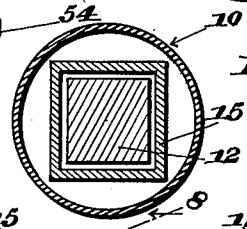


Fig. 2.

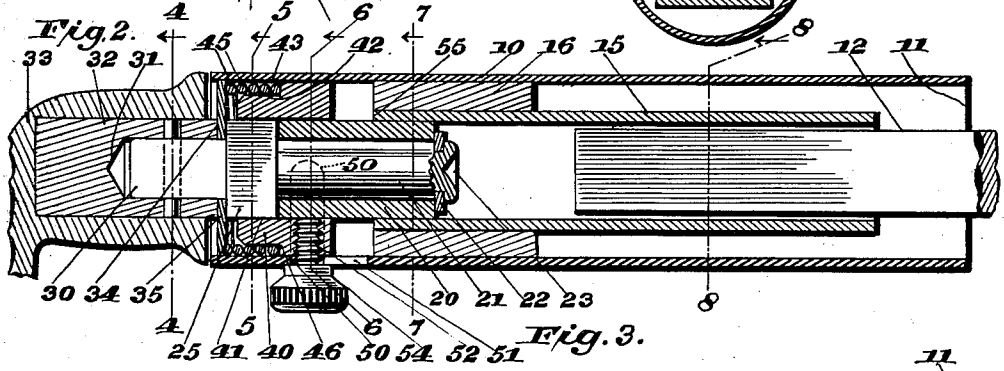
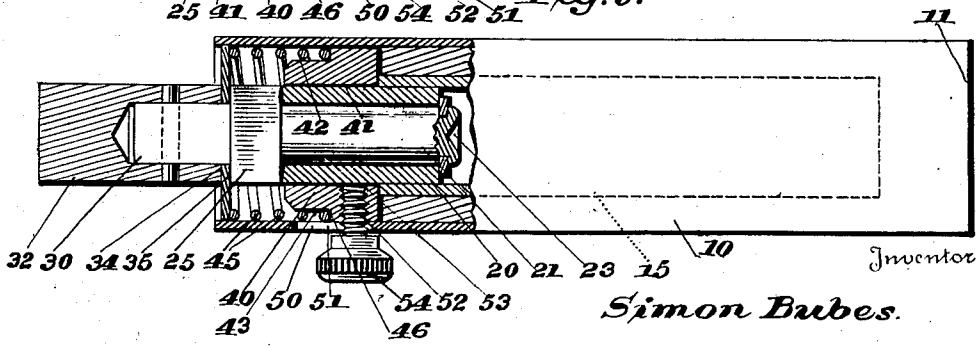


Fig. 3.



Inventor

Simon Bubes.

By Munn, Anderson & Liddy

Attorneys

Patented Nov. 23, 1937

2,100,237

UNITED STATES PATENT OFFICE

2,100,237

DOOR LOCK

Simon Bubes, Chicago, Ill.

Application March 13, 1937, Serial No. 130,767

6 Claims. (Cl. 292—352)

This invention relates to door latches.

Children riding in automobiles have a tendency to operate the inside door handle and occasionally release the latching bolt of the usual lock and are thrown out of the automobile and in some instances are thus killed or seriously injured. Furthermore, unauthorized persons finding the door locked and unable to manipulate the outside door handle for releasing the usual locking bolt will insert a wire or other instrument through openings for engagement with the inner door handle for releasing the door for entry to the automobile.

It is an object of the present invention to provide a door latch whereby the inner door handle may be released from operative engagement with the locking mechanism so that when any attempt is made to open the door from the inside by some unauthorized person the handle may be merely rocked without effecting the releasing of the locking bolt.

Another object of the invention is the provision of a simple and efficient device for connecting or disconnecting the inner door handle from the usual locking mechanism of an automobile door so that unauthorized persons who attempt to manipulate the inner door handle will find that said door handle is inoperative for releasing the locking bolt.

A further object of the invention is the provision of a door latch particularly useful in connection with automobiles in which a spring-pressed sleeve normally disconnects the inner door handle from the usual locking mechanism for the door, means being provided for moving the sleeve to an operative connecting position between the inner door handle and the locking mechanism so that the door may be unlocked from the inside.

A still further object of the invention is the provision of a door latch which may be employed in connection with the inner or outer handles which manipulate the locking bolt of a door whereby either or both of the handles may be released from operative engagement with the locking mechanism to prevent unauthorized persons from manipulating the usual locking bolt for opening the door.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a fragmentary view in perspective of a section of an automobile door showing my improved door latch applied thereto,

Figure 2 is a longitudinal vertical section taken along the line 2—2 of Figure 1 showing the position of the parts for unlocking the door by an inside handle,

Figure 3 is a section similar to that shown in Figure 2 in which the inner door handle has been released from operative engagement with the locking mechanism of the door,

Figure 4 is a vertical section taken along the line 4—4 of Figure 2,

Figure 5 is a vertical section taken along the line 5—5 of Figure 2,

Figure 6 is a transverse vertical section taken along the line 6—6 of Figure 2,

Figure 7 is a transverse vertical section taken along the line 7—7 of Figure 2, and

Figure 8 is a transverse vertical section taken along the line 8—8 of Figure 2.

Referring more particularly to the drawing it will be seen that the door latch is applied to an automobile door but it must be borne in mind that a similar latch may be employed in connection with the outer door handle for releasing the same if desired by a mere extension of certain of the parts of the construction. This type of construction just mentioned may also be employed in connection with buildings where it is desired to release the handle or door knob at the exterior of the building to prevent unauthorized persons from manipulating the handle or knob as desired.

The mechanism is housed within a casing 10 which is mounted in the door and secured therein in any approved manner against turning. This casing is in the form of a hollow cylinder and has an open end 11 through which is adapted to be inserted a shank 12. This shank or operating bar is secured to a lever 13 and a link 14 connects the lever with the usual operating elements of the door lock for releasing said lock when desired. The member 12 is square-shaped in cross section and is adapted to neatly fit within a sleeve or rotatable member 15 so that when the member 15 is rocked the shank 12 will also be rocked. While the interior of the sleeve 15 and the member 12 is described as being rectangular in cross section these parts may have any suitable non-circular configuration. The only requirement is that the member 12 will have co-

operating faces which will engage complementary faces within the sleeve 15.

The sleeve 15 is received by a bearing 16 having an outer circular contour which is received within the cylinder 11 and the bearing 16 is adapted to rotate with the member 15.

An auxiliary sleeve 20 has the same exterior contour as the inner surface of the sleeve 15 and the auxiliary sleeve is secured to the sleeve 15 or it may be formed integrally therewith so that the auxiliary sleeve and the main sleeve 15 will be rotated simultaneously.

A shaft 21 is mounted for rotation in the auxiliary sleeve 20 which forms a bearing for the shaft 21. A washer 22 engages the outer end of the shaft 21 and the auxiliary sleeve 20 and any suitable means 23 is provided for maintaining the washer 22 in position.

Intermediate its ends the shaft is provided with a nut portion 25 which is square-shaped, as shown more particularly in Fig. 5. This nut forms a shoulder which abuts the inner end of the auxiliary sleeve 20. Thus the shaft 21 will be maintained in position within the sleeve 20 and against sliding movement.

The extreme inner end of the shaft 21, as shown at 30, is received within a socket 31 of a shank portion 32 for an inner door handle 33. The shank portion is secured to the inner end 30 of the shaft 21 and has its inner end, as shown at 34, abutting a washer 35. This washer is located between the nut portion 25 and the inner end of the shank portion 32 and is rigidly fastened to the casing 10. The members 25, 32 and 35 are secured together so that oscillation of the handle 33 will cause rocking of the shaft 21.

A sleeve 40 has a central passage 41 which is rectangular in shape and is slidably mounted upon the inner end of the auxiliary sleeve 20. The sleeve is also adapted to slide over the nut portion 25, as shown in Fig. 2, for locking the shaft 21 to the auxiliary sleeve 20 and likewise to the main sleeve 15.

The locking sleeve 40 is provided with a reduced portion 42 to provide a pocket 43 for one end of a coil spring 44. One end of the spring is seated against an annular shoulder 46 on the locking sleeve 40 while the opposite end of the spring engages the washer 35.

The casing 10 is provided with an arcuately-shaped slot 50 extending at least 90° around the periphery of the said casing. Extending at right angles from the curved slot 50 is a horizontal slot 51.

A set screw 52 is threaded into an opening 53 in the locking sleeve 40 and has a manipulating knob 54 located exteriorly of the casing 10. It will be noted that the screw passes through the horizontal slot 51 and into the opening 53.

The operation of my device is as follows: As shown in Fig. 3 the sleeve 40 is retained in its innermost position by the spring 45 with the inner edge of the sleeve abutting the inner end 55 of the main sleeve 15 and the bushing or bearing 16. At this time the set screw 52 is located in the horizontal slot 51 and the handle 33 may be operated without causing rocking of the sleeve 15.

When the sleeve 15 is in the position shown in Fig. 3 it is out of engagement with the nut or squared portion 25 of the shaft 21. Thus it will be seen that rocking of the handle 33 will merely cause rocking of the member 25 and the shaft 21 in the bearing or auxiliary sleeve 20.

When it is desired to connect the handle 33 to the rocking or rotatable member 15 the sleeve 40 is moved outwardly against the tension of the spring 45 by means of the knob 54 of the set screw 52 whereby the squared interior socket portion of the locking sleeve 40 will receive the nut or enlargement 25 whence the members 15 and 21 will be connected for simultaneous rotation. The set screw 52 is then in the arcuate slot 50 and when screwed inwardly will engage the auxiliary sleeve 20 and secure the locking sleeve 40 against inward movement. In other words the sleeve 40 will be held against reciprocation by the spring 45.

When the parts are in the position shown in Fig. 3 the handle 33 may be rocked, and since the locking sleeve 40 connects the auxiliary sleeve 20 and likewise the main sleeve 15 with the shaft 21, said handle will also rock the rotatable member 15 and likewise the member 12 for releasing the usual locking bolt of the door lock.

While I have illustrated the door latch as applied to an automobile door it will be appreciated that this construction may be applied to the door handles of buildings and with a slight change in the position of the set screw 52 it may connect or disconnect the outside handle of the door from the inside where such constructions are desired.

I claim:

1. In a door latch, a casing, a rotatable member adapted to be connected to an operating part of a door lock and mounted in said casing, a shaft loosely mounted for rotation in the rotatable member, a door handle connected to the outer end of the shaft, a sleeve slidably mounted on the member and rotated by said member, cooperating means on the shaft and sleeve for operatively connecting the rotatable member with the shaft, a spring for maintaining the sleeve out of engaging relation with the connecting means on the shaft, and means for retaining the sleeve in engagement with said connecting means so that the handle may operate the rotatable member.

2. In a door latch, a rotatable means adapted to be connected to an operating part of a door lock, a shaft, a door handle for rocking said means and connected to the shaft, means adapted to connect the shaft with the rotatable means, a spring for retaining the connecting means in an inoperative position, and means for securing the connecting means in an operative position against the tension of the spring.

3. In a door latch, a rotatable means adapted to be connected to an operating part of a door lock, a casing housing said means, a shaft mounted for independent rotation in the rotatable means and having a locking shoulder, a slidable sleeve operatively connected with the rotatable means and adapted to be moved into engagement with the locking shoulder for connecting the shaft with the rotatable means, an inner door handle connected to the shaft, a spring for retaining the sleeve in an inoperative position, and means for maintaining the sleeve in an operative locking position against the tension of the spring.

4. In a door latch, a rotatable means adapted to be connected to an operating part of a door lock, a casing housing said means, a shaft mounted for independent rotation in the rotatable means and having a locking shoulder, a slidable sleeve operatively connected with the rotatable means and adapted to be moved into engagement with the locking shoulder for connecting the shaft with the rotatable means, an inner door handle connected to the shaft, a spring for retaining the sleeve in an inoperative position,

the casing having an arcuate slot and a straight slot at an angle to the arcuate slot, a set screw carried by the sleeve for locking the sleeve to the rotatable means and movable in the arcuate slot, said screw being disposed in the straight slot when the sleeve is in an inoperative locking position.

5. In a door latch, a rotatable means adapted to be connected to an operating part of a door lock, a casing housing said means, a shaft mounted for independent rotation in the rotatable means and having a locking shoulder, a slidable sleeve operatively connected with the rotatable means and adapted to be moved into engagement with the locking shoulder for connecting the shaft with the rotatable means, an inner door handle connected to the shaft, a spring for retaining the sleeve in an inoperative position, the casing having an opening in the side wall thereof, a set screw carried by the sleeve and projecting through the opening, said screw adapted to secure the sleeve to the rotatable means when said sleeve is in connecting relation between the shaft and rotatable means against the tension of the spring.

6. In a door latch, a casing, a rotatable means adapted to be connected to an operating part of a door lock and rockably mounted in the casing, a shaft rotatably mounted in the rotatable means, a door handle connected to the shaft, means releasably connecting the shaft with the rotatable means and including a slidable sleeve and a set screw for securing the sleeve against movement on the rotatable means, and cooperating means on the shaft, sleeve and rotatable means for operatively connecting the shaft to said rotatable means.

SIMON BUBES.