R. SCHOELL.

COMBINED HANDLE AND LOCK FOR VEHICLE DOORS.

APPLICATION FILED JAN. 30, 1917.

1,237,103.

Patented Aug. 14, 1917.

2 SHEETS—SHEET 1.

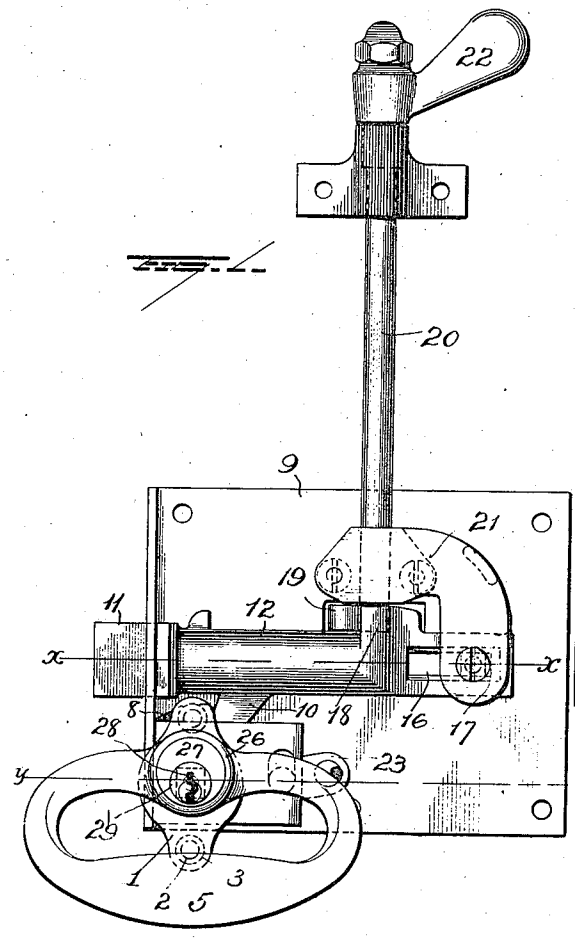

Fig. 1.

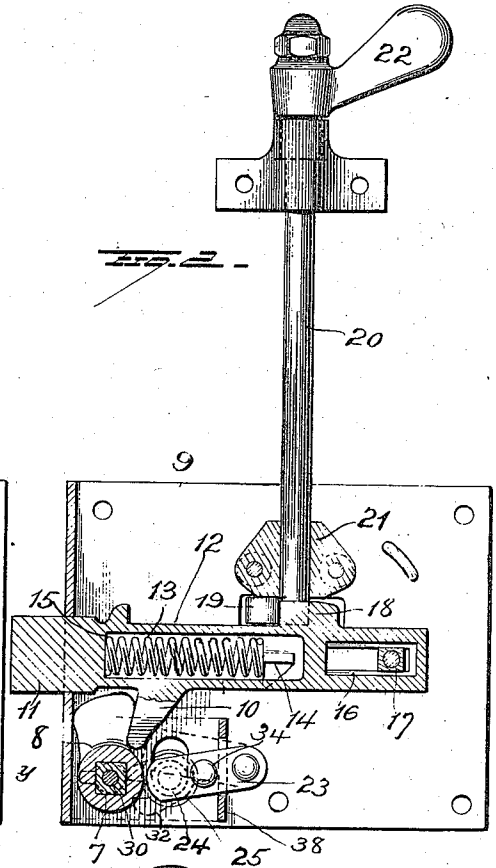

Fig. 2.

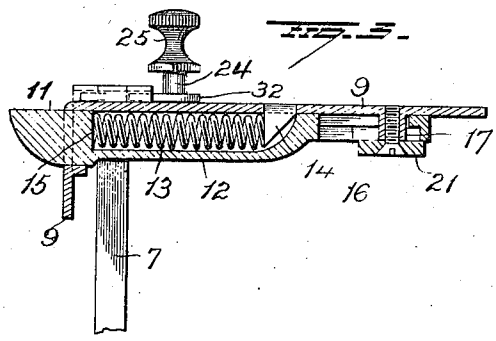

Fig. 3.

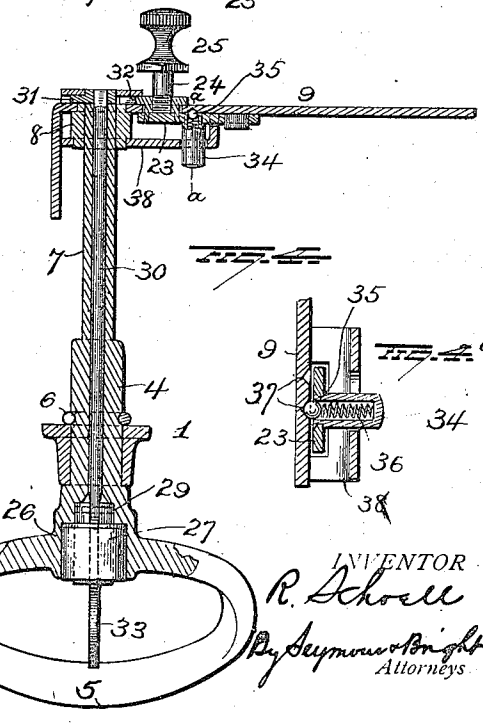

Fig. 4.

Fig. 4a.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

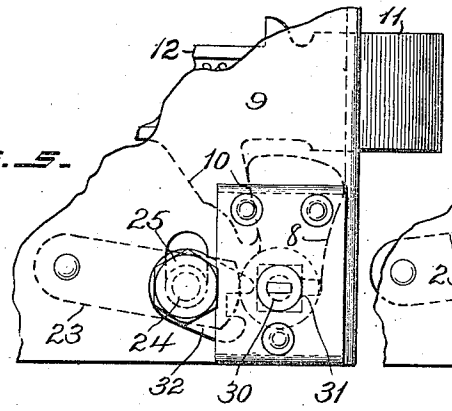


Fig. 6.

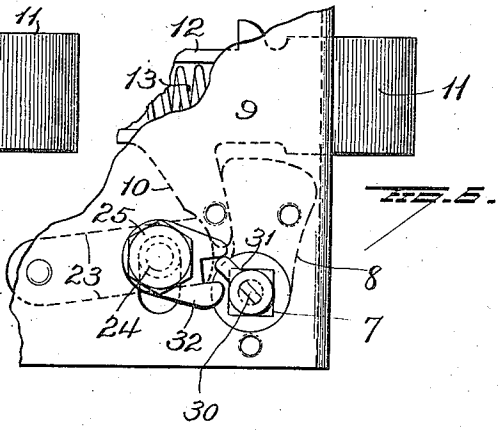
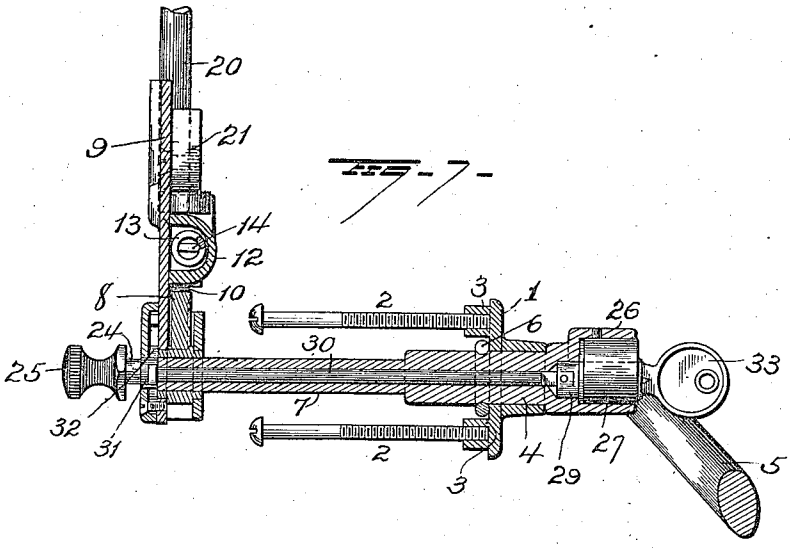


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

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COMBINED HANDLE AND LOCK FOR VEHICLE-DOORS.

1,237,103. Specification of Letters Patent. Patented Aug. 14, 1917.

Application filed January 30, 1917. Serial No. 145,402.

To all whom it may concern:

Be it known that I, REINHOLD SCHOELL, a citizen of the United States, and a resident of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Combined Handles and Locks for Vehicle-Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in combined handle and lock for vehicle doors, the object being to provide means whereby the bolt may be deadlocked either through the key mechanism at the exterior, or by a knob or other projection on the interior, so that the occupant, may before leaving the vehicle, dead lock one door from the inside and after he gets out, dead lock the other door through the key mechanism at the outside of the same.

With this object in view my invention consists in the parts and combination of parts and in the details of construction as will be more fully described and pointed out in the claims.

In the accompanying drawings; Figure 1 is a view in elevation of my improved latch from the handle side; Fig. 2 is a similar view partly in section; Fig. 3 is a sectional view on the line *x—x* of Fig. 1; Fig. 4 is a sectional view on the line *y—y* of Fig. 1; Fig. 4ª is a view in section on the line *a—a* of Fig. 4; Fig. 5 is a face view in rear elevation of the lock showing the dead locking knob in its lowered position; Fig. 6 is a similar view with a portion of the casing removed to show the mechanism actuated by the key for operating the dead locking lever; Fig. 7 is a detail view showing the manner of locking the knob spindle to the socket plate.

1 represents a socket plate adapted to be secured to the outer face of the vehicle door, by screw bolts 2 passing through the door from the inner side, and engaging the internally threaded bosses 3 formed integral with the plate 1, so that the securing devices for the plate are all concealed.

Mounted to turn in the socket of plate 1 is the hollow cylindrical spindle 4 of the handle 5, which in the present instance is locked within the socket by the split ring 6 seated in a peripheral groove in the spindle 4 and bearing against the rear face of the socket plate 1. Other means for securing the spindle in the socket may however be employed. The rear or inner portion of the spindle 4 is made angular in cross section, as shown at 7, and extends rearwardly through the angular opening in the hub of the roll back 8, and is supported at its inner end in the outer plate of the lock plate or casing 9, so that as the handle is turned, the roll back 8 turns with the same. This roll back normally rests in contact with the lock plate or casing 9 immediately in front of the depending finger 10 on the latch bolt 11, and when the roll back is turned rearwardly, its engagement with the said finger 10 retracts the bolt, the bevel end of which projects through the front plate of the lock plate or casing in the usual well known manner.

This bolt 11 is mounted to move on the face of the lock plate or casing 9, and in the present instance, the shank 12 thereof, is made hollow for the reception of the spring 13, the rear end of which bears against an abutment 14 on the lock plate or casing 9, while the outer end of said spring bears against an abutment 15 formed on the bolt, and tends to yieldingly hold the bolt in its projected position. I would have it understood however that I do not confine myself to a bolt so constructed, or to a spring housed within the bolt shank, but claim my improvements in connection with a spring actuated bolt of any kind.

The rear end of the bolt is provided with an oblong slot 16 for the reception of the guiding lug 17 on the lock plate or casing 9, and it is also provided on its upper side with an upwardly projecting shoulder 18 against which the roll back 19 on the lower end of the vertical shaft 20 bears. The shaft is supported at its lower end in a bearing 21 carried by the lock plate or casing 9 and projects upwardly above the latter, and is provided at its upper end with a handle 22 which is located above, or at the inner side of the door, and is accessible from the inner side of the vehicle for retracting the bolt, which may be done by turning the handle in the proper direction.

From the foregoing it will be seen that the bolt may be retracted from the outer side of the door by turning the handle 5

and from the inner side by turning the handle 22.

23 is the deadlocking lever pivoted at its rear end to the lock plate or casing 9, and adapted to be turned or swung upwardly by means to be hereinafter explained, so as to bring its free end up into close contact with the rear face of depending finger 10 on the bolt, and in the path of movement of the said finger, and thus positively prevent the bolt from being retracted while the lever 23 remains in said position. Connected to the lever 23 and projecting through the lock plate or casing 9, is the stem 24 carrying the knob 25 which, when grasped and lifted, swings the lever 23 on its fulcrum and thus brings the free end of the said lever into dead locking position, in rear of and in the path of movement of the finger 10. The knob 25 is exposed at the inner side of the door, and is designed to be actuated to deadlock the door by the occupant before leaving the vehicle, or to release the dead lock after he has entered through the other door.

The cylinder 27 of the pin tumbler lock is located within and fastened to the enlarged part 26 of handle 5, and is also secured to the spindle 4, so that when the handle is turned, the pin tumbler lock 27, and the spindle 4 move or turn with the handle. The face of the pin tumbler lock is flush or approximately so with the front end of the enlargement 26, so that the key slot 28 in the plug 29 of the lock will be readily accessible. The spindle 4 of the handle is hollow to receive a rod 30 connected at its front or outer end to the plug 29 of the pin tumbler lock, and which passes rearwardly through the spindle and terminates just beyond the rear or inner end of the latter, so that when the plug of the pin tumbler lock is rotated or turned by the key, the rod 30 will be also rotated or turned in the same direction and to the same extent as the plug 29. 31 is a cam rigidly secured to the end of rod 30, and is adapted to coact with the notched arm 32 secured to the stem 24 of the dead locking lever 23. The notch in this arm is adjacent the cam 31, so that as said cam is rotated in one direction its free end enters said notch and lifts the arm, stem and dead locking lever, (the latter to its dead locking position) and when turned in the opposite direction, forces the arm 32, stem 24 and dead locking lever 23 downwardly, hence it will be seen that by manipulating the key 33 in the pin tumbler lock, the latch bolt of the lock connected up with said pin tumbler lock, may be deadlocked, or released and when released may be retracted by the manipulation of the handle 5 or the handle 22 in the ordinary manner.

It will therefore be seen that with this latch mechanism on both doors of a vehicle, the occupant can deadlock the latch on the door at the off side by simply lifting the knob 25, and after he leaves the vehicle, can deadlock the bolt on the door through which he left the car, by introducing the proper key 33 into the pin tumbler lock and turning same. With both doors locked and the bolts deadlocked entrance can only be effected through either door by the use of the proper key.

Attached to the locking lever 23 is a cylindrical hollow stop lug 34, the open end of which is secured within an opening through the lever 23, intermediate the ends of the latter. This lug passes through a slot in the housing plate 38 and operates to limit the movement of the lever, and it carries a ball 35 and a spring 36, which yieldingly holds the ball in contact with the face of the lock plate or casing 9. This plate or casing is provided with two recessed seats 37, one of which is located to receive the ball when the lever is in its lowered or unlocking position, and the other to receive the ball when the lever is in its elevated or locking position, thus holding the said lever against accidental displacement in the position in which it has been set, until it shall have been released either from the inside or the outside by proper manipulation.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a combined lock and handle for vehicles, the combination of a spring actuated bolt, a deadlocking lever for the bolt, means at the inner side of the door for actuating the lever, a spindle carrying a handle and connected with the bolt for retracting the same when disengaged from the lever, and a key actuated means within the spindle for actuating the deadlocking lever from the outside.

2. In a combined lock and handle for vehicle doors, the combination of a spring actuated bolt having a projecting member, a lever to engage said member for holding the bolt in its projected position, a knob located at the inner side of the door and connected with said lever for moving same to its two positions, a spindle carrying a handle, means carried by said spindle for retracting the bolt, and a key actuated means passing longitudinally through the spindle for actuating the deadlocking lever.

3. In a combined lock and handle for vehicle doors, the combination of a spring

actuated bolt, a handle, a spindle connected with the handle, a roll back on the spindle for retracting the bolt, a dead locking lever for holding the bolt in its projected position, means connected with said lever and accessible within the vehicle for moving said dead locking lever to its two positions, key actuated means passing longitudinally through the spindle and devices actuated by said means whereby the dead locking lever may be actuated from the outer side of the door by a key.

4. In a combined lock and handle for vehicle doors, the combination with a handle and its spindle, a pin tumbler lock carried by the handle, a rod connected with the plug of said key tumbler lock and passing through and adapted to rotate in said spindle, a spring actuated bolt, means carried by the spindle for retracting the bolt, a deadlocking lever for the bolt, means connected with said lever and accessible from within the vehicle for actuating the dead locking lever, and means connecting the rod in the spindle and the dead locking lever whereby the latter can be actuated from the outer side of the door by a key.

5. In a combined lock and handle for vehicle doors, the combination of a spring actuated bolt, a handle and its spindle for retracting the bolt from the outer side of the door, means accessible from within the vehicle for retracting the bolt, a dead lock for the bolt, key actuated mechanism carried by the handle and its spindle for actuating said deadlocking device, and means accessible from within the vehicle and connected with said dead locking device whereby the latter may be actuated to dead lock or release the bolt.

6. In a combined lock and handle for vehicle doors the combination of a spring actuated bolt, an outside handle and its spindle the latter being hollow throughout its length, means on said spindle for retracting the bolt when the spindle is turned, a vertical shaft having a handle accessible from within the vehicle, means on said shaft for retracting the bolt when the shaft is turned, a lever for deadlocking the bolt in its projected position, key actuated means within the spindle of the outside handle for actuating the deadlocking lever and a knob connected with said lever and accessible from within the vehicle whereby one or both doors thereof may be deadlocked from the outside or the inside.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

REINHOLD SCHOELL.

Witnesses:
WM. S. BALKHAM,
R. A. GREENE.