G. W. WELLS.

DOOR LATCH AND LOCK.

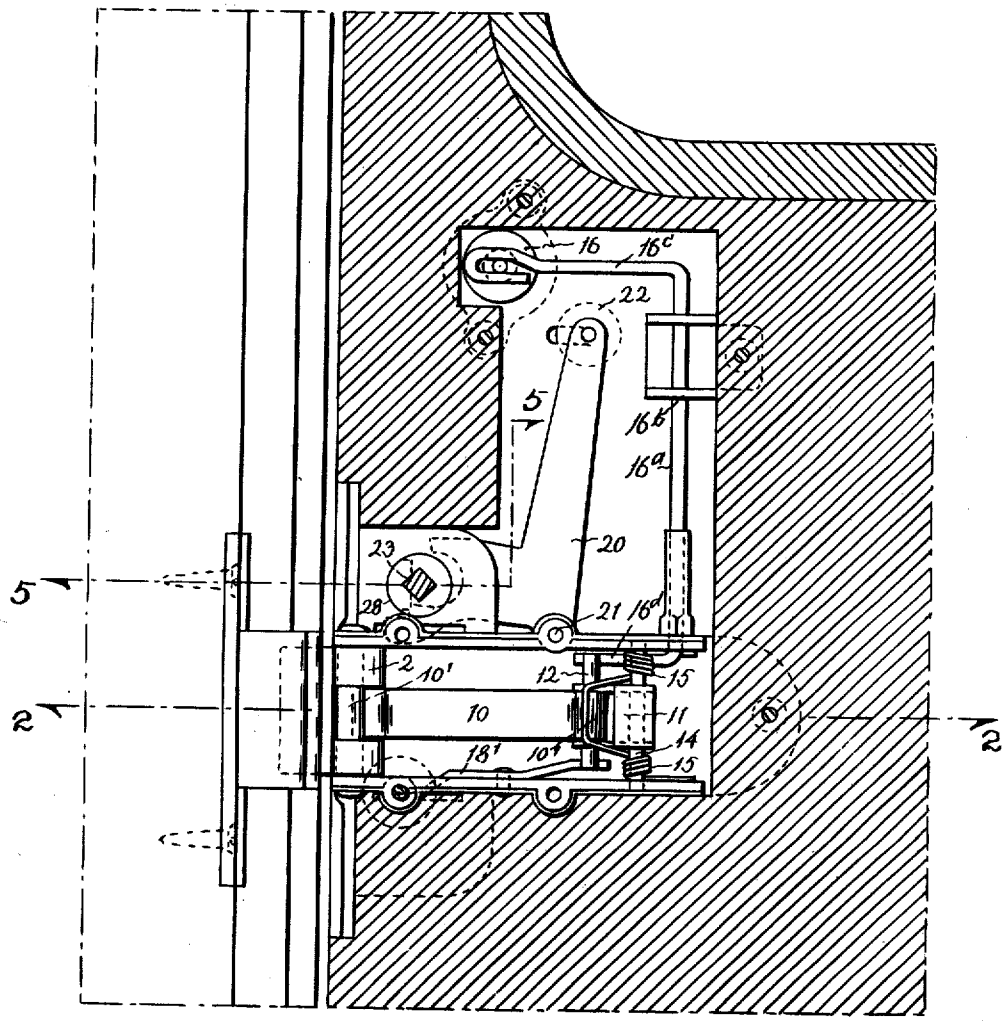
APPLICATION FILED JAN. 29, 1917.

1,242,750.

Patented Oct. 9, 1917.

3 SHEETS—SHEET 1.

Fig. 1.



Witness

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3 SHEETS—SHEET 2.

Fig. 2.

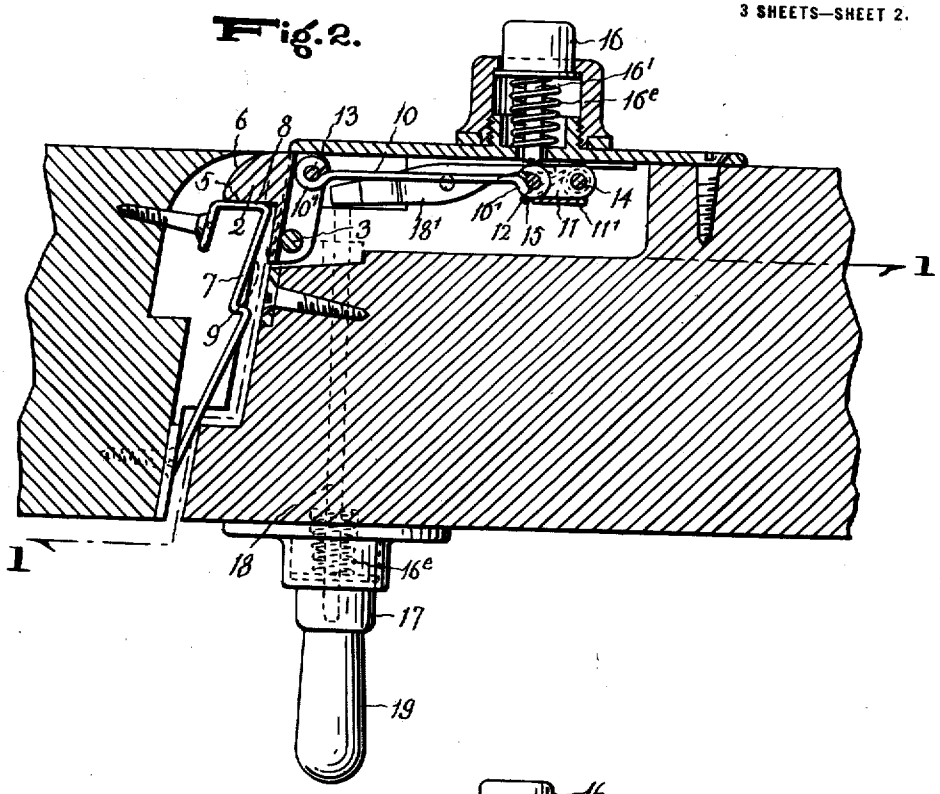


Fig. 3.

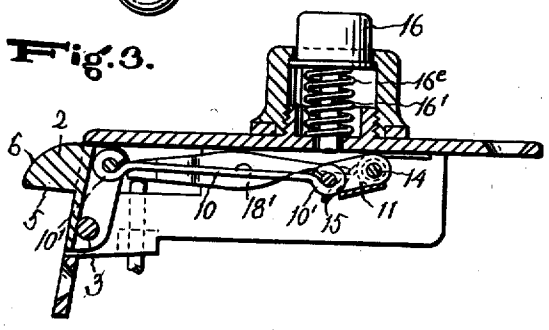
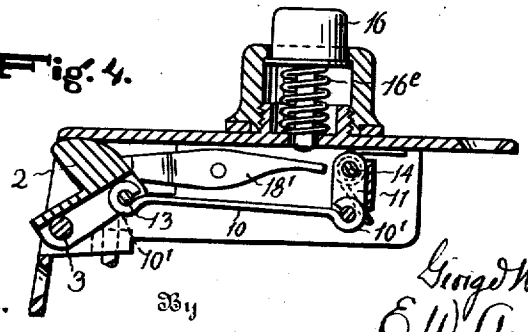


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

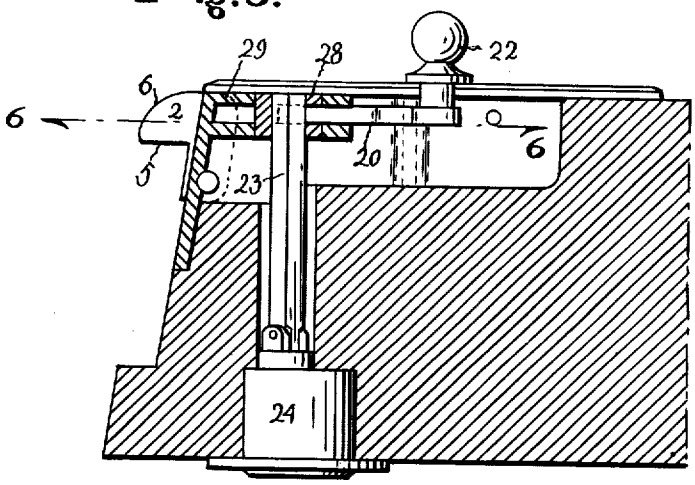


Fig. 6.

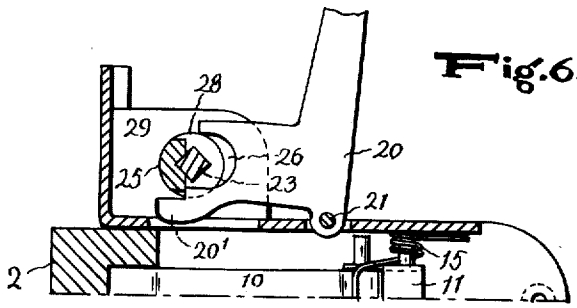
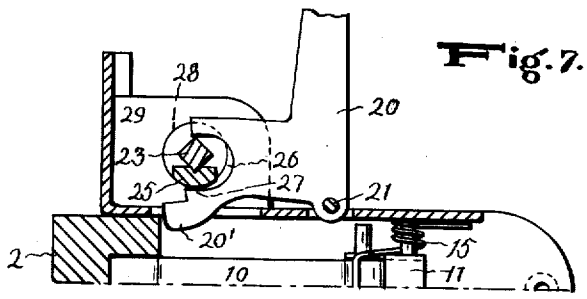


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE W. WELLS, OF AMESBURY, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WALKER-WELLS COMPANY, OF AMESBURY, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

DOOR LATCH AND LOCK.

1,242,750. Specification of Letters Patent. Patented Oct. 9, 1917.

Application filed January 29, 1917. Serial No. 145,175.

To all whom it may concern:

Be it known that I, GEORGE W. WELLS, a citizen of the United States, resident of Amesbury, in the county of Essex and State of Massachusetts, have made a certain new and useful Invention in Door Latches and Locks, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a section of the invention, as applied, and taken on the line 1—1, Fig. 2, the bell crank lever and the lock stem being shown as in normal or unlocked positions.

Fig. 2 is a section on the line 2—2, Fig. 1.

Fig. 3 is a similar view, parts being omitted, and showing the toggle slightly bowed, as by operation of a push button.

Fig. 4 is a view similar to Fig. 3, and showing the latch bolt retracted.

Fig. 5 is a section on the line 5—5, Fig. 1.

Fig. 6 is a section on the line 6—6, Fig. 5, with the bell crank lever and lock stem in normal or unlocked positions, parts being broken away.

Fig. 7 is a similar view with the bell crank lever and lock stem in locked positions.

The invention has relation to door latches and locks, designed particularly for closed-body automobiles, and having in connection therewith hand-operated means for releasing the bolt and key-operated means for locking said bolt and door, the invention involving certain improvements upon the device of the Patent No. 1,184,498, dated May 23, 1916.

The invention consists in the novel construction and combinations of parts, as hereinafter set forth.

In the accompanying drawings, illustrating the invention, the numeral 2 designates the bolt, pivoted at one side thereof, at 3, to the door, and having an outwardly projecting portion provided with a flat face 5 and a beveled face 6, coöperating, in the projected position of said bolt, with a keeper spring 7 upon the door casing or jamb, said spring being usually of strap metal, laterally or inwardly movable, and having a flat face 8, normally engaging the flat face of the bolt, and a beveled face 9, adapted to engage the beveled face of the bolt when the open door is closed.

The bolt is held rigidly in projected position by normally alined toggle links or levers, 10 and 11, pivoted together at 12, the lever 10 being pivoted to the bolt at 13, at one side of the pivot 3, and the lever 11 being pivoted to the door at 14, a spring 15 serving to hold the bolt yieldably in projected position when the toggle is broken and to return the toggle levers to normal alined position when the open door is closed.

Preferably, the toggle lever 10 is longer than the lever 11, and made of strap metal, with an eye 10′ at each end thereof, the lever 11 being made with two parallel portions, spaced apart and having a transverse connection 11′, the spring 15 being coiled around the ends of the pivot 14, having stop engagement at its free ends against the door and at its middle portion passing in rear of the pivot 12, in engagement with the adjacent eye 10′ of the lever 10.

In order to initially break or bow the toggle, to release the bolt and enable it to be retracted by pressure of the door when opened, a push button 16 is arranged at the inner side of the door, said button having a shank 16′ engaging the joint of the toggle levers.

The push button may, as shown in Fig. 1 of the drawings, engage said joint through the medium of a lever 16^a, usually formed with a body portion fulcrumed at 16^b and having at one end a bent arm 16^c, with which the button has engagement, and at its other end a bent arm 16^d, engaging the toggle joint, enabling the push button to be located in a higher position upon the door than when the push button shank directly engages the toggle joint, as shown in Fig. 2. The toggle spring 15 acts to return the push button to normal position in all cases, but a coiled spring 16^e may be used as an auxiliary means for this purpose.

Upon the outside of the door a push button 17 is provided, having a long shank 18 extending through the door and having at its inner end operative engagement with an intermediately pivoted lever 18′, said lever at the free end of its work arm engaging the

joint of the toggle levers. The push button 17 is usually seated in a recess of a handle 19, upon the outside of the door.

To prevent actuation of the bolt and opening of the door, even though the push button is pressed, a bell crank lever 20 is fulcrumed at 21 and operable from the inside of the door by a handle 22, said lever having its arm 20^a provided with a lug or extension 20^b, arranged to be moved in rear of the bolt, as shown in Fig. 7 of the drawings, for the purpose stated.

In order to lock the door from the outside, a rotatable stem 23 is connected to the barrel of a lock 24, usually of the Yale type, the lock key being inserted and said stem rotated, thereby turning a locking element 25 working in a recess 26 of the lever 20 and engaging an edge wall 27 of said recess, to depress the arm 20^a of said lever and the extension 20^b thereof into locking engagement with the bolt 2. In unlocking from the outside, the key is turned reversely and the element 25 engaged with the opposite edge wall 27′ of said recess, to raise the arm 20^a of the lever and the extension 20^b from locking engagement with the bolt.

The locking element 25 forms part of a rotatable member 28, having bearings within a frame 29, fastened to the door, said member having fast connection and turning with the stem 23.

Either of the push buttons being pressed inwardly, the toggle will be slightly broken or bowed, as shown in Fig. 3, the movement of the bolt inwardly being also slight and the door being retained in latched position, with the bolt in engagement with its keeper.

The door being moved to open, and the flat face of the keeper engaging the flat face of the bolt, the bolt will be pressed inwardly or retracted within its casing and the toggle completely bowed, as shown in Fig. 4. The door being opened, the toggle levers and the bolt will at once be returned to normal position by action of the spring 15.

The door being now closed, the beveled face of the keeper spring will contact with the beveled face of the bolt, said spring moving laterally or inwardly in the slot of the door to the rear of the bolt, reëngaging the flat faces of bolt and keeper.

I claim:

1. In a door lock, a bolt, means including a movable element for normally holding said bolt rigidly in projected position, means for moving said element to released position, a spring coöperating with and directly engaging said element for holding the bolt yieldably in projected position when said element is released and for returning said element to normal position, a member movable into the path of said bolt to prevent the retraction thereof, and key-operated means for actuating said member.

2. In a door lock, a bolt, means for holding said bolt rigidly in projected position, including normally alined toggle levers, hand-operated means for bowing said toggle levers, a spring coöperating with said toggle levers for holding said bolt yieldably in projected position when said toggle levers are bowed and for returning the toggle levers to alined position, a member movable into the path of said bolt to prevent the retraction thereof, and key-operated means for actuating said member.

3. In a door lock, a bolt, means for holding said bolt rigidly in projected position, including normally alined toggle levers, hand-operated means for bowing said toggle levers, a spring coöperating with said toggle levers for holding said bolt yieldably in projected position when said toggle levers are bowed and for returning the toggle levers to alined position, a reciprocatory member movable into the path of said bolt to prevent its retraction, and rotary key-operated means for actuating said member.

4. In a door lock, a bolt, means for holding said bolt rigidly in projected position, including normally alined toggle levers, hand-operated means for bowing said toggle levers, a spring coöperating with said toggle levers for holding said bolt yieldably in projected position when said toggle levers are bowed and for returning the toggle levers to alined position, a lever movable into the path of said bolt to prevent its retraction and having a recess, and rotary key-operated means for actuating said lever having an element movable within said recess to engage a wall thereof.

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

GEORGE W. WELLS.

Witnesses:
LENA J. BROWN,
DAVID J. CORMACK.