No. 881,614. PATENTED MAR. 10, 1908.

F. P. PFLEGHAR, JR.

DOOR LOCK.

APPLICATION FILED MAY 22, 1906.

Fig. 1.

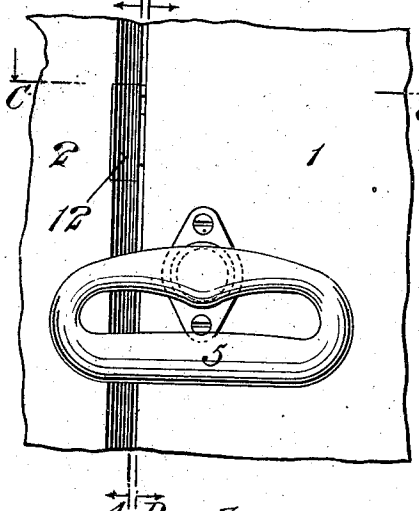



Fig. 2.

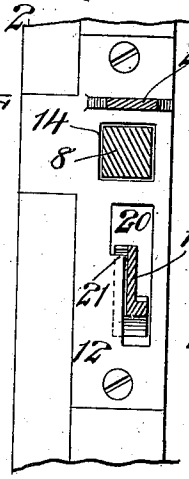
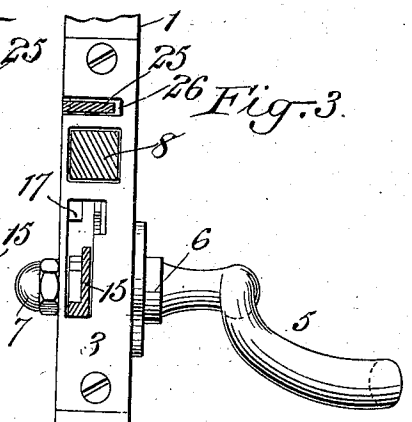



Fig. 3.



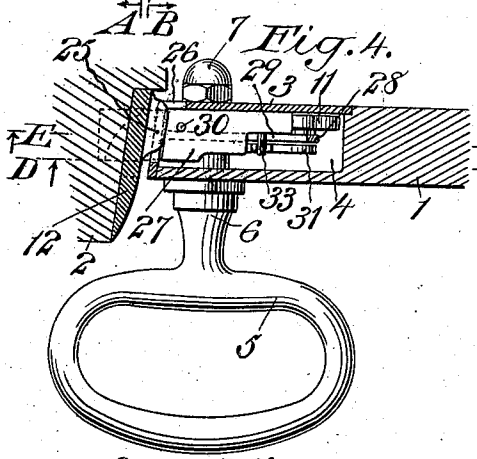




Fig. 4.

Fig. 5.

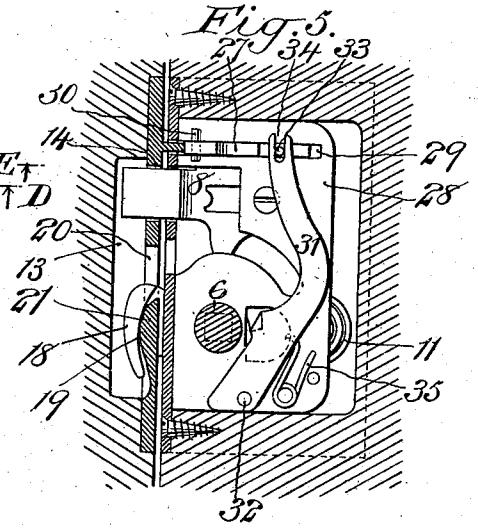



Fig. 6.

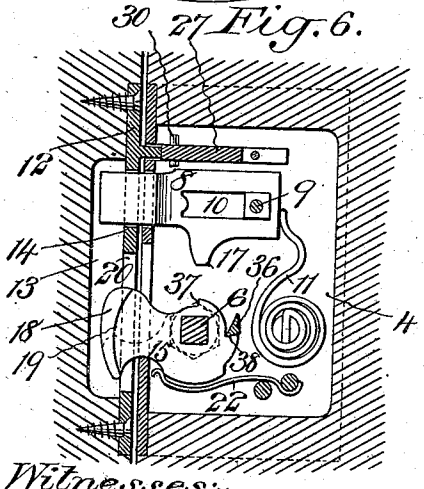
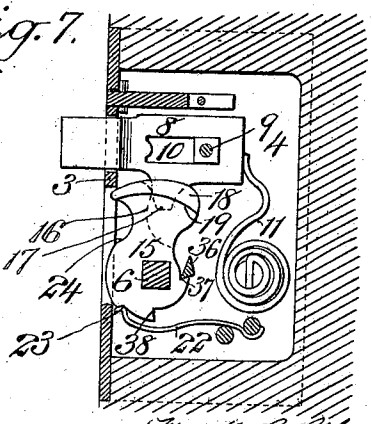



Fig. 7.




Witnesses:
F. George Barry
Henry Thieme

Inventor: Frank P. Pfleghar Jr.
by attorneys
Brownell & Brownell

THE NORRIS PETERS CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

FRANK P. PFLEGHAR, JR., OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO F. P. PFLEGHAR & SON, OF NEW HAVEN, CONNECTICUT, A FIRM.

## DOOR-LOCK.

No. 881,614. Specification of Letters Patent. Patented March 10, 1908.

Application filed May 22, 1906. Serial No. 318,119.

*To all whom it may concern:*

Be it known that I, FRANK P. PFLEGHAR, Jr., a citizen of the United States, and resident of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Door-Locks, of which the following is a specification.

In door locks in which the locking bolt is thrown into and out of its locking position by the latch bolt handle, it frequently happens that the locking bolt is thrown out and left out while the door is open, and when the door is swung to close it the projecting end of the locking bolt will strike the door jamb, and deface it.

The object of my present invention is to provide means for locking the locking bolt in its withdrawn position whenever the door is opened, the said means being so constructed and arranged that the locking bolt cannot be thrown outwardly while the door is open but will only be released when the door is in its closed position.

My improved door lock is especially well adapted for use in connection with automobile doors where there is a constant jarring strain on the doors tending to cause them to shake loose and rattle.

A practical embodiment of my invention is represented in the accompanying drawings, in which

Figure 1 is a face view of a portion of a door and its jamb adjacent to the door lock, Fig. 2 is a section taken in the plane of the line A—A of Fig. 1 looking in the direction of the arrows, Fig. 3 is a section taken in the plane of the line B—B of Fig. 1, looking in the direction of the arrows, Fig. 4 is a section taken in the plane of the line C—C of Fig. 1 looking in the direction of the arrows, Fig. 5 is a vertical section taken in the plane of the line D—D of Fig. 4 looking in the direction of the arrows, Fig. 6 is a vertical section taken in the plane of the line E—E of Fig. 4, looking in the direction of the arrows, and Fig. 7 is a section through the door taken in the same plane as Fig. 6, with the locking bolt locked in its withdrawn position.

The door is denoted by 1 and its jamb by 2. The lock casing is denoted by 3 and it is arranged to form the inner and front walls of the recess 4 in the free edge of the door for the reception of the operating parts of the lock. The latch bolt handle is denoted by 5 and its shank which extends through the door by 6. This shank is provided with the usual fastening nut 7 on the inner side of the door.

The latch bolt is denoted by 8 and it is guided in its inner and sliding movements through the front wall of the casing 3 by the usual pin and slot connection 9 and 10. The spring 11 tends to throw the latch bolt to the limit of its outward movement.

The striker plate which is secured to the door jamb is denoted by 12 and the jamb is provided with the usual recess 13 immediately to the rear of the striker plate. This striker plate 12 is provided with the hole 14 for receiving the free end of the latch bolt therethrough when the door is closed. The locking bolt is denoted by 15 and it is keyed to an angular portion of the shank 6 of the latch handle so as to rock therewith. This locking bolt is provided on one face with a shoulder 16 which is fitted to engage a lug 17 depending from the latch bolt 8 when the locking bolt 15 is withdrawn from its extended position to a position within the plane of the door.

The free end of the locking bolt 15 is provided with a laterally extended flange 18 which is provided with an inner face cam 19.

The striker plate 12 is provided with a hole 20 for the insertion therethrough of the locking bolt when the door is closed. One of the vertical walls of the hole 20 is provided with a shoulder portion 21 which is engaged by the cam face 19 of the flange 18 of the locking bolt, the shape of the face 19 being such that as the bolt is rocked toward the limit of its extended movement the door will be drawn bodily toward the door jamb thus holding the door against rattling when submitted to a jarring strain.

The locking bolt 15 is provided with a spring 22 arranged to yieldingly hold the locking bolt in its extended and withdrawn positions by providing the locking bolt with two shoulders 23, 24, in its periphery arranged at the proper places to receive the free end of the spring 22 when the bolt is in its said extended and withdrawn positions.

The means for locking the locking bolt in its withdrawn position when the door is open is constructed and arranged as follows:—The striker plate is provided with a transversely arranged lug 25 arranged in position to enter a transverse slot 26 in the casing above the latch bolt when the door is closed. A slide

27 is fitted to reciprocate horizontally in the casing and it is guided in its movements by the outer plate of the casing and the inner plate 28 of the casing, which inner plate is provided with an elongated slot 29 in which the slide 27 is located. Cross pins 30 in the slide 27 serve to limit the outward movement of the slide when its outer end is located in the slot 26 in position to be engaged by the lug 25 as the door is closed. A vertically disposed rocking arm 31 is pivoted at 32 to the intermediate plate 28 of the casing, the free end of the said arm 31 having a pin and slot connection 33, 34, with the slide 27. A spring 35 is interposed between the intermediate plate 28 of the casing and the rocking arm 31 tending to hold the arm at the limit of its forward movement and thereby the slide 27 at the limit of its forward movement. This rocking arm 31 is provided with a laterally extended lug 36 which is projected into the plane of the locking bolt 15 and is fitted to engage a shoulder 37 on the periphery of the locking bolt when the bolt is in its withdrawn position and the arm and slide are in their forward position. This lug 36 on the rocking arm 31 is also arranged to engage a shoulder 38 on the periphery of the locking bolt when the locking bolt is in its extended position thus serving as a stop for the bolt when pressure is applied thereto by the spring 22 for yieldingly holding the bolt in said extended position.

In operation, supposing the parts to be in the position which they assume when the door is open as shown in Fig. 7, it will be seen that the locking bolt is absolutely held against being thrown into an extended position by the engagement of the lug 36 of the arm 31 with the shoulder 37 on the locking bolt. As the door is closed, it will be seen that the lug 25 on the striker plate 12 will enter the slot 26 and move the slide 27 rearwardly. This, in turn, will rock the arm 31 rearwardly a sufficient distance to remove its lug 36 from its engagement with the shoulder 37 on the locking bolt. A turn of the latch bolt handle will then throw the locking bolt 15 into its extended position, causing its flange 18 to be brought into snug engagement with the shouldered portion 21 of the striker plate adjacent to the hole 20. When it is desired to open the door, the locking bolt will first be withdrawn by turning the latch bolt handle. After the locking bolt has been withdrawn a further turning movement of the handle will withdraw the latch bolt from its hole 14 in the striker plate by the engagement of the shoulder 16 on the locking bolt with the downwardly extended lug 17 on the latch bolt. The moment the door is opened the slide 27 and thereby the rocking arm 31 are permitted to move to the limit of their forward movements thus bringing the lug 36 of the rocking arm into position to engage the shoulder 37 on the locking bolt. This will, as hereinabove described absolutely prevent the throwing of the bolt into its extended position until the door is again closed. This arrangement absolutely prevents the closing of the door with the lock in its extended position.

What I claim is:—

1. In a door lock, a latch bolt, a latch bolt handle, its shank, a locking bolt directly fixed thereto and arranged to directly engage the latch bolt, a shoulder on the locking bolt and a rocking arm having a lug arranged to be brought into and out of engagement with said shoulder on the locking bolt whereby the bolt is locked in its withdrawn position by the outward swinging movement of the door and released by the inward swinging movement of the door.

2. In a door lock, a latch bolt, a latch bolt handle, its shank, a locking bolt directly fixed thereto and arranged to directly engage the latch bolt, a shoulder on the locking bolt and a rocking arm having a lug arranged to be brought into and out of engagement with said shoulder on the locking bolt whereby the bolt is locked in its withdrawn position by the outward swinging movement of the door and released by the inward swinging movement of the door, and a slide engaging the arm for controlling its movements.

3. In a door lock, a latch bolt, a latch bolt handle, its shank, a locking bolt directly fixed thereto and arranged to directly engage the latch bolt, a shoulder on the locking bolt and a rocking arm having a lug arranged to be brought into and out of engagement with said shoulder on the locking bolt whereby the bolt is locked in its withdrawn position by the outward swinging movement of the door and released by the inward swinging movement of the door, a slide engaging the arm for controlling its movements and a lug on the door jamb arranged to control the movements of the slide.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 19th day of May, 1906.

FRANK P. PFLEGHAR, Jr.

Witnesses:
FRANCES I. MARTIN,
MAY D. CONATY.