F. C. DAVIS.

LOCK.

APPLICATION FILED OCT. 25, 1915.

1,177,495.

Patented Mar. 28, 1916.

2 SHEETS—SHEET 1.

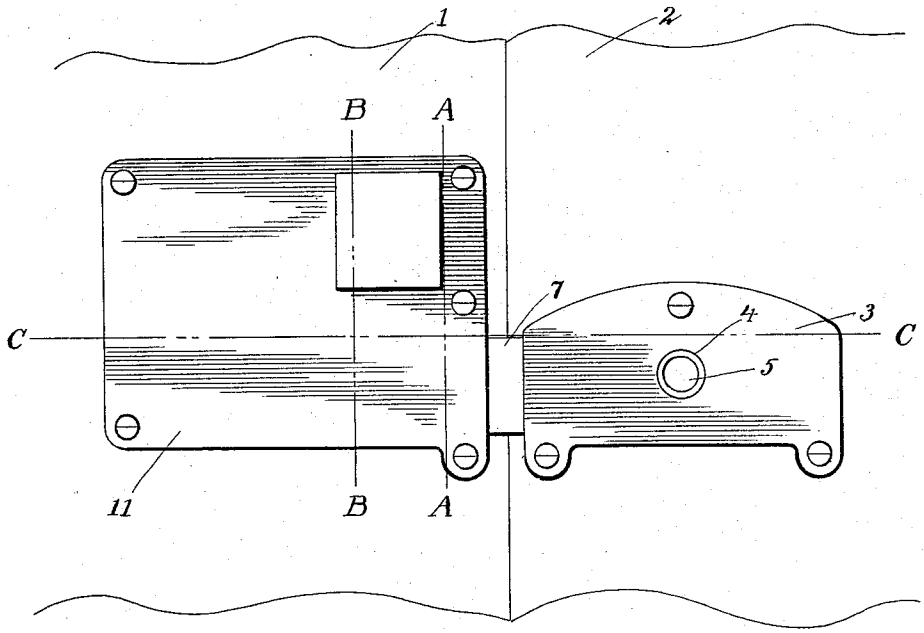


Fig. 1.

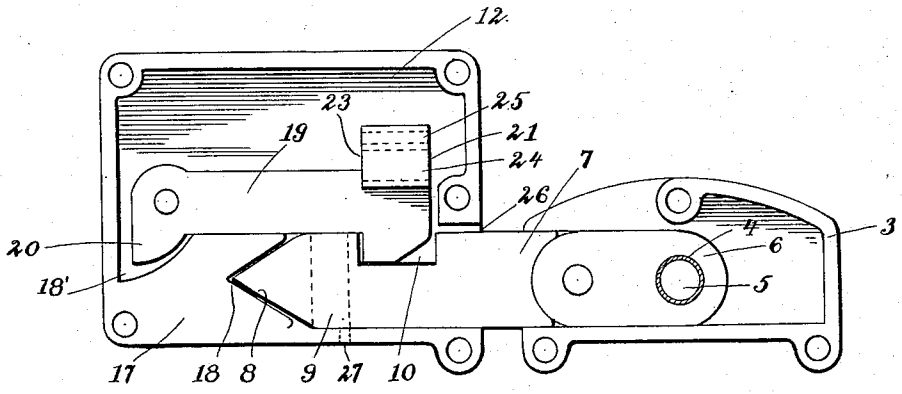


Fig. 2.

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2 SHEETS—SHEET 2.

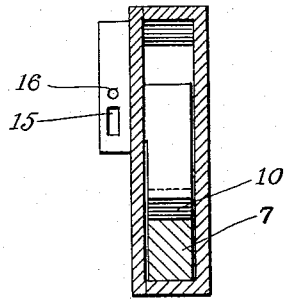


Fig. 3.

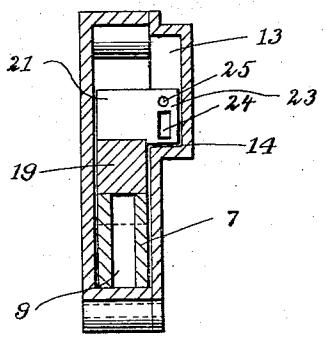


Fig. 4.

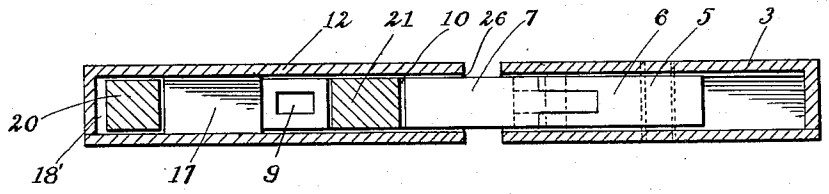


Fig. 5.

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UNITED STATES PATENT OFFICE.

FREDRICK C. DAVIS, OF GALLUP, NEW MEXICO.

LOCK.

1,177,495. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed October 25, 1915. Serial No. 57,866.

To all whom it may concern:

Be it known that I, FREDRICK C. DAVIS, a citizen of the United States, residing at Gallup, in the county of McKinley and State of New Mexico, have invented new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks for sliding or rolling doors, and has particular application to a sealed lock.

The principal object of my invention is to provide a device of this character which will be automatically locked upon closing the door and which may be sealed in locked position whereby the lock may not be opened without breaking the seal.

Another object of my invention is to provide a device of this character which will be simple in construction, strong, durable and efficient and which may be manufactured at a nominal cost.

With the above and other objects in view, the invention consists in the features of construction and the combination and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation showing my device attached to a door; Fig. 2 is a side elevation showing the front section of the lock casing removed; Fig. 3 is a vertical section taken on the line A—A of Fig. 1; Fig. 4 is a vertical section taken on the line B—B of Fig. 1; and Fig. 5 is a longitudinal section taken on the line C—C of Fig. 1.

Referring to the drawings in detail, 1 designates a movable element, which in the present instance is the sliding door of a car, while 2 designates a stationary element or the side of the car. Secured to the stationary element at its lower edge is a bolt casing 3 which is substantially U-shaped in cross section, the parallel arms being provided with alined openings 4 which receive a hollow rivet 5. Pivotally mounted upon the rivet 5, between the parallel arms, is one end of a link 6. Pivotally secured to the opposite end of the link is one end of the improved form of locking bolt 7, the opposite end of the locking bolt 7 having the edges thereof inclined toward each other, as at 8, to provide a substantially V-shaped end. Adjacent the inclined edges of the locking bolt is a vertically arranged opening 9 which is elongated and substantially rectangular in cross section. Rearwardly of the opening 9 is a recess 10 which is formed on the upper edge of the locking bolt and adapted to receive a gravity catch, as will be hereinafter described. Secured to the movable member in any suitable manner is my improved form of lock casing which consists of front and rear sections 11 and 12 respectively. The front section 11 is secured to the rear section in any suitable manner and is provided with a recess 13 adjacent the upper edge thereof and front end of the casing, which is formed so as to provide a shoulder 14. The front end wall of the recess is provided with a rectangular orifice 15 adjacent the lower end thereof, while directly above the orifice is a circular opening 16 which is preferably arranged in vertical alinement with the orifice. The purpose of these openings will appear as the invention is more fully understood. The rear section 12 of the casing is provided with an integral portion 17 which extends into the casing and which is formed on the rear end thereof. This extension is provided at the forward end with a substantially V-shaped recess 18 which is adapted to receive the V-shaped extremity of the locking bolt when the latter is in locked position. The upper edge of the integral portion is cut away, as at 18′, so as to accommodate the pivoted end of the gravity catch 19, the catch having one end thereof pivotally mounted adjacent the rear end of the casing, said end being provided with a projection 20 which is adapted to work within the cut away portion 18′. It will be noted that the upper edge of the integral portion 17 is adapted to support the gravity catch in horizontal position and properly position the catch when in locking engagement with the locking bolt. This gravity catch extends longitudinally of the casing and terminates at a point adjacent the front end of the casing, the free end being provided with a head 21. The lower edge of the head is inclined from the front wall to the rear wall, as at 22, to permit the insertion of the locking bolt into the casing when in locked position. The upper end of the head 21 is provided with an offset portion 23 which is adapted

to work within the recess 13 and to engage the shoulder 14 when in active position. This offset portion 23 is provided with a rectangular opening 24 and a circular opening 25 which are adapted to register with the respective openings 15 and 16 formed in the end wall of the recess when the catch is lying upon the shoulder. The casing 3 is provided at the forward end with an opening 26 adjacent the lower edge thereof and which permits the insertion of the locking bolt into the casing 12.

It will be seen from the foregoing construction that when it is desired to lock the movable element to the stationary element, the locking bolt is swung to horizontal position, whereupon it is inserted into the casing through the opening 26, whereby one of the inclined edges of the bolt will engage the inclined edge 22 of the head and force the catch upwardly, thus permitting the locking bolt to be moved forwardly so as to cause the V-shaped end to lie within the recess 18 of the integral portion 17. The converging side walls of the recessed portion serve to act as a positive guide for the tapered end of the bolt and properly position the latter within the casing so as to dispose the recess formed therein in proper position with relation to the head of the gravity catch. Owing to the recessed portion 10 in the locking bolt, the head of the gravity catch will fall within the recess after the locking bolt has completed its inward movement. As previously described, when the gravity catch is in active position the offset portion 23 of the head will lie upon the shoulder 14 of the recess so as to cause the openings formed in the offset portion to register with the openings in the end wall of the recess. A sealing element is then trained through certain of the openings in the end wall and through the openings in the head so that the gravity catch will be locked in active position and the consequent removing of the locking bolt will be prevented without the breaking of the seal. In the present instance I have shown two forms of openings to accommodate sealing elements of different configurations, the circular opening being adapted to be used for wires while the other is used for the metal band seal. To release the locking bolt after the seal has been removed I have provided the lower edge of the casing with a vertical opening 27 which is adapted to register with the opening 9 in the locking bolt when the latter is in locked position, whereby a tool of any description may be inserted into the casing and by forcing the tool upwardly the catch will be lifted to relieve the locking bolt of the influence of the same. The catch being in elevated position the bolt is then moved outwardly to cause the recess to pass beyond the head of the catch. It is to be understood that the tool is still held within the casing, having made the opening 9 elongated to permit the outward movement of the bolt so as to release itself from the influence of the catch, whereby the tool may be withdrawn and the bolt released from the lock.

It will be noted that when the locking bolt is in horizontal position the under side of the casing limits the downward movement of the same and positions it properly with respect to the opening formed in the casing mounted upon the movable element. When the locking bolt is removed from the casing it may be swung upwardly and rearwardly so that the same will not project beyond the surface of the stationary element.

It is thought from the foregoing description, taken in connection with the accompanying drawings, that the construction and operation of my invention will be readily understood by those skilled in the art without further explanation and it will be further understood that slight changes may be made in the size, proportion and shape and other minor details of construction without departing from the spirit and scope of the claims appended hereto.

Having thus described my invention, I claim:

1. In combination, a movable element and a stationary element providing an abutment for the movable element, a swinging bolt carried by one of said elements, said bolt having a recess formed therein and a vertical opening extending through the same, a casing secured to the other member, a gravity catch mounted in said casing, a head formed on said catch and adapted to lie within said recess, said casing having an opening formed therein which is adapted to register with the vertical opening in said bolt when the latter is in locked position whereby access may be had to the catch to remove the head from locking engagement with the bolt, and means for sealing the catch in engagement with the bolt.

2. In combination, a movable element and a stationary element providing an abutment for the movable element, a swinging bolt carried by one of said elements, said bolt having a recess formed therein and a vertical opening extending through the same, a casing secured to the other member, a gravity catch mounted in said casing, a head formed on said catch and adapted to lie within said recess, said casing having an opening formed therein which is adapted to register with the vertical opening in said bolt when the latter is in locked position whereby access may be had to the catch to remove the head from locking engagement with the bolt.

3. In combination, a movable element and a stationary element providing an abutment

for the movable element, of a swinging bolt carried by one of said elements, a casing formed on the other element, a recess formed in said casing to provide a shoulder, a pivoted catch mounted in said casing and adapted to coact with the bolt, a head formed on said catch, a projection formed on said head and adapted to engage said shoulder when the catch is in active position, and means engaging said projection and the walls of said recess whereby the catch will be sealed in active position.

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

FREDRICK C. DAVIS.

Witnesses:
ALFRED RUIZ,
E. A. MARTIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."