

C. E. P. GABRIEL.
 LOCK FOR SLIDING DOORS.
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1,144,537.

Patented June 29, 1915.

Fig. 1.

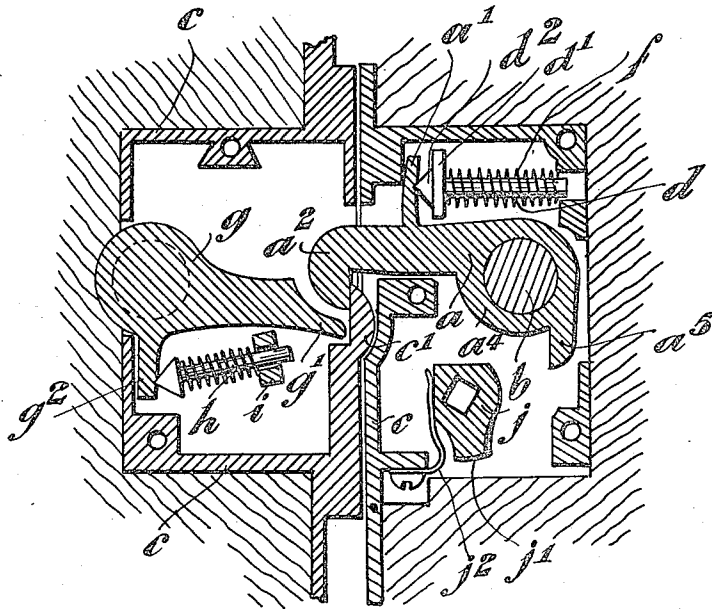
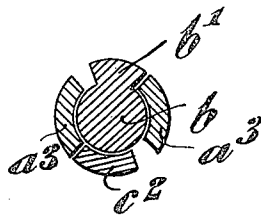


Fig. 2.



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UNITED STATES PATENT OFFICE.

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LOCK FOR SLIDING DOORS.

1,144,537.

Specification of Letters Patent.

Patented June 29, 1915.

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To all whom it may concern:

Be it known that I, CHARLES EDWARD PERCY GABRIEL, a subject of the Kingdom of Great Britain, residing at 4 and 5 A. B. Row, Birmingham, in the county of Warwick, England, brassfounder, have invented certain new and useful Improvements in or Relating to Locks for Sliding Doors, Shutters, Gates, and the like, of which the following is a specification.

The class of lock to which this invention has relation is that in which a locking catch is controlled by means of a spiral spring surrounding a spindle or plunger so as to automatically effect the locking of the door or doors upon the latter being closed, and against the resistance of which spring the catch may be readily displaced for unlocking the door or doors.

According to the present invention means are provided whereby the spindle or plunger with the surrounding spring may be readily removed from the lock casing or replaced as and when desired without necessitating the removal of the lock or operating handle or the displacement of the lock mechanism. For this purpose an aperture is provided in the cover plate of the lock casing which is adapted to be closed by a suitable removable plate member, the provision of the said opening enabling the spring member and spindle controlling the locking catch to be readily removed or replaced at will without disturbing the other parts of the lock or casing.

Furthermore, the invention also includes means whereby jarring or wrenching of the hand of the person closing the door or doors is entirely obviated by so mounting the locking catch upon its pivot as to be capable of a certain degree of movement in relation to said pivot and permit a displacement of the catch sufficient to pass into its locking position without causing any movement of the pivot or operating handle attached to or formed therewith.

In order that this invention may be clearly understood and readily carried into practice, reference may be had to the appended explanatory sheet of drawings, upon which—

Figure 1 is a vertical section through a lock constructed in accordance with the present invention. Fig. 2 is a detail sectional view illustrating the method of mounting the locking catch on its pivot.

In a convenient embodiment of the present invention the locking catch *a* is mounted upon a pivot *b* which is rotatably fixed within the one half or part of the lock casing, which lock casing is formed by means of metallic frame members *c* disposed within recesses in the doors at their engaging edges or parts and secured in position by means of side plates (not shown), screwed or otherwise fixed upon the front and rear faces of the doors, and attached by screws to said casing members *c*.

Within that part of the lock casing *c* containing the locking catch *a* and advantageously above same, a plunger or like member *d* is disposed one extremity of which is adapted to have a sliding engagement within an aperture provided in the side of the casing *c*, and the other extremity is advantageously in the form of a flat rectangular or like plate *d'* having a conical, pointed, or like projection *d''* thereon adapted to engage with and/or bed into a projecting arm, lug, or web *a'* upon the upper side of the catch *a*. A suitable coiled spring *f* surrounds the plunger *d* and bears on the one hand against the inner face of the casing *c* and on the other hand against the flat enlargement *d'* so as to press the plunger firmly against the arm *a'* on the catch *a* and retain said catch by means of a hook-like extremity *a''* of same in engagement with an upwardly projecting portion *c'* of that part of the lock casing *c* provided on the other door or shutter, or on a side pillar member or the like.

To release the locking catch *a* from its engagement with the part *c'* the hook-like extremity *a''* of said catch *a* is raised by rotating the pivot *b* on which the catch is mounted, on which pivot one or more suitable radial projections *b'*, advantageously of segmental formation, are disposed between and adapted to engage with similar projections *a'''* on the catch socket *a'* so as to turn said socket and raise the catch when the pivot *b* is rotated.

A suitable space is left between the projection *b'* on the pivot *b* and the segmental portions *a'''* so as to allow the catch socket *a'* to rotate freely to a certain degree without turning or moving the handle attached to the pivot. By this means, when a person is gripping the handle and locking the door or doors by slamming same no jarring or wrenching of the hand or wrist is

experienced when the locking catch passes into locking engagement, as the handle is not rotated or turned.

A further segmental or like projection c^2 may be furnished rigid with the rear plate of the casing c and disposed intermediate the projections a^3 on the catch socket a^4 .

To provide further means for releasing or unlocking the latch a an arm or like member g may if desired be pivotally mounted at its one extremity within the second part of the casing c , the pivot or pivots of which extend out through the casing and are adapted to receive a handle for effecting the turning of said arm g . The free extremity g^1 of the arm is so formed as to engage with the hook-like extremity a^2 of the locking catch a so as to lift said extremity out of engagement with the part c^1 and effect the release of the locking catch when the arm g is turned. If desired, the arm g may also be furnished with a downwardly projecting lug or member g^2 at its pivoted extremity, against the inner face of which a spring-controlled plunger member h may be pressed, which plunger may be mounted and arranged in a somewhat similar manner to that before described with reference to the plunger d with the exception that the plunger h may have a sliding movement within an aperture provided in a lug or like projection i of the casing c . The arm g with spring control may however be dispensed with if desired, and the first described means for opening only be provided.

A pivotally mounted member j may be provided beneath the latch a having a projecting lug or part j^1 adapted to be held either in or out of engagement with a lug or projection a^5 on the locking catch socket a^4 by means of a spring j^2 engaging with flat faces on said member j , said member when in engagement effectively locking the catch a in its locked position. The member j may be rotated by a handle or the like from the exterior of the lock casing.

The two parts of the lock casing c are advantageously in the form of closed boxes, a slot or aperture only being left in the engaging sides of each box for the passage and movement of the locking catch a . In this manner the casings are practically dust-proof.

The engaging side edge of one lock casing part is advantageously furnished with a vertical rib of substantially inverted U-section which is adapted to be accommodated by a correspondingly shaped groove in the engaging side edge of the opposite or other casing part, when the door or doors is or are locked.

At that part of one of the lock cover

plates (not shown) immediately over the spring-controlled plunger d a small opening is provided, which opening is adapted to be closed by a small cover plate (also not shown) screwed or otherwise fixed to the larger plate. By this provision should it be desired to remove the plunger d and spring f for repair, renewal or other reasons, all that is necessary is to remove the small cover plate, press the plunger out of engagement with the lug a^1 of the locking catch, and withdraw same through the aperture in the casing cover. The rectangular enlargement d^1 on the plunger d may be extended on one side for facilitating the gripping of same during its removal.

The invention as before described is equally applicable to either double sliding doors or gates adapted to be drawn toward each other for locking, or to single sliding doors or gates adapted to be locked to a fixed pillar or other member.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A lock for sliding doors, shutters, gates and the like, comprising a casing, a locking catch within said casing, a spindle or plunger above said catch, a spiral spring surrounding said spindle for controlling said catch, said spindle and spring adapted to be readily removed from the casing, substantially as described.

2. A lock for sliding doors, shutters, gates and the like comprising a casing having a cover plate provided with an aperture, a locking catch within said casing, a plate member for closing said aperture, and a spring member for controlling the locking catch adapted to be readily removed through said aperture, substantially as described.

3. A lock for sliding doors, shutters, and the like comprising in combination with the casing thereof, a locking catch within said casing, a pivot for said catch, a spring member for controlling the locking catch, radial projections upon said pivot, radial projections upon said catch adapted to engage with said first named projections for effecting a turning movement of said catch against its controlling spring for unlocking or releasing the same, spring controlled means for controlling said catch and means for removing and exchanging said spring controlled means from the casing.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHARLES EDWARD PERCY GABRIEL.

Witnesses:

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ARTHUR H. BROWN.