

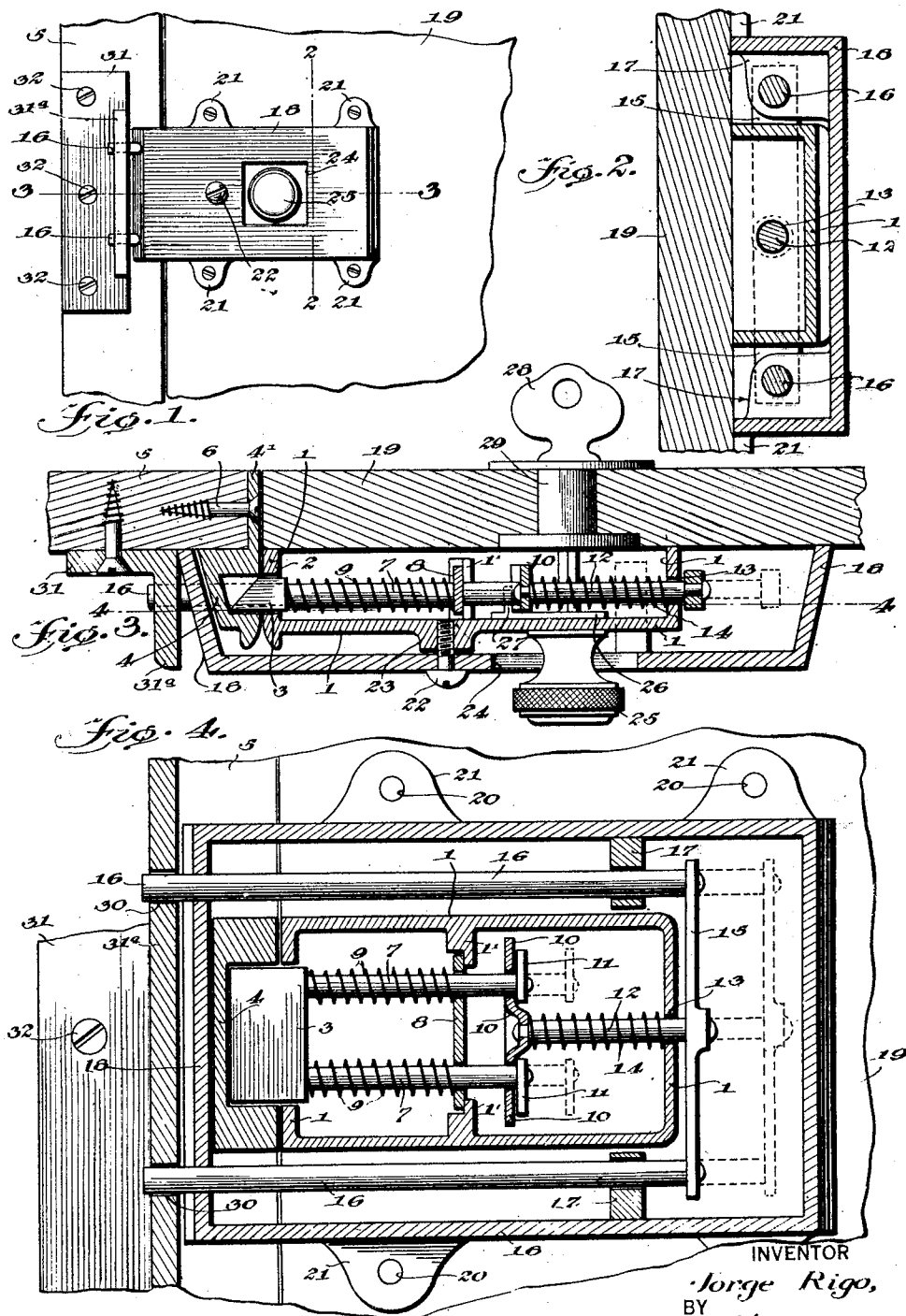
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LOCK

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LOCK.

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This invention relates to locks and is more particularly concerned with locks employing spring pressed latch bolts, such as the so called "night latch", and aims to provide a protected lock of this type which is practically immune to forcing from the outside of its door while freely operable from the outside by a proper key.

The invention has as a further object the prevention of the lock being forced by a thin instrument inserted between the edge of the door and the latch or keeper plate and effective to operate the usual latch bolt. To effect this result, a feature of the invention consists in auxiliary locking means unaffected by the unauthorized and forced retraction of the latch bolt, but retracted substantially coincidentally therewith by means actuated by a proper key from the outside of the door.

These and other objects and features of the invention are more fully described in the following detailed description when read in connection with the accompanying drawings forming part thereof and in which:

Fig. 1 is a view in elevation of the inner face of a door with a "night latch" embodying the present invention applied thereto.

Fig. 2 is a vertical section on an enlarged scale through the door and lock case taken on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal section also on an enlarged scale taken on the line 3—3 of Fig. 1.

Fig. 4 is a vertical section on an enlarged scale taken on the line 4—4 of Fig. 3.

Referring to the drawings; the metal lock case 1 of a night latch, for example, is mounted on the inner face of the door with its face plate at one edge alined with the door edge and apertured at 2 to receive and guide the head 3 of the latch bolt which is projected normally to seat in the alined socket of a latch or keeper plate 4 which has a thin flange 4' mortised in the jamb 5 of the door casing and secured by appropriate means such as screws 6.

The twin shanks 7 of the latch bolt are guided for reciprocating movement inside the lock case 1 through guide openings in a guide plate 8 extending vertically of the interior of the lock case and held against the edges of lugs 1' projecting from the top and bottom of the lock case by means of coiled springs 9 encircling the twin shanks 7 of the latch bolt and tensioned against its head 3 and the plate 8. These springs normally tend to project

the head 3 of the latch bolt outwardly in the recess of the latch plate 4 to hold the door latched.

The outer ends of the shanks 7 are rigidly secured to the head 3. Their inner ends extend through the guide plate 8 and through alined openings in a latch retracting yoke 10 and are held against movement away from the yoke in the direction of the door jamb by stops 11 screwed to their inner ends. The yoke 10 is carried at the outer end of a plunger 12 which extends inwardly and through an opening 13 in the inner edge of the lock case 1 and is secured to a cross-head 15. A coiled spring 14 encircling the plunger between the yoke and the inner face of the lock case normally holds the yoke 10 and cross-head 15 moved toward the door jamb as shown in full lines in Fig. 4 of the drawings.

The cross head 15 extends beyond the top and bottom edges of the lock case and carries supplemental latch mechanism linked with the main latch bolt 3 through the yoke 10, plunger 12 and the cross head. This latch mechanism is carried by an outer lock case 18 which, like the case 1, is open faced and fully encloses the first or primary latch mechanism including its latch plate 4 at the inside face of the door and is attached to and supports and maintains the latch case 1 in position on the door. This is accomplished by means of an attaching screw 22 on the outer lock case 18 which enters in the threaded bore of a boss 23 on the outer face of the inner lock case 1 and also by the connection of the inner case 1 through plunger 14 and cross head 15 with the outer lock case. This connection is as follows—at the top and bottom of the outer lock case, its interior is formed with oppositely disposed lugs 17 (see Fig. 4) and its end or face plate which overlies and encloses the latch plate 4 of the primary bolt mechanism is formed with alined guide openings above and below the latch plate 4. Twin latch bolts 16 in the form of elongated rods are guided through these alined openings in the end of casing 18 and in the lugs 17 and are attached at their inner ends to the cross head 15. The action of coiled spring 12 against yoke 10 normally tends to project these supplemental latch bolts toward the jamb of the door. A latching plate 31 is secured as by screws 32 to the inside face of the door jamb adjacent to the edge of the latch end of case 18 and has a

flange 31^a extending outwardly from the jamb in line with the latch bolts 16. This flange has apertures 30 therein alined with and receiving the ends of the bolts 16 and acts
5 as the latch or keeper plate for the bolts 16.

The connected inner and outer lock cases 1 and 18 are secured to the inside face of the door 19 by means of ears 21 integral with and extending from the edge of the lock case 18
10 abutting said door, these ears having openings 20 therein through which suitable screws may be driven into the door.

Control and coincident retraction of the primary and auxiliary latch bolts is effected
15 from the inside of the door by a thumb-turn 25 journaled at its inner end in the casing 1 with its outer end projecting out through an opening 24 in the outer enclosing case 18. The usual roll-back 26 (Fig. 3) is connected
20 to the inner end of the thumb-turn 25 and has an offset roll-back arm 27 positioned to engage against the yoke 10 to retract both primary and auxiliary bolts when the thumb turn 25 is turned to the right or clockwise
25 as viewed in Fig. 3.

Both the primary and auxiliary latch bolts may be retracted from the outside of the door through the usual cylinder lock mechanism 29 inserted through a bore formed
30 through the door in alinement with the thumb-turn 25 and having the usual spindle connection with the roll-back 26. Actuation of this spindle through a proper key 28 is also effective to turn the roll-back to engage
35 its arm 27 with the yoke 10 and thereby effect the coincident retraction of the primary latch bolt 3 and the auxiliary twin latch bolts 16.

The connection of the twin shanks 7 of the primary latch bolt with the yoke 10 is such
40 as to permit independent retraction of the primary latch bolt 3 when it is attempted to force the lock by means of a sharp instrument inserted between the door edge and
45 jamb and acting against the latch bolt. The auxiliary locking bolts 16, however, are not effected by this unauthorized forcing of the latch bolt 3 and the lock therefore cannot be "picked." It is to be noted that the aux-
50 iliary bolts 16 project beyond the junction line of the door edge and door jamb a substantial distance and that their projection and latching engagement with the latch plate 31 is at a point removed from the edge of the
55 door and fully protected by the end of the outer lock case 18 and by the latch or keeper plate 4 of the primary latch mechanism. The movement of the primary and auxiliary latch bolts to latching position is effected
60 through independently operated coil springs encircling the twin shanks 7 of the primary bolt and the central plunger 12 of the auxiliary bolt mechanism. Both sets of latch bolts are normally projected by their coil
65 springs in directions to engage and seat in

their keeper or latch plates 4 and 31 respectively. Operation of the roll-back 26 either through the thumb-turn 25 or through an authorized key 28 will move the roll-back
70 arm 27 against the face of the yoke 10 and in the continued movement of the thumb-turn will retract the yoke 10, thereby directly retracting the auxiliary latch bolts 16. Retracting movement of the yoke 10 will,
75 through the stop plates 11, likewise retract the twin shanks 7 and the head 3 of the primary latch bolt. The two bolt mechanisms therefore operate in unison when retracted from the inside of the door through a thumb
80 turn or by an authorized or proper key from the outside. As the latch bolt 3 is the only one accessible to a sharp instrument inserted in the edge of the door, it obviously is the one which could be forced back but its connection with the yoke 10 is separable when
85 a thief or other unauthorized person attempts to force the door by forcing back the latch bolt 3 so that even if this is successful, the twin auxiliary latch bolts 16 remain unaffected and continue latched and it is there-
90 fore impossible to force a door equipped with my improved lock mechanism from the outside.

It should also be noted that the separable overlapping connection afforded by the stops
95 11 on the ends of twin shanks 7 overlying the yoke 10 not only forms the safety feature and a rigid connection with the yoke when the latter is moved by key or thumb turn in bolt retracting direction, but that, being sepa-
100 rable, the connection permits independent projecting and keeper engaging movements of the latch bolts providing for inequalities of movement therebetween.

Having described my invention, what I
105 desire to secure by Letters Patent is:

1. In a lock, two separate latch bolts, and means of connection between said bolts key-operable from the exterior of the door coincidently to retract both latch bolts and manu-
110 ally operable similarly and coincidently to retract from the inside of the door.

2. In a lock, two separate latch bolts, key operable means for connecting and simultaneously retracting said bolts from the out-
115 side of the door, said means including a connection between said bolts separable by forced repression of one bolt.

3. In a lock, a primary latch bolt, key-operable means for retracting said bolt from the
120 outside of the door an auxiliary latch bolt, a separable connection between said latch bolts broken by forced repression of the primary latch bolt and joined for coincident retraction of both bolts by said key-operable
125 means from the outside of the door.

4. In a lock, an inner latch case housing a latch bolt, a latch plate for said bolt attached to the door jamb, an outer latch case inclosing said inner case and overlying said jamb
130

and latch plate, a second latch bolt mounted within the outer case and a latch plate therefor adapted to be mounted on the inside of the door jamb spaced from the jamb edge and the outer case and protected by the latter.

5. In a lock, a primary latch bolt, an auxiliary latch bolt having a yoke connection therewith separable by independent forced repression of the primary bolt but joined and operable by bolt retracting movement of the yoke to retract the auxiliary latch bolt and coincidentally to retract the primary latch bolt, and means key-operable from the exterior of the door for effecting bolt retracting movement of said yoke.

6. In a lock, a primary latch bolt, spaced auxiliary latch bolts enclosing said primary bolt between them and having a yoke connection therewith separable by independent forced repression of the primary bolt but joined with the primary bolt upon bolt retracting movement of the yoke itself to effect coincident retraction of the primary and auxiliary bolts, and means key-operable from the outside and manually operable from the inside of the door for effecting latch retracting movement of said yoke.

7. In a lock, an inner latch case, a latch bolt carried thereby, a jamb-mounted latch plate therefor, an outer latch case having its sides inclosing the inner case and overlying the jamb edge and latch plate, a second latch bolt carried by the outer case and spaced from the first latch bolt, a second latch plate for the second bolt mounted upon the jamb beyond the jamb edge and outer case and protected by the latter, and means of connection between the first and second latch bolts key-operable from the exterior of the door coincidentally to retract both latch bolts, said means including a connection between said bolts separable by forced repression of one bolt.

8. In a lock, a primary latch bolt and an auxiliary latch bolt, separate latch plates for said bolts arranged one adjacent to and protected by the other, and means of connection between said bolts key-operable from the exterior of the door coincidentally to retract both bolts, said means including a separable

connection broken by forced repression of one of said bolts.

9. In a lock, connected outer and inner latch cases, latch bolts housed in both inner and outer cases and a yoke connection between the outer and inner latch bolts effective physically to interconnect their latch cases.

10. In a lock, an inner lock case housing a latch bolt, a latch plate therefor an outer lock case housing a second latch bolt and completely overlying the first latch case and bolt, a latch plate for said second bolt, a separable connection between the two latch bolts, and means of connection between said inner and outer latch cases.

11. In a lock, two separate latch bolts, and means of connection between said bolts key-operable from the exterior of the door coincidentally to retract both latch bolts and manually operable from the inside of the door similarly and coincidentally to retract said bolts, said means including a connection separable and inoperative to retract both bolts upon forced repression of one bolt from the exterior of the door independently of said key.

12. In a lock, an inner latch case housing a latch bolt, an outer latch case inclosing said inner case, a second latch bolt mounted within said outer case in spaced relation to the first bolt, means connecting said bolts operable from the exterior of the door by an authorized key coincidentally to retract both of said bolts, said connecting means being separable by forced repression of one bolt.

13. In a lock, an inner latch case, a latch bolt carried thereby, an outer latch case having its sides inclosing the inner case, a second latch bolt carried by the outer case in spaced relation to the inner case latch bolt, jamb mounted detents to receive said bolts, and a yoke connecting said latch bolts and interconnecting their cases with key-operable means for actuating said yoke to retract both bolts, said yoke having a connection with one of said bolts separable in the direction of latch retracting movement upon forced repression of the aforesaid bolt to prevent forced repression of both of said bolts.

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