A. PRZELOMICE.

LOCK.

APPLICATION FILED JAN. 4, 1913.

1,067,135.

Patented July 8, 1913.

2 SHEETS—SHEET 1.

Fig. 1

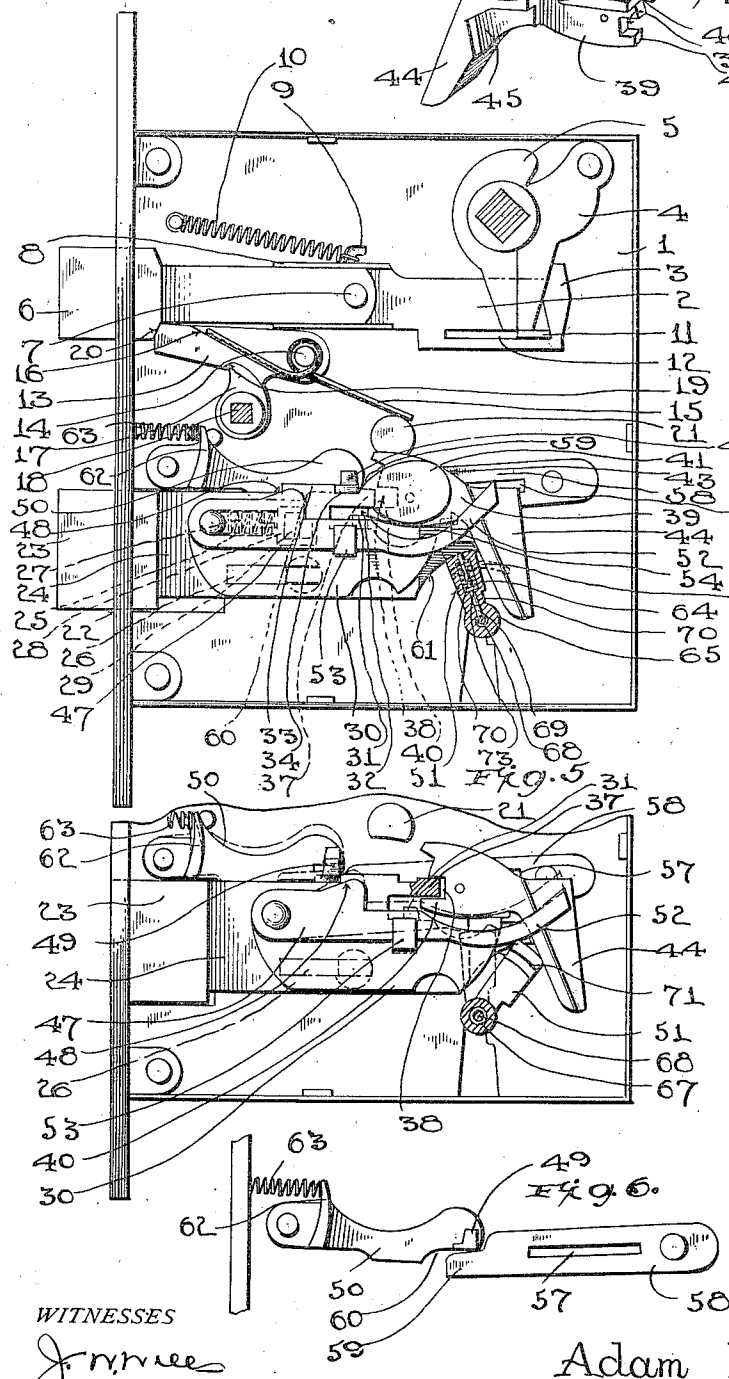


Fig. 12

Fig. 14.

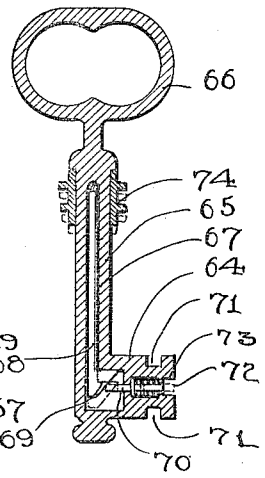


Fig. 15

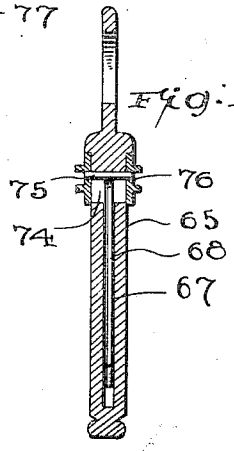
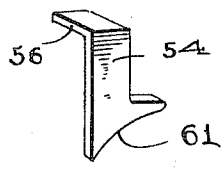


Fig. 5

Fig. 6.

Fig. 13



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2

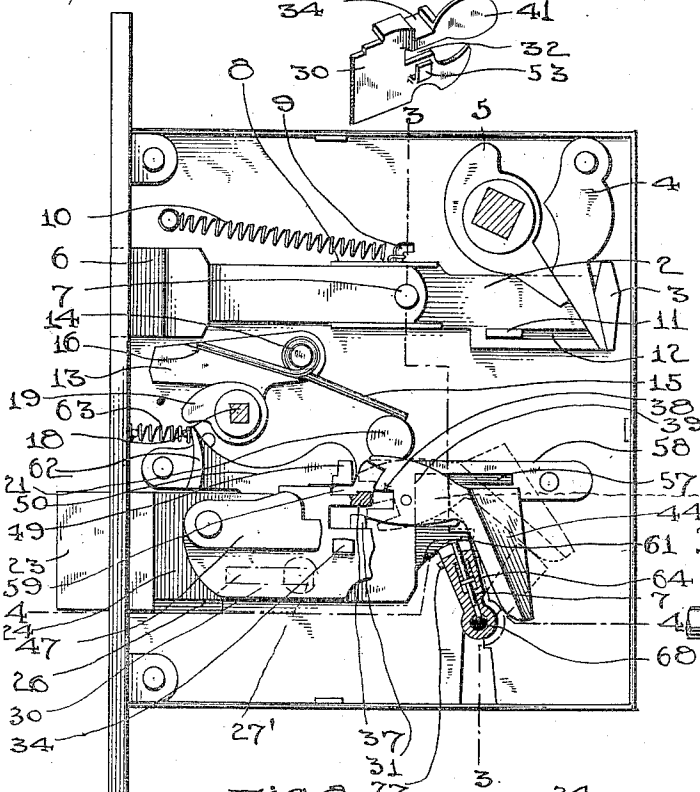


Fig. 11

Fig. 3

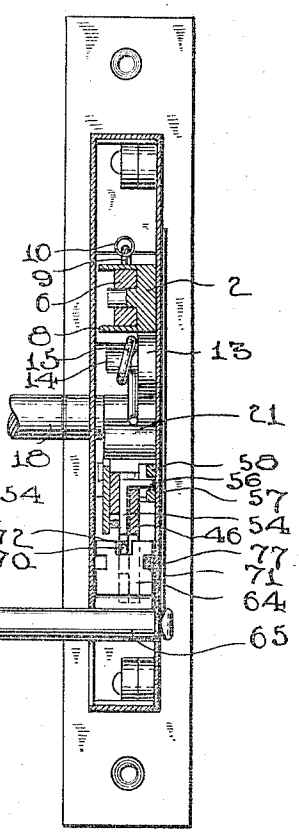


Fig. 8.

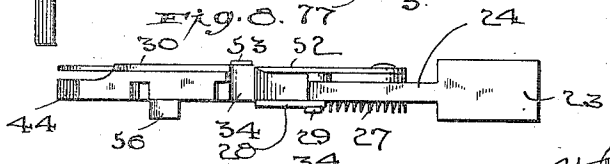


Fig. 7

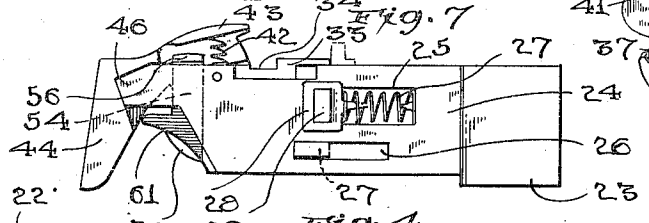


Fig. 10

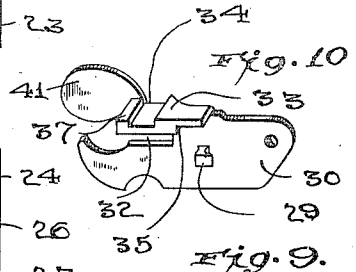


Fig. 4.

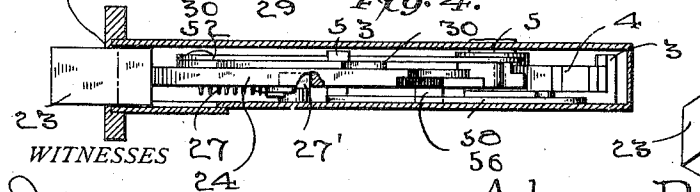
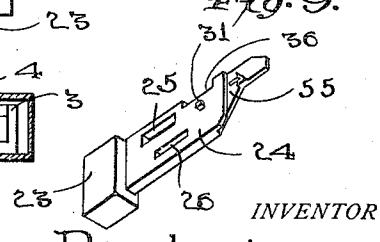


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

ADAM PRZELOMICE, OF NEW HAVEN, CONNECTICUT.

LOCK.

1,067,135. Specification of Letters Patent. Patented July 8, 1913.

Application filed January 4, 1913. Serial No. 740,221.

To all whom it may concern:

Be it known that I, ADAM PRZELOMICE, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to locks and has for its object the production of an efficient lock which may be employed for use upon safes or other receptacles wherein it will be impossible for unauthorized parties to unlock the same without knowing the manner of operating the lock.

Another object of this invention is the production of a simple and efficient lock whereby the key may be rotated within the lock if desired by an unauthorized party but at the same time the key will not unlock the same unless the party is aware of the sliding ferrule or collar positioned upon the key.

With these and other objects in view, this invention consists of certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a side elevation of the lock showing the key partly in section. Fig. 2 is a side elevation of the lock showing a portion of the locking mechanism broken away to illustrate the locking mechanism. Fig. 3 is a section taken on line 3—3 of Fig. 2. Fig. 4 is a section taken on line 4—4 of Fig. 2. Fig. 5 is a side elevation of a portion of the locking mechanism showing the parts thereof broken away to illustrate certain parts hidden in Figs. 1 and 2. Fig. 6 is a detail view showing the levers which permit the sliding of the locking bolt when raised out of engagement with the locking bolt. Fig. 7 is a rear view of the locking bolt. Fig. 8 is a top plan view of the bolt as illustrated in Fig. 7. Fig. 9 is a detail perspective of the main body portion of the locking bolt. Fig. 10 is a detail perspective of the pivoted safety frame of the locking bolt looking from the inside thereof. Fig. 11 is a detail perspective of the outer end of the frame illustrated in Fig. 10 looking from the outside thereof. Fig. 12 is a detail perspective of the latching member which allows the locking bolt to be withdrawn after remaining locked when the key is operated in the desired manner. Fig. 13 is a detail perspective of the tripping key which raises the locking levers illustrated in Fig. 6. Fig. 14 is a central longitudinal section of the key. Fig. 15 is a section through the key taken at right angles to Fig. 14.

By referring to the drawings by numerals, it will be seen that 1 designates the ordinary casing of the lock which is provided with a sliding frame 2 having an enlarged upwardly extending end 3 formed thereon. This enlarged upwardly extending end 3 is adapted to be engaged by a pivoted dog 4 which pivoted dog is in turn engaged by the knob engaging member 5 for withdrawing the latch 6 within the lock. This latch 6 is connected to the frame 2 by means of a connecting rivet 7 and is held in its correct position between the flanges 8 formed upon the frame 2. A laterally extending pin 9 is formed upon the frame 2 and is engaged by a coil spring 10 which is in turn connected to the frame or casing 1 of the lock so as to normally exert an outward pressure upon the latch bar 6. A lug 11 is formed in the casing 1 and works through a slot 12 formed in the frame 2 so as to limit the sliding movement of the latch 6. A safety latching member 13 is pivotally connected to the casing 1 by means of a pivot point 14 and a coil spring 15 is wound around this pivot point and engages the shoulder 16 formed upon the safety latch 13. A cam member 17 is carried by a shaft 18 and it should be understood that the latch 6 may be held in its proper extended position by means of the cam 17 engaging the shoulder 19 formed upon the safety latch 13. The safety latch 13 fits behind the shoulder 20 of the latch bar 6. The opposite ends of the spring 15 engage the lug 21 carried by the casing 1.

The casing 1 is provided with the usual aperture 22 through which slides the sliding lock bolt 23 and this sliding bolt 23 is provided with a comparatively thin body 24 as illustrated in Figs. 4 and 9. This body 24 is provided with an upper elongated aperture 25 and a lower elongated aperture 26. A lug 27 is formed upon the casing 1 and works in the lower aperture 26 so as to hold the bolt in its correct position for freely sliding upon the casing 1. A coil-spring 27 is carried within the upper longitudinally extending aperture 25 and engages the link 28 which link is connected to the laterally extending lug 29 carried by the sliding frame 30, so as to normally hold the sliding

frame in a retracted position. A lug 31 is formed upon the opposite side of the body 24 to the lug 29 and this lug works in the notch 32 formed upon the sliding frame 30. An overhanging flange 33 is formed upon the body 30 and is provided with a notch 34 upon its upper face. This flange 33 is also provided with a shoulder portion 35 which shoulder portion is adapted to limit the sliding movement of the sliding frame 30 relative to the notch portion 36 formed upon the top of the body 24. A ledge portion 37 is formed upon the flange 33 and this ledge portion is so formed as to normally engage the intermediate projecting lug 38 of the latching member 39. This lip portion 37 will fit between the intermediate projecting lug 38 and the lower projecting lug 40 and hold the latching member 39 against movement. When, however, the frame 30 is moved forwardly and held in this position, the latching member 39 may swing freely. It should be understood that when the lip portion 37 is out of engagement with the notches formed in the latching member 39, the latching member will swing freely when a key is brought into engagement therewith without drawing the locking bolt within the casing of the lock thereby preventing the sliding of the bolt unless the operator is familiar with the operation of the key illustrated in Figs. 14 and 15. Of course, it should be understood that where the key is actuated so as to trip the tripping key 54 hereinafter described, the lip portion 37 will engage the notch formed in the latching member 39 and as the key is brought into engagement with the latching member 39 and continued to be rotated, the sliding bracket 24 will be withdrawn within the lock casing 1. A widened wing portion 41 is formed upon the sliding frame 30 so as to hold the forward end of the latching member 39 in place. A coil spring 42 is placed upon the top of the body 24 and normally exerts an upward pressure upon the overhanging flange 43 of the latching member 39 so as to normally retain the latching member in its correct position. The latching member 39 is provided with a downwardly extending key engaging lip 44 which lip is provided with a cut-away portion 45 for allowing the projecting end 46 of the body 24 to fit therein.

A pivoted lever 47 is secured to the sliding frame 30 and is provided with a cam portion 48 which is adapted to engage the lug 49 of the locking lever 50 so as to raise the same out of engagement with the end of the flange 33 while moving the lock-bolt to the locked position as indicated clearly in Fig. 5. It will be seen that the wing portion 51 of the key will engage the downwardly curved finger 52 of the pivoted arm or member 47 and thereby cause the lever 50 to be raised to the position shown in dotted lines in Fig. 5. A guiding lip 53 is formed upon the sliding plate 30 so as to constitute a guide for the lever or arm 47. A tripping key 54 is slidably mounted between the sliding plate 30 and the body 24 of the sliding bolt so as to fit within the notched portion 55 formed at the outer end of the bolt. This tripping key 54 is provided with a laterally extending flange 56 which flange is adapted to fit in the slot portion 57 formed in the pivoted latch lifting lever 58. This pivoted latch lifting lever 58 is provided with a forwardly extending finger 59 which fits under the cut-out end 6 of the locking lever 50. The lug 49 formed upon the outer end of the locking lever 50 is adapted to fit in the notch 34 of the sliding plate 30 when the bolt is slid to the locked position and hold the same against longitudinal movement. At the time when the lug 49 engages the notch 34, it will be seen that the lip portion 37 will be held out of engagement with the projecting lugs 40 and 38 formed upon the latching member 39. The latching member then may swing upon its pivot when operated by the key but while so swinging, it should be understood that the sliding bolt cannot be actuated until the lug 49 of the locking lever 50 has been raised out of engagement with the notch 34 formed upon the flange 33. The tripping key 54 is provided with a lower concave end 61 and this concave end is adapted to be engaged by a specially constructed key, hereinafter described. The locking lever 50 is provided with a flange portion 62 which is engaged by a coil spring 63 for holding the lever 50 in a set position.

The key employed in the present device is provided with the usual flange or web 64 and comprises the usual body 65 having the hand engaging loop 66 at its upper end. A centrally located longitudinally extending aperture 67 is formed in the key and within this aperture is placed a plunger 68 provided with a cam end 69 which cam end engages a spring pressed plunger 70 working in an aperture formed in the flange or web 64. The flange or web 64 is provided with a notch 71 upon each side thereof and is also provided with a notch 72 at its outer end. The spring pressed plunger 70 is adapted to slide so as to constitute an abutment within the notch 72 of the web of the key when the plunger 68 is moved longitudinally of the body 65 of the key. The coil spring 73 is adapted to normally hold the plunger 70 in a retracted position. The body of the key 65 is provided with a plurality of slots 74 through which passes a pin 75 for connecting the plunger 68 with the sliding collar 76. It will, therefore, be seen that as the collar 76 is slid upon the body 65 the plunger 68 will be forced downwardly thereby forcing the spring pressed plunger 70 outwardly.

When the key is rotated within the lock and the plunger 70 is forced outwardly within the notch 72, this plunger will engage the lower concave face of the tripping key 54 and this tripping key will raise the lever 58 which lever 58 will in turn raise the lever 50, thereby allowing the sliding frame 30 to spring forward by means of the spring 27 and engage the latching member 39 between the lugs 40 and 38, thereby locking the same in a set position. Since the lug 49 will be raised out of engagement with the notch 34, it will be seen that by continuing the rotation of the key, the sliding bolt of the lock may be thrown inwardly thereby unlocking the device. An arc-shaped flange 77 is formed upon the lock so as to constitute a guide for the key.

From the foregoing description, it will be seen that an efficient lock has been produced which may be easily locked and if the key is found by an unauthorized party and it is attempted to unlock the lock, it will be impossible to do so unless the holder of the key understands the operation of the sleeve 74. It, of course, should be understood that by sliding the sleeve 74 and pushing the plunger 70 outwardly and then rotating the key, the tripping key 54 will be pushed upwardly raising the lever 58 and thereby releasing the lug 49 from the lock and allowing the whole locking device to be thrown inwardly.

What is claimed as new, is:—

1. A lock of the class described comprising a casing, a bolt slidably mounted within said casing, a locking lever secured to said casing, a sliding frame positioned upon said sliding bolt, a latching member pivotally secured to said sliding bolt, said sliding frame adapted to engage said latching member for holding the same against pivotal movement upon said bolt, said locking lever adapted to engage said sliding frame for holding said bolt against longitudinal movement relative to said casing and also holding said sliding frame out of engagement with said latching member whereby said latching member will have free pivotal movement upon said body.

2. A lock of the class described comprising a casing, a bolt slidably mounted therein, a sliding frame positioned upon said sliding bolt, said sliding frame provided with a flange portion, a latching member pivotally secured to said bolt and provided with a plurality of lugs formed upon its inner end, said lugs adapted to engage said flange whereby said latching member will be held against pivotal movement upon said bolt, a locking lever secured to said frame and adapted to engage said sliding frame of said bolt for holding the same in a retracted position and out of engagement with said latching member whereby said latching member may swing upon said bolt for preventing said bolt from being withdrawn into said casing.

3. A device of the class described comprising a casing, a sliding bolt positioned within said casing, a sliding frame positioned upon said bolt, said sliding frame provided with a laterally extending flange having a notch formed therein, a spring engaging said frame for normally holding the same in an extended position upon said bolt, a locking lever provided with a laterally extending lug, said laterally extending lug fitting in said notch upon said flange for holding said sliding frame in a retracted position upon said bolt, a latching member pivotally secured to said bolt and provided with means for engaging said sliding frame whereby said latching member will be held against pivotal movement upon said sliding bolt, and means carried by said bolt and adapted to be engaged by a key for raising said locking lever out of engagement with said sliding frame whereby said sliding frame may be thrown into engagement with said latching member for locking the same upon said bolt whereby said bolt may be engaged by a key for withdrawing the same within said casing.

4. A lock of the class described comprising a casing, a sliding bolt positioned therein, a sliding frame positioned upon said bolt, a pivoted arm connected to said sliding frame and provided with a cam projecting lip, a locking lever adapted to engage said sliding frame, said projecting cam lip adapted to kick said locking lever out of engagement with said sliding frame when said lever is swung upon said sliding frame, a latching member pivotally secured to said sliding bolt and adapted to be engaged by said sliding frame for locking the same in a set position upon said bolt whereby said bolt may be withdrawn within said casing when the same is engaged by a key.

5. A lock of the class described comprising a casing, a sliding bolt positioned therein, means for guiding said bolt within said casing, a sliding frame positioned upon said bolt, and a spring embedded within said bolt and engaging said sliding frame for normally holding the same in an extended position, a locking lever pivotally secured to said casing, said locking lever provided with a laterally extending lug, said sliding frame provided with a notch formed therein adapted to be engaged by said lug of said locking lever, a latching member pivotally secured to said sliding bolt and adapted to be engaged by said sliding frame when the same is in its extended position, said lug of said bolt adapted to engage said notch in said sliding frame for holding the same in a retracted position, an arm pivotally secured to said sliding frame and provided with means for raising said lug out of engagement with

said notch for allowing said bolt to be slid to a locked position, a tripping key slidably mounted upon said bolt, a tripping link positioned within said casing and provided with a longitudinally extending slot and also provided with a projecting end fitting under said locking lever for kicking the same out of engagement with said sliding frame, said tripping key provided with a laterally extending flange fitting in said tripping link for causing said tripping link to swing as said tripping key is raised and said tripping key provided with a laterally extending finger for limiting the upward movement of said tripping key relative to said sliding bolt.

6. In a device of the character described the combination with a casing, a sliding bolt, a locking lever engaging said sliding bolt, a locking link engaging said locking lever, a sliding tripping key positioned upon said bolt and engaging said link for raising the same and moving said locking lever out of engagement with said bolt, of a key provided with a sliding plunger, a second plunger carried by said key and adapted to be forced outwardly by said first mentioned plunger for engaging said tripping key, as said last mentioned key is rotated.

7. In a lock of the class described the combination with a casing, a sliding bolt, means for locking said sliding bolt against longitudinal movement, a vertical sliding key, of an operating key adapted to engage said sliding bolt and provided with an outwardly projecting plunger for engaging said vertical sliding key for forcing said locking lever out of engagement with said bolt as said operating key is rotated within said lock.

8. In a lock of the class described the combination with a casing provided with a key receiving aperture, a sliding bolt, a pivotal latching member secured to said bolt, means for engaging said latching member for locking the same in a set position, a locking lever engaging said sliding bolt for holding the same against inward movement, a link member engaging said locking lever, a vertical sliding key engaging said link member, of an operating key provided with a longitudinally extending rod, a collar engaging said rod and slidably mounted upon said key, said longitudinally extending rod provided with a cam end, said key provided with a flange portion having a centrally located groove adapted to work over said vertical sliding key, an auxiliary plunger positioned within said flange portion and working in said groove for engaging said vertical sliding key as said first mentioned plunger is forced downwardly within said casing whereby said vertical sliding key may be caused to slide upon said bolt and raise said link for causing said locking lever to be thrown out of engagement with said sliding bolt.

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

ADAM PRZELOMICE.

Witnesses:

LORENA MADERO,

JOSEPH T. ANQUILLARE.