

J. MONZANEY.
LOCK.
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1,105,093.

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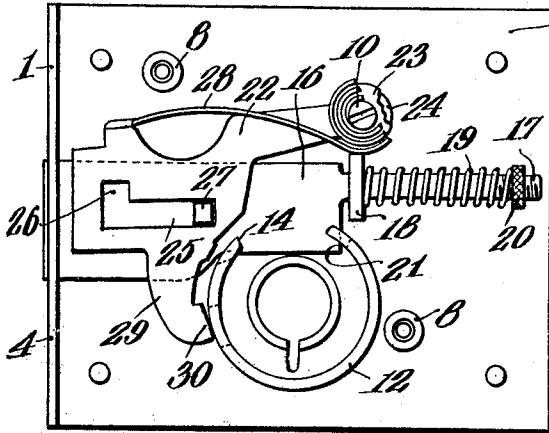


Fig. 1.

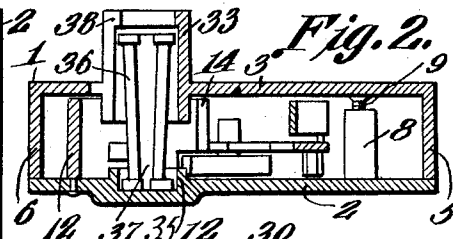


Fig. 2.

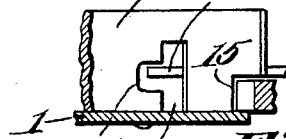


Fig. 3.

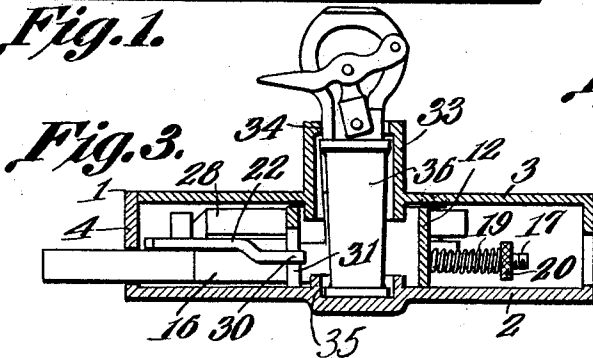


Fig. 4.

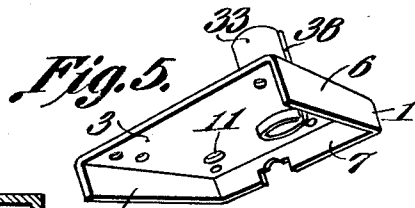


Fig. 5.

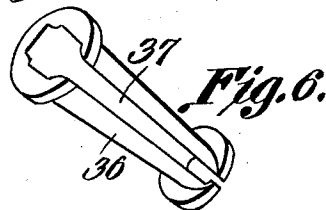


Fig. 6.

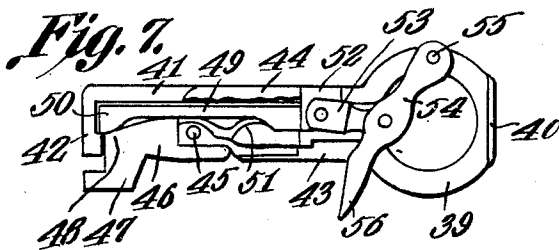


Fig. 7.

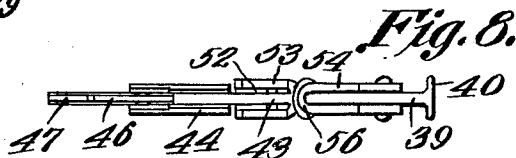


Fig. 8.

Witnesses

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LOCK.

1,105,093.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN MONZANEY, a subject of the King of Austria, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Lock, of which the following is a specification.

The device forming the subject matter of this application is a lock and the invention aims to provide a device of this character which cannot readily be tampered with or manipulated, saving at the hand of a person who is acquainted with the operation and construction of the structure.

Among other objects, the invention aims to provide a device of the type above described which can be unlocked only by advancing a movable member constituting a part of a key through an opening in a ward.

The invention aims to provide a novel form of key for a lock and to provide novel locking mechanism coöperating therewith.

It is within the scope of the invention to improve generally and to enhance the utility of, devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 is a plan of the face plate of the lock and parts carried thereby; Fig. 2 is a transverse section of the complete lock; Fig. 3 is a transverse section of the complete lock, showing the key in place; Fig. 4 is a sectional detail of the ward; Fig. 5 is a perspective of the back plate; Fig. 6 is a perspective of the barrel; Fig. 7 is a side elevation of the key; Fig. 8 is a top plan of the key.

In carrying out the invention there is provided a case 1, comprising a face plate 2 and a back plate 3. The face plate 2 is equipped with a bolt flange 4 and the back plate 3 may comprise a top plate 5, a bottom plate 6 and an end plate 7. Generally considered, however, the case 1 may be of any desired form.

Projecting from the face plate 2 of the case 1 are sleeves 8, adapted to receive screws or

other securing elements 9, which engage the back plate 3. The face plate 2 is equipped with a spring holding stud 10 and in the back plate 3, there may, if desired, be formed an opening 11 adapted to receive the end of the stud 10.

Projecting from the face plate 2 is a ward 12 having an opening 14 at its top, there being notches 15 in the ward 12 adjacent the opening 14, the notches supporting slidably a locking bolt 16, provided with a shank 17, received slidably in a lug 18 formed upon the face plate 2. A compression spring 19 surrounds the shank 17 and abuts against the lug 18, there being a nut 20 or other suitable element upon the end of the shank 17, engaging the spring 19 to adjust the tension. That end of the body portion of the locking bolt 16 which is adjacent the shank 17 forms a shoulder 21 adapted to be engaged by a portion of the key hereinafter described, to throw the bolt 16 to a locked position.

The invention further includes a dog 22, the dog 22 being pivoted as shown at 23 upon the spring holding stud 10, a washer 24 being interposed between the dog 22 and the face plate 2. The dog 22 is equipped with a longitudinal slot 25, having at its forward end a transverse, upright extension 26. There is a boss 27 on the locking bolt 16, slidably received in the slot 25 and adapted to seat in the extension 26. A spring 28 is coiled around and secured to the spring holding stud 10, one end of the spring 28 bearing upon the upper edge of the dog 22, to the end that when the locking bolt 16 is advanced, the boss 27 thereon may engage in the extension 26 of the slot 25 and thus hold the bolt 16 in advanced position. The dog 22 includes a depending arm 29 provided with a rearwardly extended finger 30. In the ward 12 there is an upright slot 31, into which the finger 30 is adapted to move when the boss 27 of the lock bolt 16 is engaged in the extension 26 of the slot 25 of the dog 22. The upright slot 31 is provided with a transverse extension 32, adapted to receive a portion of the key hereinafter described, so as to permit the dog 22 to be tilted upon its pivotal mounting 10 and when the dog is thus tilted, the boss 27 on the locking bolt 16 will be freed from the extension 26 of the slot 25 in the dog, and thereupon the spring 19 which abuts against the ear 18

and against the nut 20 will retract the locking bolt 16.

The back plate 3 is equipped with an outstanding socket 33, provided at its outer end with an inwardly projecting shoulder 34. A socket 35 is formed upon the base plate 2, within the contour of the ward 12. Journalled for rotation in the sockets 33 and 35 and restrained against outward movement by the shoulder 34 on the socket 33 is a barrel 36, provided with a longitudinal slot 37. The slot 37 is adapted to be alined with a slot 38 formed in the socket 33 of the back plate 3.

The key whereby the lock hereinbefore described is manipulated is a composite structure, and includes a head 39 provided at its outer end with a thumb piece 40. Projecting from the head 39 in alinement therewith is a primary arm 41, provided at its end with a rectangularly disposed stop 42. Projecting from the head 39 and in alinement therewith and in alinement with the primary arm 41 is a secondary arm 43. The arms 41 and 43 are connected by a guide 44. A lever 46 is fulcrumed at 45 upon the guide 44 and terminates in a laterally extended blade 47, located behind the stop 42. Adjacent the stop 42, the blade 47 is beveled as indicated at 48. Slidably received within the guide 44 and located between the primary arm 41 and the lever 46 is an actuating member 49, provided with a beveled head 50 coöperating with the beveled portion 48 of the blade 47. At its rear end, the lever 46 terminates in a spring tongue 51 which bears upon the actuating member 49. The spring tongue 51 serves to hold the blade 47 in a retracted position. The actuating member 49 is equipped with ears 52 engaged slidably upon opposite sides of the primary arm 41, and serving to aid in guiding the right line movement of the actuating member 49. A link 53 is pivoted to the actuating member 49 and is pivoted to a lever 54, fulcrumed as indicated at 55 upon the head 39 of the key, the lever 54 terminating in a finger piece 56 projecting beyond the edge of the head 39.

The operation of the structure hereinbefore described is as follows:—Presupposing that the key is in the position shown in Fig. 7, the slot 37 in the rotatable barrel 36 is alined with the slot 38 in the socket 33 to receive the blade 47 of the key, the key being thereupon inserted into the lock. If the key is rotated in the proper direction, the blade 47 will engage the shoulder 21 of the locking bolt 16 and advance the locking bolt. When the boss 27 on the locking bolt 16 lies in a position beneath the extension 26 of the slot 25 in the dog 22, the spring 28 will depress the dog 22 and cause the boss 27 to become lodged in the extension 26. Thus, the locking bolt 16 will be held in its advanced or locked position. By the operation

above described, the finger 30 which is located at the end of the arm 29 of the dog 22 will move into the upright slot 31 in the ward 12. Presupposing that the key is in the condition shown in Fig. 7, it will be obvious that no matter how much the key may be rotated, within the contour of the ward 12, the blade 47 of the key will not strike the finger 30 of the dog 22, because the blade 47, in the normal condition of the key is not advanced far enough to enter the extension 32 of the upright slot 31 in the ward 12. When the blade 47 is advanced, the blade will strike the ward 12, and further outward movement of the blade 47 will be prevented, excepting when the blade is positioned exactly opposite to the extension 32 of the slot 31 in the ward 12. Under these circumstances and under no other circumstances, the blade 47 will strike the finger 30. When the finger 30 is engaged in the matter above pointed out by the blade 47, the dog 22 will be tilted upon its pivotal mounting 10, and be elevated adjacent its free end thereby lifting the dog, so that the boss 27 upon the locking bolt 16 is no longer engaged in the extension 26 of the slot 25 of the locking bolt. Thereupon, the spring 19 will retract the bolt into an unlocked position as shown in Fig. 1.

Having thus described the invention what is claimed is:—

1. In a lock, coöperating elements comprising a bolt and a bolt holding dog; an expansible key including a laterally movable part, said part being adapted to engage one of said coöperating elements when the said part is in advanced position, and being adapted to engage the other of said coöperating elements when the said part is in retracted position.

2. In a lock, a ward having spaced openings; a locking bolt; a bolt holding dog; a key including a relatively movable member and means for advancing and retracting the movable member; the movable member being adapted to engage the bolt through one opening when the member is in retracted position, and being adapted to engage the dog through the other opening when in advanced position; and means for actuating the bolt.

3. In a lock, a locking bolt; a bolt holding dog; and an expansible key, the key being adapted to engage the bolt when the key is in contracted condition, and being adapted to engage the dog when the key is in expanded position; and means for actuating the bolt.

4. In a lock, a ward having spaced openings; a locking bolt accessible through one opening; and a bolt holding dog accessible through the other opening.

5. In a lock, a face plate; a curved ward upon the face plate and provided with an opening adjacent its top, the ward having an

opening at one side; a support upon the face
plate; a locking bolt mounted to slide adja-
cent the first specified opening in the ward,
the locking bolt having a part lying within
5 the ward to constitute a key-engaging shoul-
der, the bolt being provided with a shank
slidably received in the support; a spring
surrounding the shank and abutting against
the support; adjusting means on the shank
10 and engaging the spring, thereby to hold said
part of the bolt normally within the contour

of the ward; a pivotally supported dog in-
cluding a finger located adjacent the open-
ing in the side of the ward; and interlock-
ing elements on the bolt and the dog. 15

In testimony that I claim the foregoing
as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

JOHN MONZANEY.

Witnesses:

JOHN B. NICHOLAS,
JOHN H. PARK.

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