G. WEGNER.

LOCK.

APPLICATION FILED JAN. 15, 1917.

1,242,401.

Patented Oct. 9, 1917.

2 SHEETS—SHEET 1.

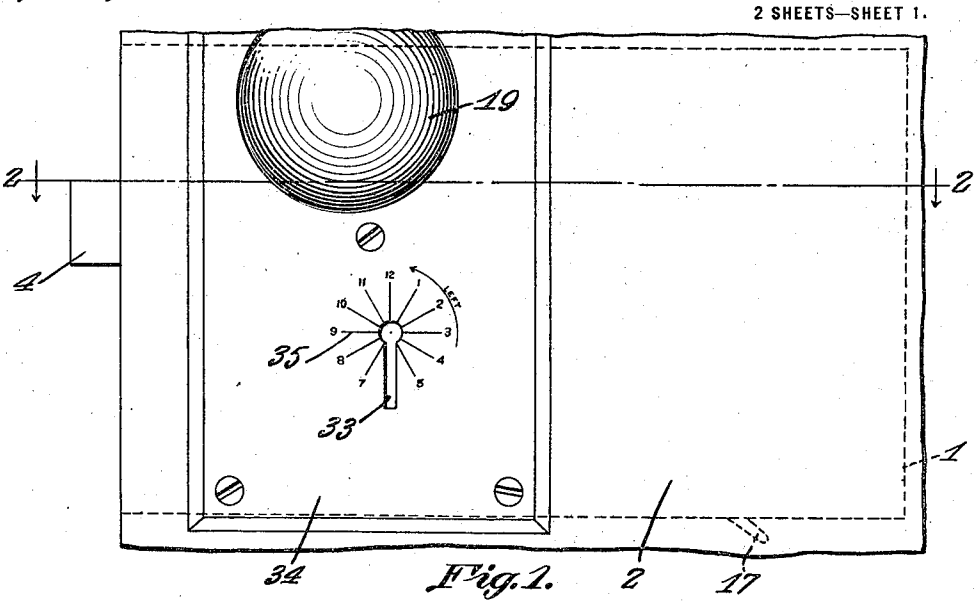


Fig. 1.

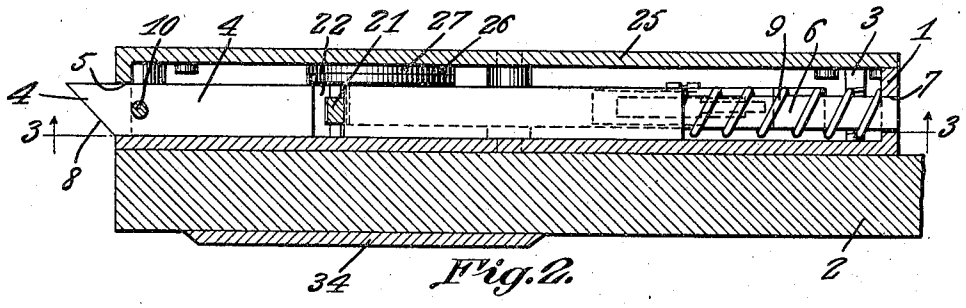


Fig. 2.

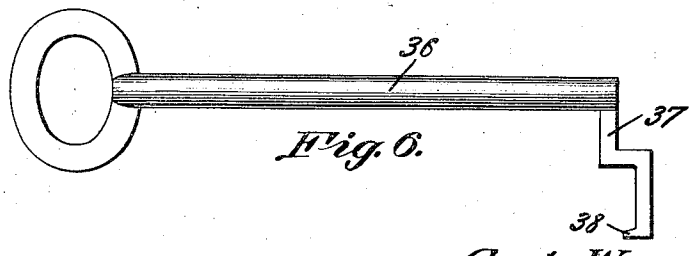


Fig. 6.

Gust Wegner, INVENTOR

WITNESSES

John M. Dobie

Lloyd W. Patch

BY Richard B. Elwein

ATTORNEY

G. WEGNER.

LOCK.

APPLICATION FILED JAN. 15, 1917.

1,242,401.

Patented Oct. 9, 1917.

2 SHEETS—SHEET 2.

Fig. 3.

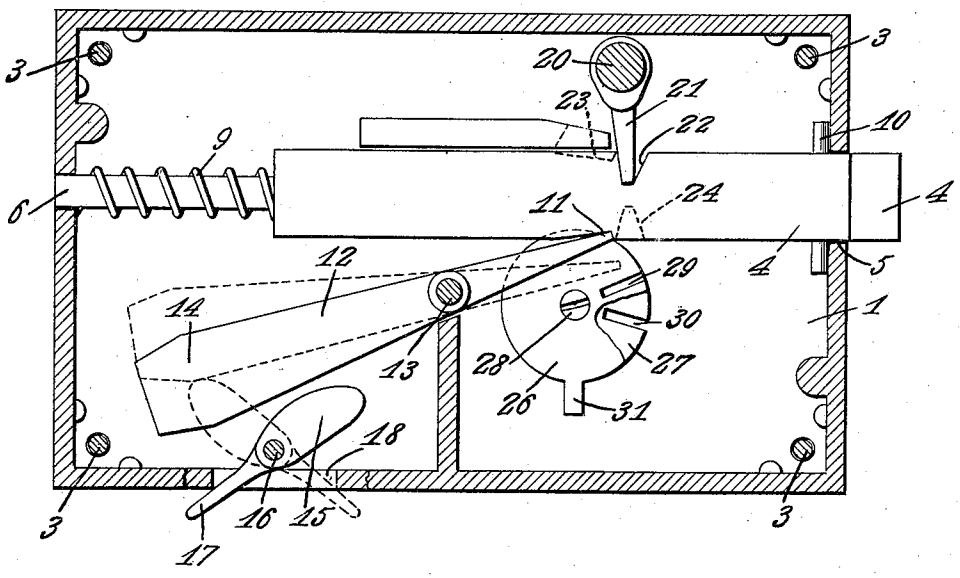


Fig. 4.

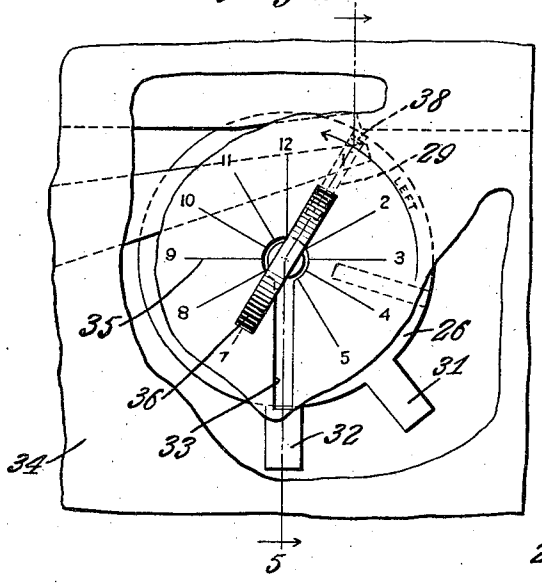
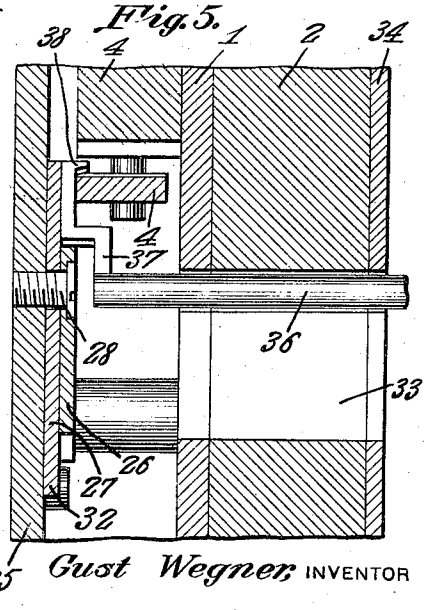


Fig. 5.



Gust Wegner, INVENTOR

WITNESSES

John M. Dobie

Lloyd W. Patch

BY Richard B. Owen.

ATTORNEY

UNITED STATES PATENT OFFICE.

GUST WEGNER, OF BAUDETTE, MINNESOTA.

LOCK.

1,242,401. Specification of Letters Patent. Patented Oct. 9, 1917.

Application filed January 15, 1917. Serial No. 142,503.

To all whom it may concern:

Be it known that I, GUST WEGNER, a German subject, who has filed declaration of intention to become a citizen of the United States, residing at Baudette, in the county of Beltrami and State of Minnesota, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to an improvement in locks and more particularly to a lock of the pivoted tumbler type. An object of my invention is to provide a lock of the character described which is so constructed that the parts may be operated from the inner side of the door to release the bolt while a key of peculiar form is required to be inserted in a key-hole opening and manipulated in a predetermined manner to accomplish release of the lock from the remaining side of the door.

A further object resides in so arranging the parts that a spring is mounted to normally hold the bolt extended and the lock is adapted thus for use as a latch to hold the door closed, parts being provided to release the bolt securing means and hold the same in a released position when the structure is to be used as a spring latch.

Yet another object resides in so constructing the pivoted tumblers that when the key is removed they will be automatically set to prevent the opening of the lock even by the use of the special key, except that the key be manipulated in a predetermined manner, and in so arranging the parts that the combination of movements through which the key must be carried can be varied by reversing the disks, or substituting other tumbler disks of slightly varied form.

With the above and other objects in view, my invention consists in certain novel features of construction and combination of parts which will be hereinafter set forth in connection with the drawings and then more particularly pointed out in the claims.

In the drawings:—

Figure 1 is a view in elevation showing a fragment of the outer side of a door having my lock structure fitted thereto.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary elevational view with parts broken away to more clearly disclose the arrangement of and the manner of operating the parts.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a view in elevation showing the key as adapted for use in connection with my improved lock structure.

A case 1 is adapted to be secured upon the inner side of the door 2 by the use of screws 3, or this case might be mortised into the door and mounted in the usual manner. A bolt 4, preferably of substantially prismatic form throughout its greater extent and of rectangular cross section, is passed through an opening 5 provided at that side of the casing 1 adapted to be mounted adjacent the swinging edge of the door, and a cylindrical stem 6 is extended through an opening 7 which is in line with the opening 5. The bolt 4 is preferably cut across diagonally at its end as shown at 8, and as the door is closed against a keeper plate secured on the door casing, this diagonally formed face 8 will slide against the plate and the bolt 4 will be moved into the casing 1. A coil spring 9 is mounted around the cylindrical portion 6 of the bolt 4, and thus the movement of the bolt within the case is resiliently opposed and the bolt is again extended when the bolt receiving opening of the keeper plate is encountered. A pin 10 is passed through the bolt 4, or lugs might be formed from the sides thereof, to abut against the inner sides of the casing 1 and thus limit the bolt projection.

The bolt 4 is notched at the edge as indicated at 11, and a bolt locking lever 12 is pivotally mounted within the case 1 by means of the pin 13 and is provided with the weighted end 14 by which the remaining end is held and normally swung up by gravity to a position that it engages within the notch 11 and thus holds the bolt 4 against movement inwardly into the case from the extended position. A cam-shaped lock releasing member 15 is pivoted within the casing 1 by means of the pin 16, and has a finger piece extending through an opening 18 in the case. This lock releasing member 15 when swung to the position shown in the full line of Fig. 3 does not interfere with the swinging movement of the locking lever 12 to an operative position, but when the finger piece 17 is grasped and the lock re-

leasing member 15 is swung around the pivotal mounting at 16, this member will ride under the weighted end 14 of the lock lever 12 and will raise the same to stand in the position shown by the dotted line where the bolt engaging end is swung from the position in which it will engage in the notch 11, and when the lock releasing member 15 is thrown over the other extreme position as indicated by the dotted line, where the finger piece 17 limits further movement, the weighted end 14 of the locking lever 12 will be permanently held up and the locking lever will be retained against the return movement to the operative relation, in which setting of the parts the structure will operate as a spring latch. A knob 19 has the shank 20 thereof passed through casing 1 and the door, and an arm 21 is carried by the shank 20 and is received at its free end within the notch 22 provided in the bolt 4 so that upon turning of the knob the bolt 4 will be withdrawn from the latched position against the tension of the spring 9. Immediately the knob is released, the spring will again act to extend the bolt, and allow the bolt to snap into the keeper. When it is desired to lock the door from the inner side, the lock releasing member 15 will be again moved to the position shown in the full lines in Fig. 3 and the locking lever 12 is then free to swing around its pivotal mounting and to engage in the notch 11 of the bolt 4. To make the lock adaptable for use upon right and left hand doors, or upon doors swinging either in or out, I provide the notches 23 and 24 in the edges of the bolt 4 in positions corresponding substantially to the location of the notches 11 and 22, but oppositely disposed. By providing these duplicate notches at opposite sides, the bolt can be reversed so that the beveled or sloping face at the end thereof will be disposed in either direction desired and then the lock will be adaptable for use upon doors which swing either in or out and can be used as a spring latch.

The lock releasing member 15 is fully adequate to use in all connections for releasing the door lock from the inner side and for setting the lock lever in the inoperative position, but it will be appreciated that when the lock is to be released from the outer side of the door or from the side of the door opposite to which the lock is mounted, some other means than previously described must be provided. When the lock releasing member 15 is swung into the position shown by the dotted lines in Fig. 3, the knobs 19 can be used to throw the bolt to withdraw the same, and the spring 9 will act, upon release of the knob, to return the bolt to the door holding position. A cover plate 25 which is provided for the casing 1 has the tumbler disks 26 and 27 carried thereby and loosely pivoted upon the screw or pin 28. These tumbler disks 26 and 27 have the notches 29 and 30 formed radially from the outer edges thereof, and the weights 31 and 32 are provided on the tumbler disks to hold the same swung by gravity to a position that the notches of the disks are out of registry. A key hole opening 33 is formed through the casing 1, through the door 2, and through a plate 34 which is secured on the outer side of the door, and the enlarged end of the key hole opening is substantially in line with the screw or pin 28. As it has been stated, the tumbler disks 26 and 27 are mounted on the screw 28 to be capable of loose pivotal movement, and the locking lever 12 is cut away to provide clearance for those disks or is spaced sufficiently from the cover 45 so that the movement of the disks is not interfered with. Dial markings are provided around the enlarged end of the key hole opening through the plate 34, as indicated at 35, and a key 36 has the bit 37 thereof off-set and then provided with a hooked end 38, as is better shown in Fig. 6. In unlocking the parts with the key, the key is inserted through the opening 33 and after being received in the casing 1 is turned so that the bit occupies a position approximately one-quarter of the way from the dial marking "2" to the dial marking "3", the key is then moved inwardly to bring the off set end of the bit 37 within the slot or notch 29 of the disk 26. Without bringing the key bit against the remaining tumbler disks 27, the key is turned to dispose the bit substantially midway between the dial marks "3" and "4", and then further inward movement of the key will bring the bit to lie within the slot or notch 30 of the tumbler disks 27. But turning the key to bring the bit substantially to the dial marking 11, the hook 38 is moved to a position adjacent the upper side of the locking lever 12, and drawing pressure exerted upon the key through the bow thereof will move the bit from the fitted position within the slot or notch 30 of the disk 27 and will engage the hooked end 38 over the upper end of the locked lever 12, following which the key can be turned in a clock-wise direction to substantially the position indicated in Fig. 4 and the locking lever will be swung down to disengage the end thereof from the notch 11 of the bolt 4. When the key is to be released, it will be given a further turning movement in a clockwise direction and will consequently ride over the end of the locking lever 12 following which the locking lever will be again swung by the weight 14 to the position shown by full lines in Fig. 3, and when the key has been withdrawn, the tumbler disks 26 and 27 will be returned by their weights 31 and 32, to a

position shown in Fig. 3 where the slotted openings thereof are out of registry with each other and with the key hole opening 33. When it is desired to change the combination required in the manipulation of the key to release the locking lever 12, the tumbler disks 26 and 27 can either or both be reversed in their setting upon of the screw or pin 28, or disks having the notch openings thereof disposed at other points around the peripheries can be substituted. When the locking lever 12 has been released through the use of the key, the bolt 4 can be withdrawn by use of the handle 19, and immediately the key is released from the engagement with the locking lever and the bolt is returned to the shot or throw position, the locking lever will again engage in the notch of the bolt and the bolt will be secured against release.

From the foregoing it will be seen that I have provided a lock structure which is of the pivoted tumbler type, but which instead of employing a combination makes use of a key adapted to be inserted through a key hole and then manipulated in a predetermined manner to fit the hook 38 over the lock lever 12 so that upon turning movement of the key this locking lever will be swung to relation that the bolt is released, but when the locking lever is thrown to the released position the locking mechanism will operate substantially after the manner of an ordinary spring door latch, that the combination can be changed and varied through variation in the arrangement of the tumbler disks or the substitution of other disks, and that the structure possesses other features of novelty and advantage.

I claim:

1. A lock including in combination with a key, a bolt, bolt locking means acting to secure the bolt against withdrawal arranged to be swung to an inoperative relation by use of a key, and pivotally mounted tumblers arranged to oppose insertion of the key and swing therewith to bring the key to the proper releasing position upon predetermined manipulation of the key.

2. A lock including a bolt, a bolt locking lever mounted to be normally swung by gravity to a position to secure the bolt, and means by which said bolt-locking lever is moved against the gravity weight thereof to an inoperative position and may be secured and held against the return movement to the operative relation.

3. A lock including a casing having a keyhole opening through one side thereof, a bolt mounted within the casing to be normally held extended therefrom, means to lock the bolt, and means mounted within the casing beyond the bolt locking means and closely adjacent thereto to oppose insertion of a key to release the bolt locking means and to be manipulated to be brought to a relation to allow insertion and manipulation of the key.

4. A lock including a casing having a keyhole opening through one side thereof, a bolt mounted within the casing to be normally held extended therefrom, means to lock the bolt, means mounted within the casing beyond the bolt locking means and closely adjacent thereto to oppose insertion of a key to release the bolt locking means and to be manipulated to be brought to a relation to allow insertion and manipulation of the key, and means to be set to render the bolt locking means inoperative.

5. A lock including in combination with a key having the bit thereof off-set beyond the end of the stem and provided with a hook at the outer end, a bolt mounted to be normally held in an extended position, bolt locking means normally acting to secure the bolt against withdrawal, and pivotally mounted tumbler disks provided with openings for reception of the offset bit of the key mounted adjacent the locking means to oppose insertion of the key to engage the hook back of the locking means except when the bit of the key is inserted within the openings of the tumbler disks.

6. A lock including in a combination with a key having the bit thereof offset beyond the end of the stem and provided with a hook at the outer end, a bolt mounted to be normally held in an extended position, bolt locking means normally acting to secure the bolt against withdrawal, pivotally mounted tumbler disks provided with openings for reception of the offset bit of the key mounted adjacent the locking means to oppose insertion of the key to engage the hook back of the locking means except when the bit of the key is inserted within the openings of the tumbler disks, and said tumbler disks provided with weights to cause the same to be swung by gravity to a position that the openings thereof are disalined.

7. A lock including a casing, a bolt mounted in the casing, means by which the bolt is normally held extended from the casing, bolt locking means in the form of a swinging lever mounted within the casing to be held by gravity in a position to restrain the bolt against withdrawal, means by which the bolt will be withdrawn upon release of the bolt locking means, tumbler disks mounted adjacent the locking means and provided with openings to receive the bit of a key in such a manner that as the openings are alined and the key is fitted therein the key may be brought to a position back of the bolt locking means and the same may be released.

8. A lock including a casing, a bolt mounted in the casing, means by which the bolt is normally held extended from the casing, bolt locking means in the form of a swinging lever, mounted within the casing to be held

by gravity in a position to restrain the bolt against withdrawal, means by which the bolt will be withdrawn upon release of the bolt locking means, tumbler disks mounted adjacent the locking means and provided with openings to receive the bit of a key in such a manner that as the openings are alined and the key is fitted therein the key may be brought to a position back of the bolt locking means and the same may be released, and weights provided on said tumbler disks to normally hold the same in such relation that the openings are disalined.

9. A lock including a casing, a bolt mounted in the casing, means by which the bolt is normally held extended from the casing, bolt locking means in the form of a swinging lever mounted within the casing to be held by gravity in a position to restrain the bolts against withdrawal, means by which the bolt may be withdrawn upon release of the bolt locking means, tumbler disks mounted adjacent the locking means and provided with openings to receive the bit of a key in such a manner that as the openings are alined and the key is fitted therein the key may be brought to a position back of the bolt locking means and the same may be released, weights provided on said tumbler disks to normally hold the same in such relation that the openings are disalined, and a dial provided with indicating markings to permit the determination of proper movement of a key to bring the same to the position of fitting through the openings of the disks.

10. A lock including a casing a bolt mounted in the casing, means by which the bolt is normally held extended from the casing, bolt locking means in the form of a swinging lever, mounted within the casing to be held by gravity in a position to restrain the bolt against withdrawal, means by which the bolt will be withdrawn upon release of the bolt locking means, tumbler disks mounted adjacent the locking means and provided with openings to receive the bit of a key in such a manner that as the openings are alined and the key is fitted therein the key may be brought to a position back of the bolt locking means and the same may be released, weights provided on said tumbler disks to normally hold the same in such relation that the openings are disalined, and a dial provided with indicating markings to permit the determination of proper movement of a key to bring the same to the position of fitting through the openings of the disk, and means by which the bolt locking means is rendered inoperative.

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

GUST WEGNER.

Witnesses:
MORRIS WITTEN,
G. A. LODERSTROM.

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