J. DUNAI.

LOCK.

APPLICATION FILED JULY 31, 1911.

1,014,577.

Patented Jan. 9, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

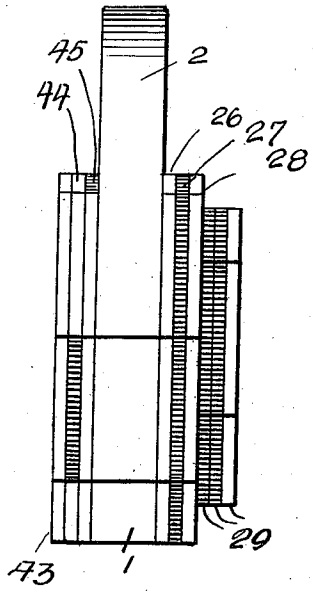


Fig. 2.

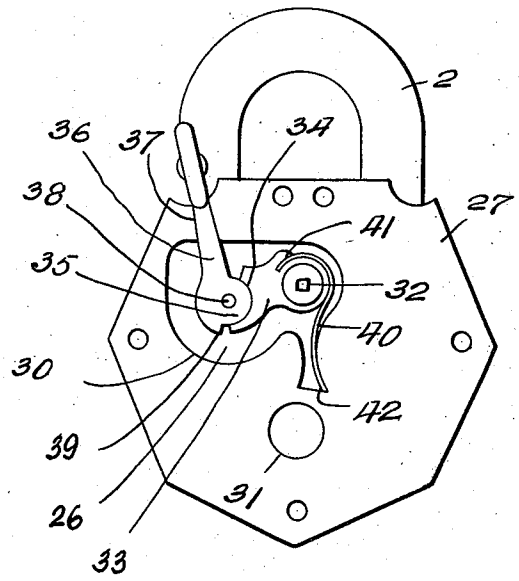


Fig. 3.

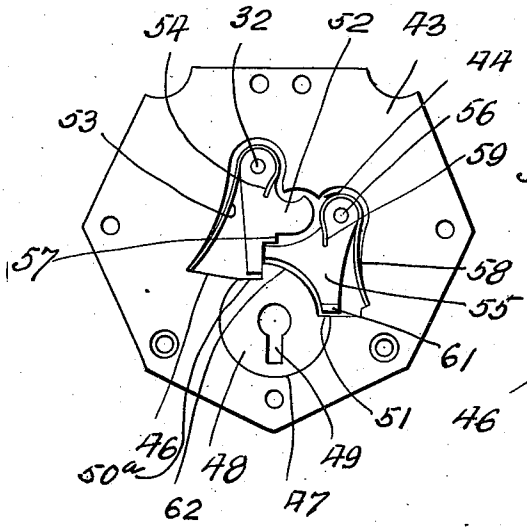
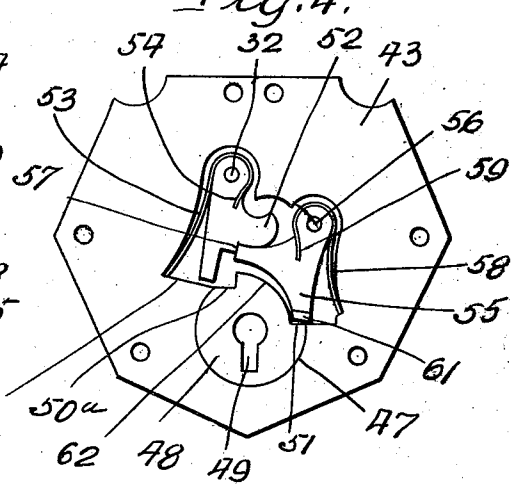


Fig. 4.



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3 SHEETS—SHEET 2.

Fig. 5.

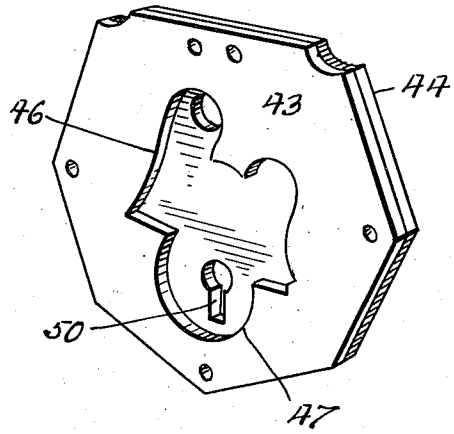


Fig. 6.

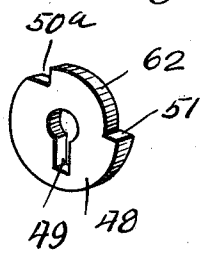


Fig. 7.

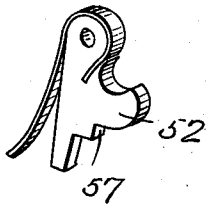


Fig. 8.

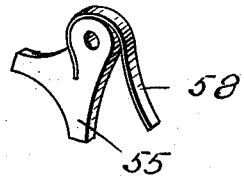


Fig. 9.

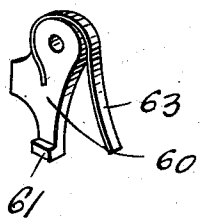
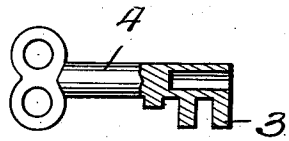


Fig. 10.



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3 SHEETS—SHEET 3.

Fig. 11.

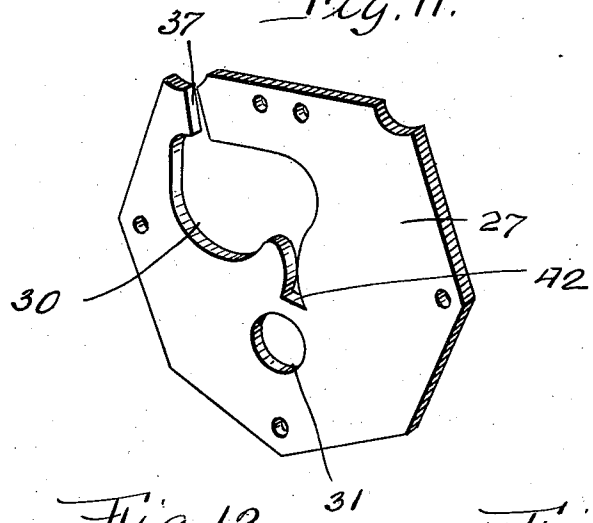


Fig. 12.

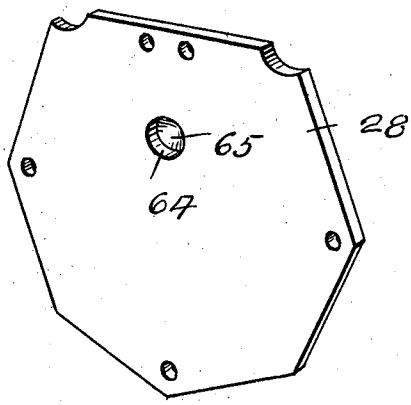


Fig. 13.

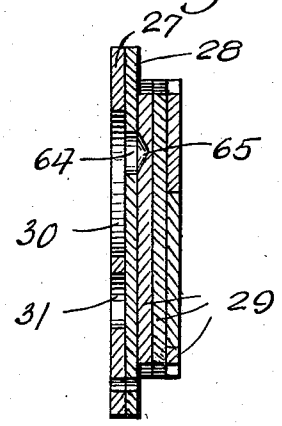
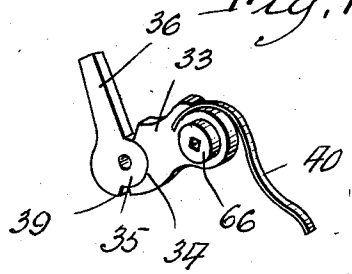


Fig. 14.



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UNITED STATES PATENT OFFICE.

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1,014,577. Specification of Letters Patent. Patented Jan. 9, 1912.

Original application filed May 5, 1911, Serial No. 625,151. Divided and this application filed July 31, 1911. Serial No. 641,570.

To all whom it may concern:

Be it known that I, JOSEF DUNAI, a subject of the King of Hungary, residing at Racine, in the county of Racine and State of Wisconsin, 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 application is a division of application Serial No. 625,151, filed May 5th, 1911, and together with my companion application, filed under even date, represents certain improvements in locks.

The object of the present invention is to provide a lock mechanism that can be advantageously used in connection with the lock and lock mechanism disclosed in the applications for Letters Patent heretofore referred to, the mechanism forming the subject matter of this application being arranged whereby it will be necessary to actuate the same by a key, before the lock can be completely opened.

With the above and other objects in view, the invention resides in the novel construction, combination and arrangement of parts to be hereinafter more specifically described and then claimed.

Reference will now be had to the drawing, wherein like numerals denote corresponding parts throughout the several views, in which:—

Figure 1 is a side elevation of a lock in accordance with the invention, Fig. 2 is an elevation of a portion of the lock, showing a key in position for actuating the mechanism forming the subject matter of this application, Fig. 3 is a front elevation of the outer plate of the lock showing the mechanism in one position, Fig. 4 is a similar view showing the mechanism in another position, Fig. 5 is a perspective view of a detached outer and middle plate, Fig. 6 is a perspective view of a detached key plate, Figs. 7 to 9 inclusive are perspective views of parts of the mechanism, Fig. 10 is a side elevation of a key partly broken away and partly in section, Fig. 11 is a perspective view of a detached middle plate, Fig. 12 is a perspective view of a detached outer plate, Fig. 13 is a vertical sectional view of the middle and outer plates shown in Figs. 11 and 12, and Fig. 14 is a perspective view of a portion of the mechanism.

The reference numeral 1 denotes a lock body having a shackle 2 and connected to the front side of the body 1 are plates designated 43, 44 and 45, while connected to the rear side of the body 1 are plates 26, 27, 28 and 29. The plate 43 is adapted to support plates and mechanism disclosed in my companion application, said plates having an exterior appearance similar to the plates 29.

The plate 27 has the edges thereof knurled and this plate is provided with an irregularly shaped opening 30 and with a circular opening 31. Extending into the opening 30 is the rectangular shank of an operating pin 32, said pin being rotatably mounted in the plate 26 and said pin will be hereinafter referred to. Mounted upon the pin 32, within the opening 30, is a crank 33 having a seat 34 for the circular head 35 of an actuating member 36. This member extends into a slot 37 in communication with the opening 30. The head 35 of the member is pivotally connected by a pin 38 to the crank 33, and said head has a shoulder 39 for limiting the raising movement of the crank 33. The crank 33 is normally held in the position shown in Fig. 2 by a curved spring 40 having one end thereof mounted in the crank, as at 41 and the opposite end extending into a slot 42 in communication with the opening 30.

When the bit 3 of a key 4 is pressed upon the actuating member 36, said member immediately shifts the crank 33 downwardly and partially rotates the pin 32 for a purpose to be presently referred to. The pin 32 extends through the body of the lock and into plates 43, 44 and 45. The plate 43 has an irregularly shaped opening 46 and a substantially circular opening 47. Movably mounted in the circular opening is a circular key plate 48 having a key opening 49 adapted to register with a similar opening 50 in the plate 44. The key plate 48 is normally locked and when released it permits the operation of the key 4 so that the hasp locking mechanism (not shown) can be actuated to release the hasp. The walls of the opening 49 in the key plate 48 will arrest movement of the bit 3 of the key 4 so as to prevent turning movement of the key 4 unless the key plate 48 is released. When the latter is released and the key 4 is turned, the plate 48 is carried with the key. The upper edge of the key plate 48

is provided with two shoulders indicated at 50ª and 51, and engaging with the shoulder 50ª to arrest the movement of the key plate 48 in one direction is a pawl 52 fixed upon the end of the pin 32, the latter when shifted through the medium of the actuating member 36 will permit of the revolving of the key plate 48. The latter cannot be shifted by the key 4 until the body 52 is shifted by the pin 32 to the position shown in Fig. 4 of the drawings. The pawl 52 is normally retained in engagement with the shoulder 50ª by a flat spring 53 having one end thereof engaging the wall of the opening 46 and the other end mounted in a slot 54 provided therefor in the pawl 52. The pawl 52 is normally engaged by a locking pawl 55 pivotally mounted upon a pin 56, carried by the plate 44. The locking pawl 55 is adapted to engage a shoulder 57 of the pawl 52, said locking pawl being normally held in engagement with the lower end of the pawl 52 by a flat spring 58 having one end thereof engaging the wall of the opening 46 and the other end mounted in a slot 59 provided therefor in the locking pawl. The locking pawl 55 is mounted upon a locking member 60 pivotally mounted upon the pin 56, said locking member having the lower end thereof provided with a tooth 61 adapted to engage the shoulder 51 of the key plate 48 and prevent said key plate from being rotated to the left or counter clockwise. The top portions of the edge of the plate is shaped to provide a cam surface 62 which, when the plate is shifted, will ride against the teeth 61 forcing the same into the opening 56. The teeth 61 of the locking member is normally maintained parallel with the shoulder 51 by the spring 58. The plate 28 has an opening 64 registering with a socket 65 formed in the innermost plate 29, said opening providing a bearing for the collar 66 of the crank 33 and the socket 65 clearance for the end of the operating pin 32.

It will be assumed that the parts are in position as shown in Fig. 3 of the drawing, although the key can be inserted in the openings 49 and 50, yet the key cannot be turned owing to the fact that the plate 48 is locked. To permit the operation of the key so that it can operate the hasp locking mechanism, it is necessary for the element 36 to be shifted inwardly so as to move the element 52 clear of the shoulder 50ª, as illustrated in Fig. 4. When the element 52 is moved to the position shown in Fig. 4, the dog 55 engages the shoulder 57 and holds the element 52 in such position. The plate 48 is released and the key can be turned, the key shifting the plate 48 therewith. During the movement of the plate 58, the cam surface 62 rides against the teeth 61 and forces the locking member in the opening 46. When the plate 48 is shifted to the position shown in Fig. 3 so that the openings 49 and 50 will register, the pin 32 is automatically shifted in the opposite direction due to the action of the spring 40, which causes the pawl 55 to move clear of the shoulder 57 and engage the lower edge of the pawl 52, as illustrated in Fig. 3, whereby the plate 48 is locked from movement until the pawl 52 is released.

What I claim is:—

In a lock mechanism, a lock body, plates carried by the front and rear sides thereof, an operating pin extending from the plates at the front side of said body through said body to the plates at the rear side thereof, a crank mounted upon said pin in one of the plates at the rear side of said body, an operating member arranged in the same plate and adapted to be actuated from the upper edge of said plate to move said pin, a key plate movably arranged in one of the plates at the front side of said body and having a key opening adapted to register with an opening in another of said plates, and means arranged within the plates for holding said key plate and operable by said pin for moving said key plate.

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

JOSEF DUNAI.

Witnesses:
LUOS SOFKA,
TROBÓ LOYOR.