Z. PEHEL.

LOCK.

APPLICATION FILED JUNE 13, 1919.

1,330,650.

Patented Feb. 10, 1920.

2 SHEETS—SHEET 1.

Fig. 1,

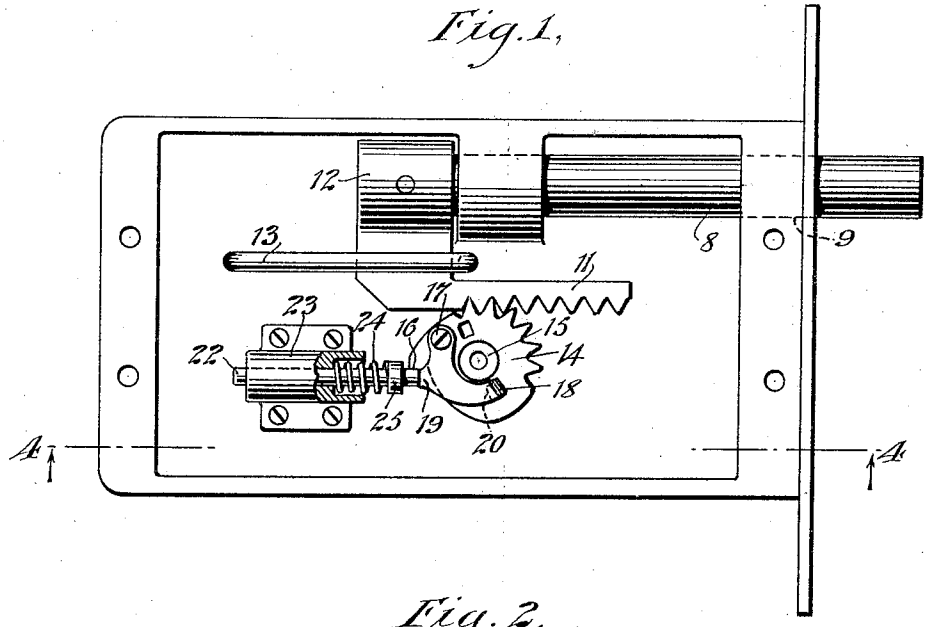


Fig. 2,

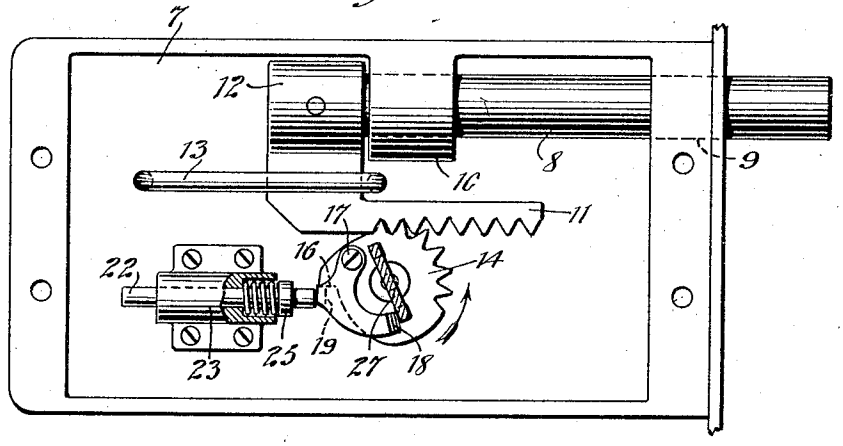
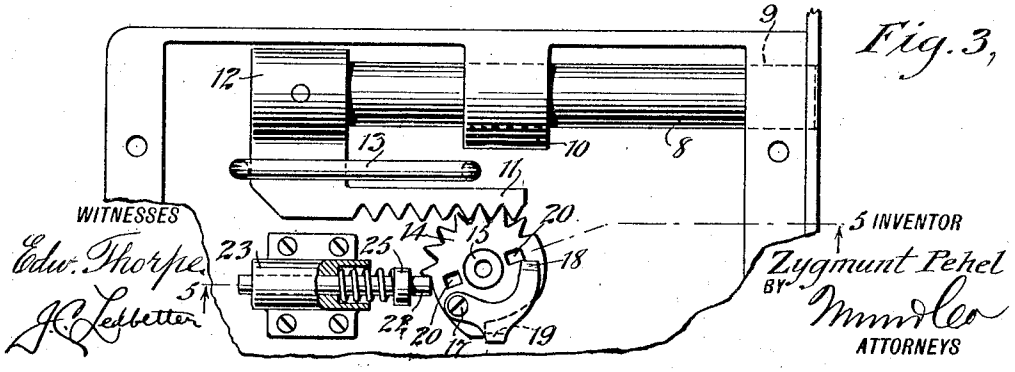


Fig. 3,



WITNESSES

Edw. Thorpe

J. C. Lesbetter

5 INVENTOR

Zygmunt Pehel

BY Munn & Co

ATTORNEYS

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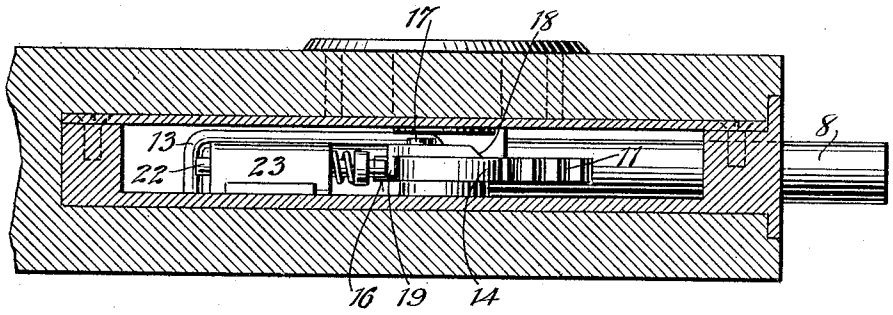
2 SHEETS—SHEET 2.

Fig. 4,



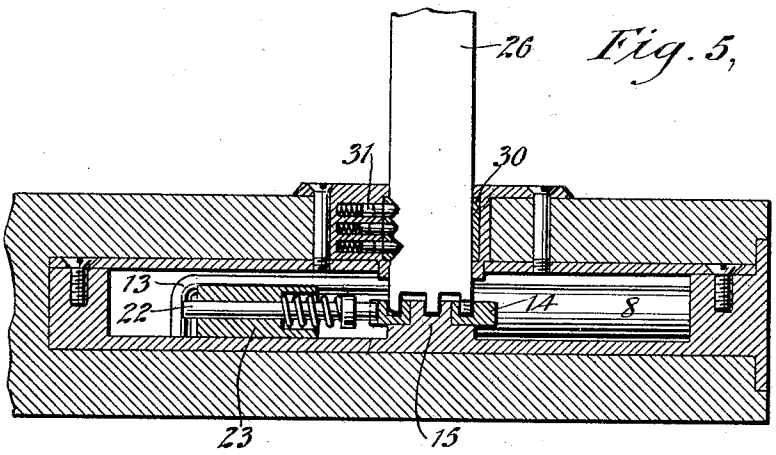


Fig. 5,

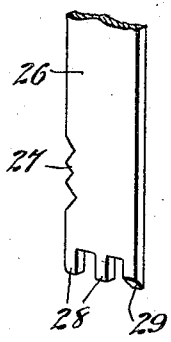


Fig. 6.

WITNESSES

Edw. Thorpe.

J. L. Lebbetter

INVENTOR

Zygmunt Pehel

BY

ATTORNEYS

UNITED STATES PATENT OFFICE.

ZYGMUNT PEHEL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-THIRD TO WOJCIECH ZYCH, OF ELIZABETH, NEW JERSEY.

LOCK.

1,330,650. Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed June 13, 1919. Serial No. 304,014.

To all whom it may concern:

Be it known that I, ZYGMUNT PEHEL, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, county of New York, and State of New York, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

This invention relates to locks, and particularly to a form of mortise lock adaptable for use in doors for securely locking same against entrance.

An object of the invention is to provide a simple and dependable form of lock which comprises a minimum number of parts, is simple in construction and operation, and unlikely to get out of working order.

Another object of the invention is to provide a lock consisting of a bolt actuated through simplified form of gear and rack which in turn is actuated by a key, said key being provided with a double set of notches in order to insure against possible opening of the lock by persons who have a variety of keys.

With the above principal objects, and others, in view, the invention has relation to a certain arrangement and combination of lock parts, and a key, a description of which is given in the following specification, pointed out in the appended claims, and illustrated in the accompanying drawings, wherein:

Figure 1 shows a plan view of the lock with the cover plate removed, and Fig. 2 shows the same view as Fig. 1 with a key inserted ready to unbolt the lock.

Fig. 3 shows the lock in unbolted position.

Fig. 4 shows a sectional view taken upon the line 4—4 of Fig. 1, and Fig. 5 illustrates a view taken upon the line 5—5 of Fig. 3, and Fig. 6 shows a detail perspective view of the key employed for actuating the lock.

Referring now more in particular to the drawings, the numerals 7 designates the casing of the lock in which is mounted and slidably confined a lock bolt 8 adapted to be projected and retracted through a hole 9 formed in the forward wall of the casing. The bolt is held in position by a guide bearing 10 integrally formed with the casing. A gear rack 11 integrally formed with a hub 12 is fixed to the bolt and confined in one plane of operation by a guide 13.

A gear sector 14 is pivotally mounted upon a boss 15 integrally formed on the inner wall of the casing. The gear sector engages with the gear rack to slide the bolt back and forth. The boss 15 is provided with a central bore which acts as a guide to receive the key, as later seen. The gear sector has formed on the periphery thereof a shoulder 16, and a pawl is pivotally mounted at 17 upon the gear sector. The pawl is provided with a beveled end 18 and with a shoulder 19. The pawl pivots about the center 7 so that the outer end 18 of the pawl will normally cover a key receptacle hole 20 formed in the gear sector.

A lock pin 22 is slidably confined in a guide 23. A spring 24 is confined on the lock pin betwen a collar 25 and the guide. The spring 24 functions to keep the lock pin 22 in a forwardly limited position to engage the rim of the gear sector.

When the lock is in closed or locked position, as shown in Fig. 1, the pawl 18 covers the key hole 20, and the lock pin 22 lies in locked engagement with the shoulder 16 of the gear sector. The end of the lock pin also rests contiguously with the shoulder 19 of the pawl. The lock pin, therefore, prevents the gear sector from turning and thus holds the bolt 8 in outwardly disposed position.

A key 26 is provided with tumbler notches 27 in one edge thereof and release notches 28 at the end thereof. One of the release notches is beveled on the end thereof, as shown at 29. The lock calls for this particular form of key provided with side tumbler notches and end release notches.

A tumbler mechanism comprising a casing fitted with a tumbler sleeve 30 is provided and secured to the face of the lock casing. The tumbler mechanism 31 may be of any approved type or design, and function to admit revolution of the tumbler sleeve when the proper key 26 is inserted in the lock.

Fig. 2 shows the key 26 thrust into position with the central release notch 28 confined in the guide central hole of the boss 15. This causes the beveled release notch 29 to engage the inclined face 18 of the pawl and rotate it about the center 17 until the lock pin 22 becomes desengaged from the shoulder 16 of the gear sector. This permits the gear sector 14 to revolve and thus move the bolt 8 inwardly to unlock the

lock. The bolt 8 will be returned to locked position by rotating the key, and when the said key is removed therefrom the spring 24 causes the pin 25 to seat against the shoulder 16 to prevent movement of the gear sector until the pawl again releases the lock pin 22 from said shoulder.

In order to unlock this form of lock it is necessary that a key provided with a double set of notches be employed. The notches 27 coöperate with the tumbler mechanism to admit the key passage, while the release notches 28 center the key in position, and the beveled notch 29 actuates the pawl to disengage the lock pin 22 from the shoulder.

This lock is dependable in use and provides absolute security against irresponsible persons.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent is:

1. A lock device comprising; a casing, fitted with a bolt, a gear rack fixed to the bolt, a gear sector engaging with the rack, a lock pin engaging the gear sector, and a release pawl employed to remove the lock pin out of engagement with the gear sector.

2. A lock device comprising; a casing, fitted with a bolt, a gear rack fixed to the bolt, a gear sector engaging with the rack, a lock pin engaging the gear sector, a release pawl employed to remove the lock pin out of engagement with the gear sector, and a key provided to displace the release pawl.

3. A lock device comprising; a casing, a bolt slidably confined therein, a gear rack fixed to the bolt, a gear sector engaged with the gear rack, a locking shoulder formed on the periphery of the gear sector, a locking pin engaging with the lock shoulder, a release pawl pivotally mounted on the gear sector, a shoulder formed on the release pawl and contiguously related with the lock pin.

4. A lock device comprising; a casing, a bolt slidably confined therein, a gear rack fixed to the bolt, a gear sector engaged with the gear rack, a locking shoulder formed on the periphery of the gear sector, a locking pin engaging with the lock shoulder, a release pawl pivoted on the gear sector and provided with a beveled end, a shoulder formed on the release pawl associated with the end of the lock pin, and a key provided with a beveled notch to engage the beveled end of the release pawl to move the lock pin out of engagement with the shoulder of the gear sector.

ZYGMUNT PEHEL.