(No Model.) 3 Sheets—Sheet 1.

# L. ENDRES.

## LOCK.

No. 562,515. Patented June 23, 1896.

Fig. 2.

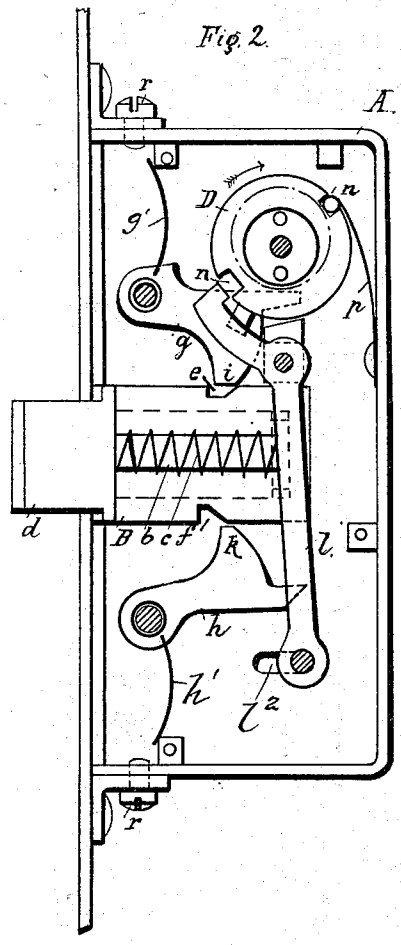



Fig. 1

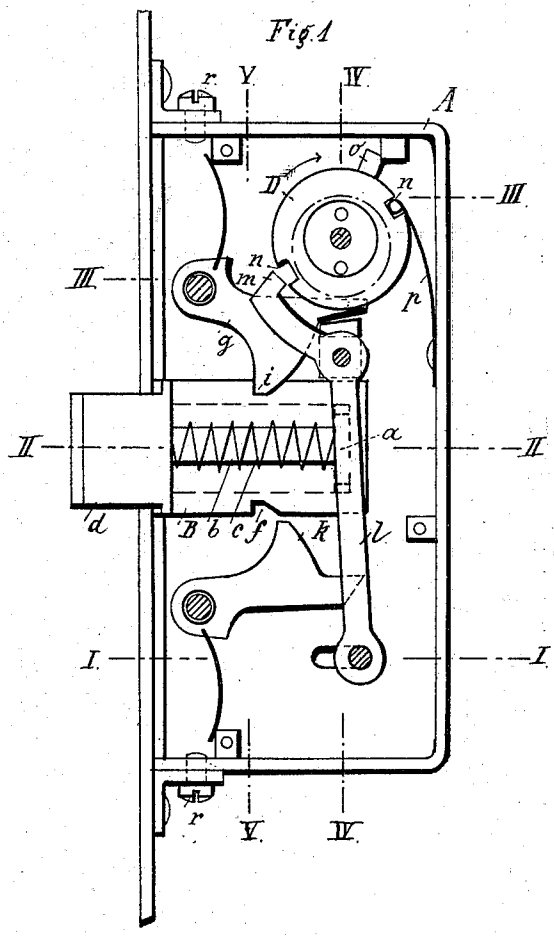



Fig. 5.

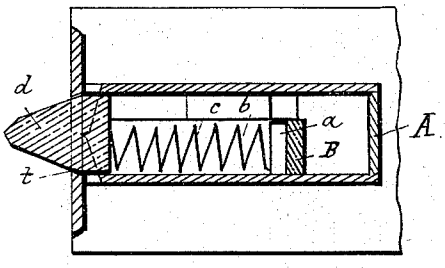
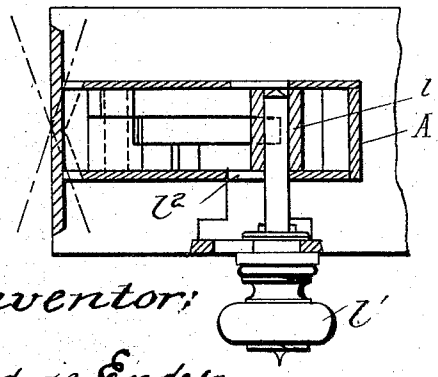



Fig. 6.

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(No Model.)

3 Sheets—Sheet 2.

# L. ENDRES.

## LOCK.

No. 562,515. Patented June 23, 1896.

Fig. 4

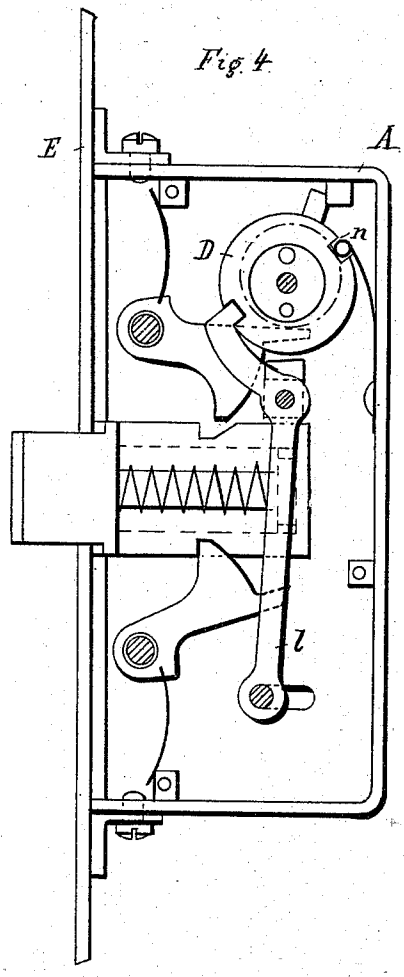



Fig. 3.

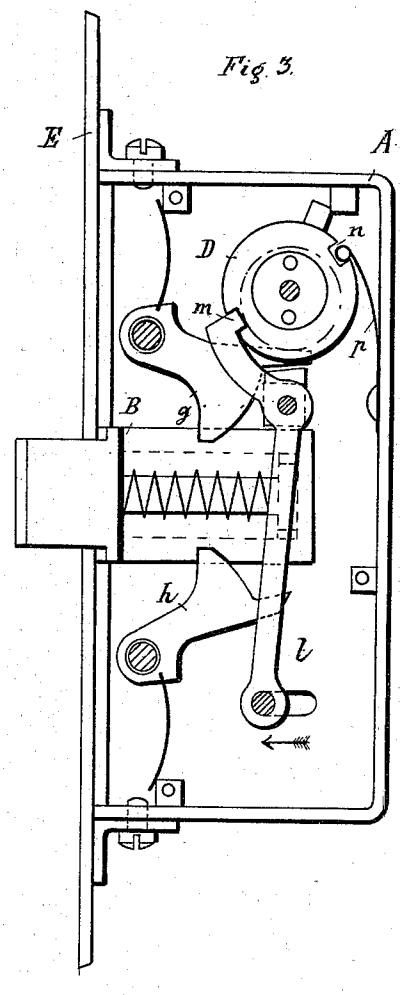



Fig. 8.

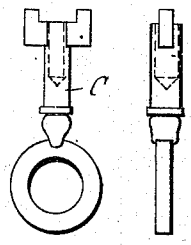
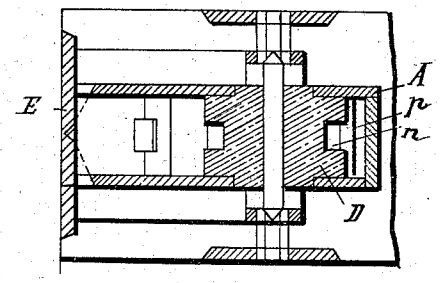



Fig. 7

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(No Model.)

3 Sheets—Sheet 3.

# L. ENDRES.

## LOCK.

No. 562,515. Patented June 23, 1896.

Fig. 10.

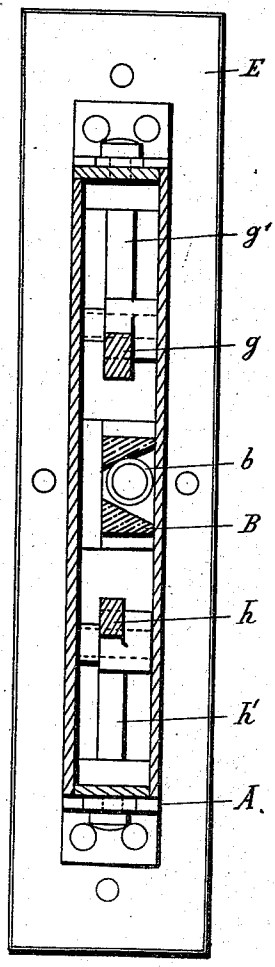
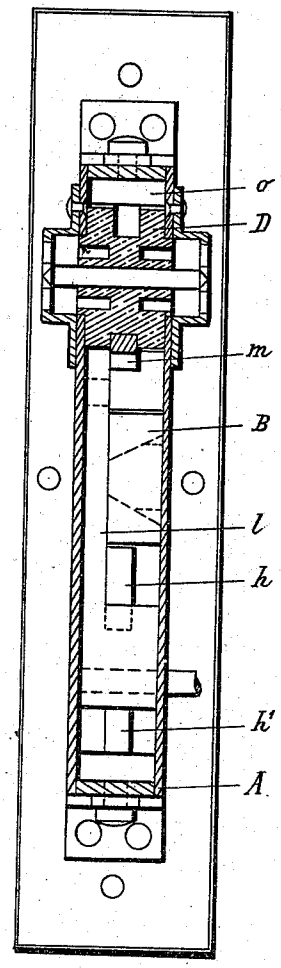



Fig. 9.

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# UNITED STATES PATENT OFFICE.

LUDWIG ENDRES, OF MÜLHEIM-ON-THE-MOSELLE, GERMANY.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 562,515, dated June 23, 1896.

Application filed April 13, 1894. Serial No. 507,500. (No model.)

*To all whom it may concern:*

Be it known that I, LUDWIG ENDRES, a subject of the King of Prussia, German Emperor, residing at the city of Mülheim-on-the-Moselle, Prussia, Germany, have invented an Improvement in Locks; and I hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

The invention consists in the combination of devices hereinafter set forth.

On the two sheets of drawings appended hereunto, Figure 1 shows the improved lock, with the cover removed, as locked by the key only; Fig. 2, the same in its unlocked position—that is to say, with the spring-bolt free to move; Fig. 3, the lock locked by the key and secured by the catch; Fig. 4, the same in its unlocked position, but secured by the catch; Fig. 5, a section along line I I; Fig. 6, a section along line II II; Fig. 7, a section along line III III, Fig. 1. Fig. 8 shows the key used in two views. Figs. 9 and 10 are longitudinal sections along lines IV IV and V V of Fig. 1.

In the lock-case A a bolt B is arranged sliding on a guide-block *a* and formed with a slot *b*, into which a helical spring *c* is inserted and presses the bolt outward. The head *d* of the bolt is chamfered on both sides toward the point in order to adapt the lock for doors opening to either side. By pushing against the door the bolt is pushed back and the door can be opened, when the bolt is not locked.

For locking the spring-bolt B notches *e* and *f*, Figs. 2 and 4, are formed in it, into which the catches *i* and *k* of the tumblers *g* and *h* can drop. The tumbler *g* is operated by the key C, by which for opening or shutting the lock the barrel D is turned from left to right or from right to left, respectively, Figs. 1 to 4, the eccentric middle part of the barrel depressing or releasing the tumbler *g*. The tumbler *h*, with the catch *k* entering the notch *f* on the bolt B, is operated by the catch-lever *l* acting on its inclined end. The upper end *m* of the lever enters a notch in the edge of barrel D when in the position for locking the bolt, and thus besides locking the bolt B locks the barrel D, so that the lock cannot then be opened even with the suitable key. The tumblers *g h* are subject to the action of springs *g' h'*, so that when these tumblers are released the springs withdraw the catches *i k* from the notches *e f*. The catch-lever *l* is operated by a knob *l'*, Fig. 6, the shank of which extends through a slot $l^2$ in the casing and is secured to the lower end of the lever.

In order to prevent the barrel D, with the two notches *n n*, being turned too far, a peg *o* is fixed in the same, coming against stops fixed to the lock-case, so that the barrel D can only be turned for half a revolution in one or the other direction. The spring *p*, fixed to the inside of the lock-case, holds the barrel in its locking and opening position, if the lever *l*, which is used as a night-latch, is not brought into action.

The lock arranged as above described may thus be secured either with the key, or the night-latch lever *l*, operated by its knob *l'*, or simultaneously by both of them. In Fig. 1 the key only has been used, the barrel D has been turned by it in the direction of the arrow, and the eccentric part of the barrel has pressed the tumbler *g* downward. The spring *p*, by springing into a notch *n*, secures the position of the barrel. The night-latch lever *l m* is in its inoperative position. If the barrel is now turned in the direction of the arrow on Fig. 2, the bolt B is liberated again, but remains pushed out by the spring *c*.

In Fig. 3 the bolt B is locked both by tumblers *g* and *h* or the lock is further secured in its locked position by the night-latch. The lever *l m* has been turned in the direction of the arrow from left to right, whereby the catch *m* has been entered into the notch *n* of the barrel D, so that the lock cannot now be opened even with the suitable key.

Fig. 4 shows the securing of the bolt D by the night-latch only. In this case also the lock cannot be opened with the key, as the movement of the barrel D is arrested.

Having now particularly described my invention, what I claim is—

In a mortise door-lock, the combination of the spring-bolt, the tumblers *g*, *h*, having the catches *i*, *k*, respectively, and adapted to enter the notches *e*, *f*, in the bolt, the eccentric barrel having a notch and adapted to operate

the tumbler *g*, the lever *l* arranged to operate the second tumbler *h* and having a catch *m* adapted to the notch in the barrel and the springs for withdrawing the tumblers when released from the bolt, the said eccentric barrel being arranged to be operated by the key, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

LUDWIG ENDRES.

Witnesses:
W. HAUPT,
G. WILLNER.