

Patented Dec. 30, 1884.

UNITED STATES PATENT OFFICE.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 309,963, dated December 30, 1884.

Application filed July 16, 1884. (No model.)

To all whom it may concern:

Be it known that we, ERNEST KORBEL and LOUIS KURZ, both of the city, county, and State of New York, have invented a new and useful Improvement in Locks; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to that class of locks known as "spring-locks," and has for its object the formation of a simple locking device, in combination with the latch-bolt of the lock, whereby a movement of the bolt may at pleasure be rendered impossible without the use of a properly-fitted key.

It consists in pivoting a stop or locking plate upon the sliding bolt or latch of the lock in such a position as that when properly set it will contact with the front edges of a series of sliding tumblers, and thereby prevent any movement of the bolt until such time as the tumblers are so moved by a properly-fitted key as to bring a series of notches or slots formed in their front edges into line with each other, and into register with the stop upon the bolt, so that the edge of the stop may enter said notches to permit a movement of the bolt.

In the accompanying drawings, Figure 1 is an interior view of our improved lock, showing the locking-plate and illustrating the movement thereof; Fig. 2, a transverse section on line *xx* of Fig. 1; Fig. 3, a view of the inner or under side of the covering-plate carrying the tumblers; Fig. 4, a plan view of the key required to open our improved lock, and Fig. 5 a side view of one of the sliding tumblers of the lock.

A is the body of the lock, provided with a rim, H, fixed thereto to form the sides of the case. Through the front end of this case works the spring-actuated latch-bolt B, beveled toward its inner side to make it self-acting in one direction. The portion of the bolt working within the case is preferably made in the form of a frame, B', working between the guides B² B², and a spring, C, is placed to one side thereof, upon a rod, C', fixed to the frame, and working through one of the guide-blocks, G, upon the case. The tendency of the spring is to throw the bolt forward. The bolt is op-

erated to withdraw it by an ordinary knob, (not shown in the drawings,) the spindle of which passes through the cam D, which is adapted to bear against the rear end of the frame B', carrying the bolt, or upon lugs formed thereon. Upon the forward end of the bolt and within the case is pivoted a stop-plate, E, of irregular shape, (see Fig. 1,) and immediately behind this plate are placed the sliding tumblers F, working in a case, F', attached to the outer lock-plate, K. These tumblers are in the form of thin plates (see Fig. 5) placed within their case side by side, to play at a right angle with the bolt, and with their edges toward the front end of the lock, as illustrated in Fig. 2, and they project slightly within the case A, in such a position as to engage the rear edge of the plate E and prevent a movement of the bolt B, to which said plate is attached. These tumblers are held within their case by means of a set of springs, F², attached to the inner side of the case A, as shown in Figs. 2 and 3. In the front edge of each tumbler F, and at a distance from its lower end, which differs in each, a slit or notch, *f*, is formed, the depth of which is determined by the extent of the movement required in the bolt to withdraw the latch from its guard.

To retract the bolt or latch, it is necessary to press inward upon the tumblers so that the slits or notches *ff* in all of them will fall into the same right line in register with the edge of the plate E, (see dotted lines, Fig. 2,) and this is accomplished by means of a key, M, Fig. 4, formed at its end into wards of different lengths. (See Fig. 4.) The plate E is partially cut away, (see at *r*, Fig. 1,) so that when turned in one position (see full lines, Fig. 1) it will allow the bolt to move without coming into contact with the tumblers; but when the plate is turned upon its axis, so as to bring its edge against the front of the tumblers, (see dotted lines, Fig. 1,) it will strike against the lower edge of the tumblers, (see Fig. 2,) and thereby securely lock the bolt B in its outwardly-projecting position. This movement of the plate E is accomplished by means of a knob, E², formed upon the spindle E', upon which the plate E is mounted, and which is made to project through the case on one side of the lock.

We claim as our invention—

The combination, in a lock, with a spring-actuated bolt, and with one or more adjustable tumblers supported at right angles thereto, of an adjustable stop-plate pivoted upon the bolt
5 and adapted to engage the tumblers, and thereby prevent a movement of the bolt until, by their adjustment, a notch in each is brought into register with all the others and with the stop-plate, to permit the latter to enter said
10 notches, substantially in the manner and for the purpose herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ERNEST KORBEL. [L. S.]
LOUIS KURZ. [L. S.]

Witnesses:

HENRY METZ,
E. C. PERKINS.