

119,036.

Patented Sep. 19, 1871.

Fig. 8.

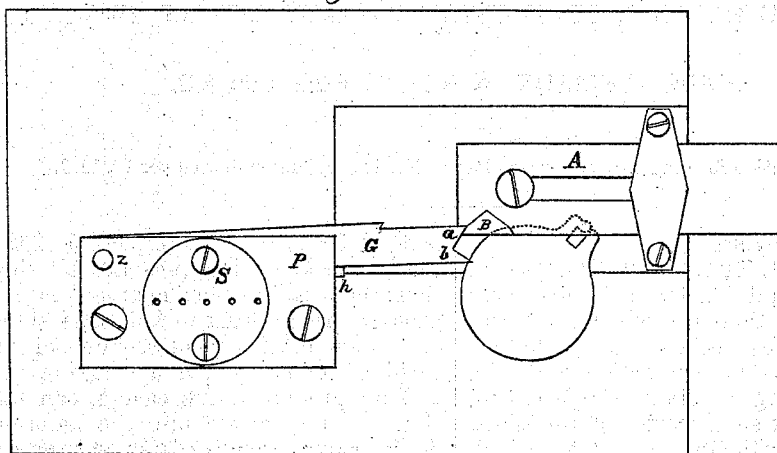
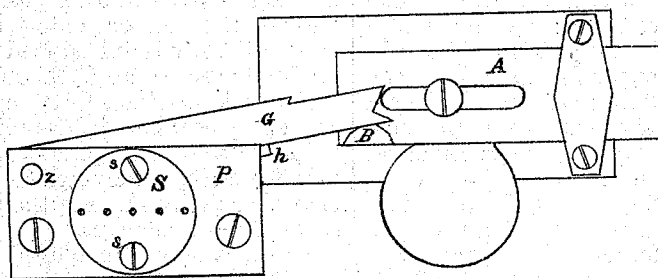


Fig. 9.



Witnesses,

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IMPROVEMENT IN BOLTS FOR LOCKS.

Specification forming part of Letters Patent No. 119,036, dated September 19, 1871.

To all whom it may concern:

Be it known that I, THEODORE KROMER, of Neustadt, in the Grand Duchy of Baden, have invented an Improved Construction of Locks and Latches; and do hereby declare that the following description, taken in connection with the accompanying drawing, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent—that is to say:

My invention relates to door-locks; and the nature thereof consists in certain improvements and modifications in the details of the construction of the same, as hereinafter shown and described.

The arrangement which it is preferred to employ is shown in the accompanying drawing, in which Figure 1 shows a front view of the lock. Fig. 2 shows a side view, partly in section. Fig. 3 shows a section on line X X, Fig. 1. Fig. 4 shows a plan, and Fig. 5 shows the key to the lock. Figs. 6, 7, 8, and 9 illustrate the construction and arrangement of the sliding bolt.

The lock consists of the rectangular (or otherwise shaped) casing P, with a cylindrical projection, P', in which are formed five or any other desired number of cylindrical recesses, 1 2 3 4 5, arranged in a line with each other. At the front end these recesses are reduced in size, as shown, while at the back end they are closed by a plate, S, secured by screws s s to the casing P. In the recesses are fitted sliding pins C¹ C² C³ C⁴ C⁵, inserted from the back end, and having each a series of annular grooves, as shown, one groove of each being of greater depth than the others, which deep grooves are situated at different distances from the ends of the pins. Behind the pins are inserted spiral springs F F, which, when the pins are not acted upon by the key, press the pins outward against the front ends of the recesses, where they are retained by the shoulders formed by the reduced apertures. The key L, Fig. 5, has a row of pins corresponding in number and position to that of the apertures in the lock, while the length of each pin corresponds with the distance of the deep groove from the inner or back end of the respective sliding pin upon which it

acts, so that by the introduction of the key into the lock the sliding pins are all depressed in their recesses in such a manner that all the deep grooves are brought in a line, as shown in Fig. 3. When in this position the bolt or latch G, turning upon a pin, Z, and fitting into a longitudinal groove in the casing, can fall with its thin lower edge *h i* into the before-mentioned deep grooves or notches, so as to assume the position shown in full lines in Fig. 1, in which position the lock or latch is open. If the latch G be raised by any suitable means slightly out of the deep grooves of the pins C, (the key having been removed,) these are pushed forward by the springs F, whereupon the catch cannot fall beyond the dotted position G¹, in which case it is locked, at the same time catching into the shallow notches of the pins C. If it be desired to unlock the latch again, it must first be raised still higher—say into the position G²—so as to be clear of the shallow notches of the pins, after which the key is introduced as before, and the latch allowed to fall in the lowest position.

The picking of this lock may be effectually prevented by occasionally changing the relative positions of the sliding pins C, (which may be readily effected by removing the plate S,) and also changing the position of the pins of the key in a corresponding manner.

This lock may be employed in conjunction with a sliding bolt, the arrangement of which is shown at Figs. 6 and 7, where G is the latch of the before-described lock, (viewed from the opposite side to that shown in Fig. 1,) and A is the sliding bolt, both of which are supposed to be fixed against a door to be fastened by the sliding forward of the bolt A. This bolt is so arranged that its outer face can just slide behind the inner face of the latch G, as indicated. It is provided with a triangular projection or stud, B, projecting somewhat over the latch. When the bolt is shot forward and the lock is locked, as shown most distinctly in Fig. 8, and it is endeavored to push the bolt back, the stud B strikes against the surface *a b* of the notch in the latch and raises the latter slightly until the stud arrives at the bottom of the notch, when any further backward motion of the bolt is impossible. When it is desired to unlock the lock and withdraw the bolt, this is slid back as just described, thereby raising the latch sufficiently to clear all the notches

of the sliding pins C, Fig. 3, whereupon these pins are moved by the action of the key so as to bring the deep grooves in a line with the latch, as before described. The bolt A is now again slid forward so as to allow the latch G to fall into its lowest or unlocked position, as shown in dotted lines at Fig. 6, (corresponding with the position G at Fig. 1,) whereupon the bolt A, with its stud, will be free to slide back along the upper edge of the latch until the bolt arrives in the dotted position, Fig. 6. Here the stud B comes in contact with the projecting inclined surface *d c* of the latch, so that by sliding the bolt still further back it raises the latch by causing the inclined surface *d c h* thereof to slide along the stud, as indicated in Fig. 7, the latch being grooved, as shown more clearly in Fig. 4, to allow this motion. By thus raising the latch the pins C are again free to be moved forward out of the unlocked position by the springs F, so that when the bolt is again shot forward for locking the door (during which motion the stud B slides underneath the latch, as shown in Fig. 9) the latch will again fall into the locked position at Fig. 8.

Having thus described the construction, operation, and relative arrangement of the component parts of a lock or latch embodying my invention, I will indicate in the following clauses what I claim and desire to secure by Letters Patent—that is to say:

I claim—

1. The bolt A provided with the stud B, in combination with the latch G provided with the notches *a b* and *d c h*, when operating together, as described.

2. The arrangement and combination of casing P, row of notched sliding pins C, springs F, latch G provided with notches *a b* and *c d h*, and bolt A provided with the stud B, operating together, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 28th day of December, 1870.

THEODORE KROMER.

Witnesses:

SIMON MAYER,
BLASIUS BRUGGER.