

M. BADONI.
LOCK.

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UNITED STATES PATENT OFFICE.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 501,640, dated July 18, 1893.

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To all whom it may concern:

Be it known that I, MASSIMILIANO BADONI, mechanician, of Geneva, Switzerland, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification.

In this lock the case is made of two parts adapted to be connected together, the one sliding or telescoping within the other to vary the distance between the edge of the door and the key-hole. The spring catch is in a case fixed to the door frame and catches into the lock case, and there is a pusher rod actuated by the handle mechanism to push back the catch when the door is to be opened. A frictional sliding tumbler acted upon by the key, and a spring locking arm are used to raise the pusher rod into position to be acted upon by the handle mechanism, or to draw down such pusher and prevent the door being opened by the handle.

In the accompanying drawings, Figure 1 is a face view of the latch case and latch. Fig. 2 is a back view of said parts with the latch pushed into the case and its spring compressed. Fig. 3 is a similar back view of the same parts with the latch thrown outward by the spring. Fig. 4 is a cross section of the latch and latch case. Fig. 5 shows the latch case spring separately. Fig. 6 is a perspective view of the latch separately. Fig. 7 is an elevation of my improved lock mechanism with the plates removed and in the position which the parts would assume when locked. Fig. 8 is a horizontal section of the same. Fig. 9 is a view similar to Fig. 7 but showing that the handle of the lock may be depressed without operating the mechanism. Fig. 10 is a horizontal section of the parts in Fig. 9. Fig. 11 is an elevation of the lock mechanism, the parts being in the position when operated by the key preparatory to unlocking the door. Fig. 12 is a horizontal section of the parts in Fig. 11. Fig. 13 is a view similar to Fig. 11 but with the parts in the position they will assume upon the depression of the handle and the releasing of the mechanism preparatory to opening the door. Fig. 14 is a horizontal section of Fig. 13. Fig. 15 is a view

similar to Fig. 14 but with the door shown partially open.

In all the figures the same letters of reference refer to the same parts.

A, A', A², and A³ represent the parts of a casing, there being an opening through the part A for the latch and pusher.

B represents the box of the lock mechanism through which passes the spindle and in which are the key-holes.

Through the casing are provided holes at a^3 along the upper and lower edges adapted to receive screws a' by which said casing and box are secured together and to the face of the door. Figs. 7, 9, 11 and 13 show the most distended relation of the casing and box. These parts may be thus connected in more contracted positions, the various holes a^3 determining said positions.

Within the box B is the lock mechanism. This consists of a rocking lever D having projections d' d^2 , a helical spring F acting between the lock case and the projection d' to establish a normal position for the rocking lever D and the handles E carried thereby.

G represents a pin or pusher passing through the box B and through the casing and being provided with a collar g .

H represents the latch of segmental form having a bearing edge at h' , a bearing face h^2 and a pin or screw head h^3 . The casing I adapted to be secured to the casing of a door is made with an opening to receive the latch H, and this opening is provided with a groove i' which receives the edge of the latch H, when in position. A spring h is within the casing I, one end of said spring bearing against the casing and the other end against the bearing face h^2 and acting to press the catch outwardly. The spring h is maintained in the casing I in operative contact with the latch H in any desired manner.

Within the box B of the lock is a sliding tumbler K of peculiar form, as shown, and the same is provided with a spring k which acts to maintain said tumbler in position frictionally wherever placed. Pivoted to the tumbler K is an arm K' provided with a spring k' and a finger k^2 . The pusher G

passes through the upper end of the arm K' and its collar g comes against the same, and a hole is provided in a division plate of the box B to receive the finger k^2 .

5 Figs. 7, 8, 9 and 10 show the parts in the position they would assume when the door is locked, the tumbler K being in its lowest position and the pusher G depressed at its back end where it is out of the way of the projection d^2 , so that the depression of the handles E and movement of the rocking lever D, fail to engage or in any manner operate the mechanism of the lock. If the key L is inserted and the tumbler K raised to the position Fig. 11, the pusher G is brought to a nearly horizontal position where the same can be operated by the depression of the handle and movement of the rocking lever D, which depression is shown in Figs. 13 and 14 wherein the operation of the pusher retracts the latch H so that the door can be opened.

In the position Fig. 13 and as soon as the parts are operated by the depression of the handle, it will be noticed that the forward movement of the pusher G and its collar g releases the arm K' so that the finger k^2 enters the hole provided for its reception. In this position the key cannot be employed to return the sliding tumbler K to its normal position. This can only be effected by the backward movement of the pusher G either in the act of shutting the door and the pusher coming against the latch H and being thrown back by the superior power of its spring h , or else being operated when the door is open by the finger pushing in the pusher G.

Supposing the parts to be in the position Figs. 13 and 14 with the door opened and the tumbler K held in its highest position, it will not be possible for a person to lock himself into a room, because if the door should be accidentally shut the parts would only be returned to the position Fig. 11 where a second depression of the handle from within would return the parts to the position Fig. 13, wherein the latch H is pushed in and the door can be opened.

From the foregoing description it will be apparent that when the door is shut and locked the mechanism cannot be operated by the depression of the handle; also when the door is open the mechanism cannot be operated by the key because the parts are in the position shown in Fig. 13 wherein the tumbler K is locked; also that should the door be accidentally shut, a person cannot be locked into a room, because this returns the parts to the position Fig. 11 where the further depression of the handle releases the catch so that the door can be reopened, or the

key can be operated to draw down the tumbler K to return the parts to the position Fig. 7 and lock the door.

Fig. 15 shows a door opening at one side and my improvements adapted thereto, but it is apparent that said parts are equally well adapted to a door opening at the other side when they are simply turned over.

I claim as my invention—

1. In locks the combination with the box B. containing the lock mechanism; of a hollow case having an opening for the latch and composed of parts adapted to telescope over the top, bottom and front of said box B. and to be secured adjustably thereto, substantially as set forth.

2. In locks, the combination with the handles and the mechanism operated thereby, of a longitudinally movable pusher bar, a sliding tumbler adapted to be maintained frictionally in position and to be moved by a key, and a spring actuated arm connected to the tumbler, and means for locking the same in its extended position, said arm engaging the pusher bar to impart a vertical movement thereto, whereby the handle mechanism and the pusher are in operative engagement in one position of the tumbler and are separated in the other position, substantially as set forth.

3. In locks, the combination with a rocking lever D and handles and a spring for maintaining their normal position of a pusher G, a sliding tumbler K adapted to be maintained frictionally in position, a pivoted interlocking arm engaging the pusher G and adapted to lock the sliding tumbler in one of its positions, and a collar on the pusher adapted to release the arm, substantially as set forth.

4. In locks, the combination with a rocking lever D and handles and a spring for maintaining their normal position, of a pusher G, a sliding tumbler K adapted to be maintained frictionally in position, a pivoted interlocking arm engaging the pusher G and adapted to lock the sliding tumbler in one of its positions, a collar on the pusher adapted to release the arm, the casing I, and the spring actuated latch H adapted to engage and to move endwise the pusher G to release the mechanism and which is in turn operated by said pusher by the depression of the handle in opening the door, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MASSIMILIANO BADONI.

Witnesses:

E. IMER SCHNEIDER,

A. REVILLIOD DE MURALT.