

No. 865,421.

PATENTED SEPT. 10, 1907.

P. MÜLLER.  
LOCK.

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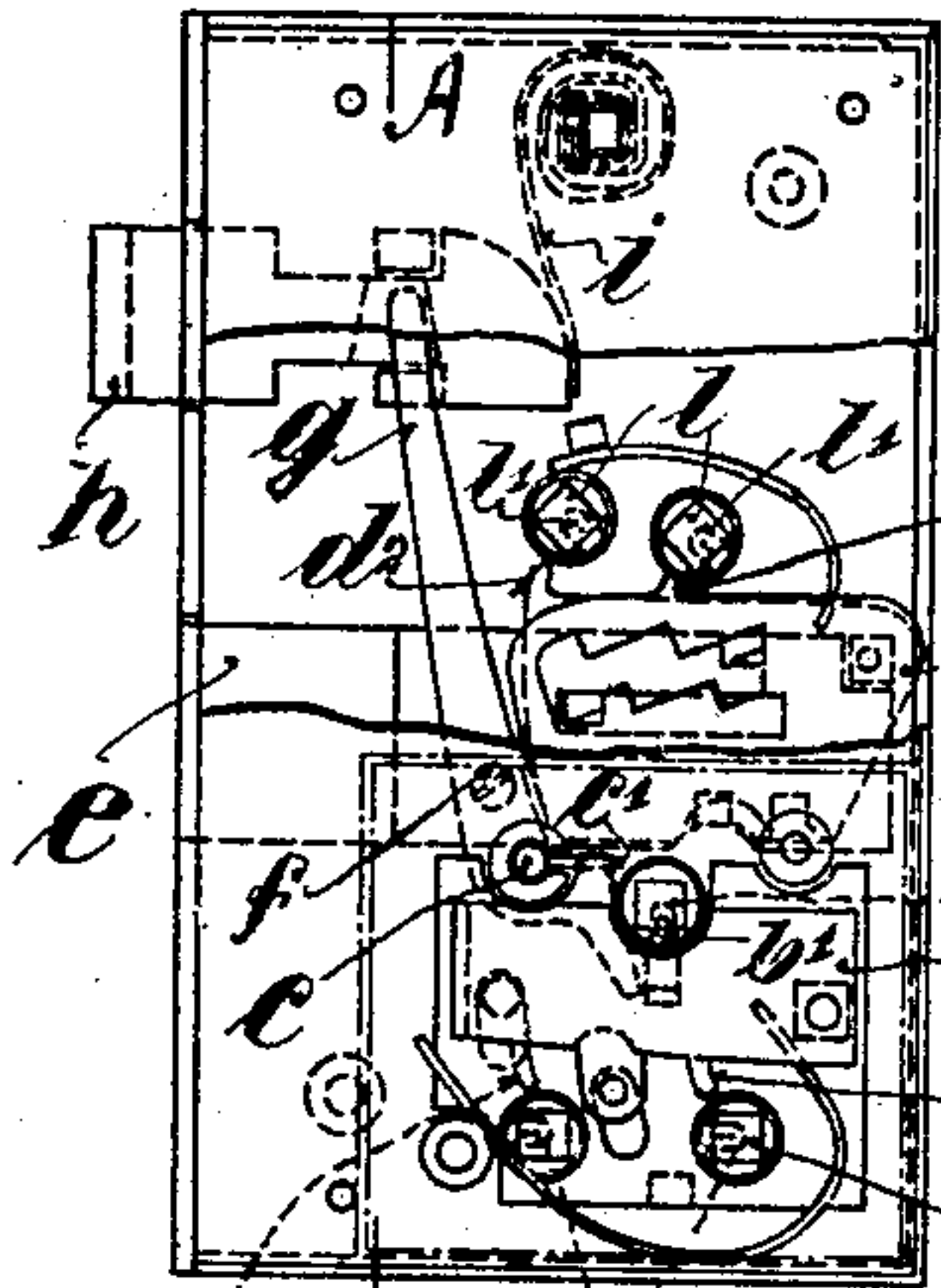


Fig. 1

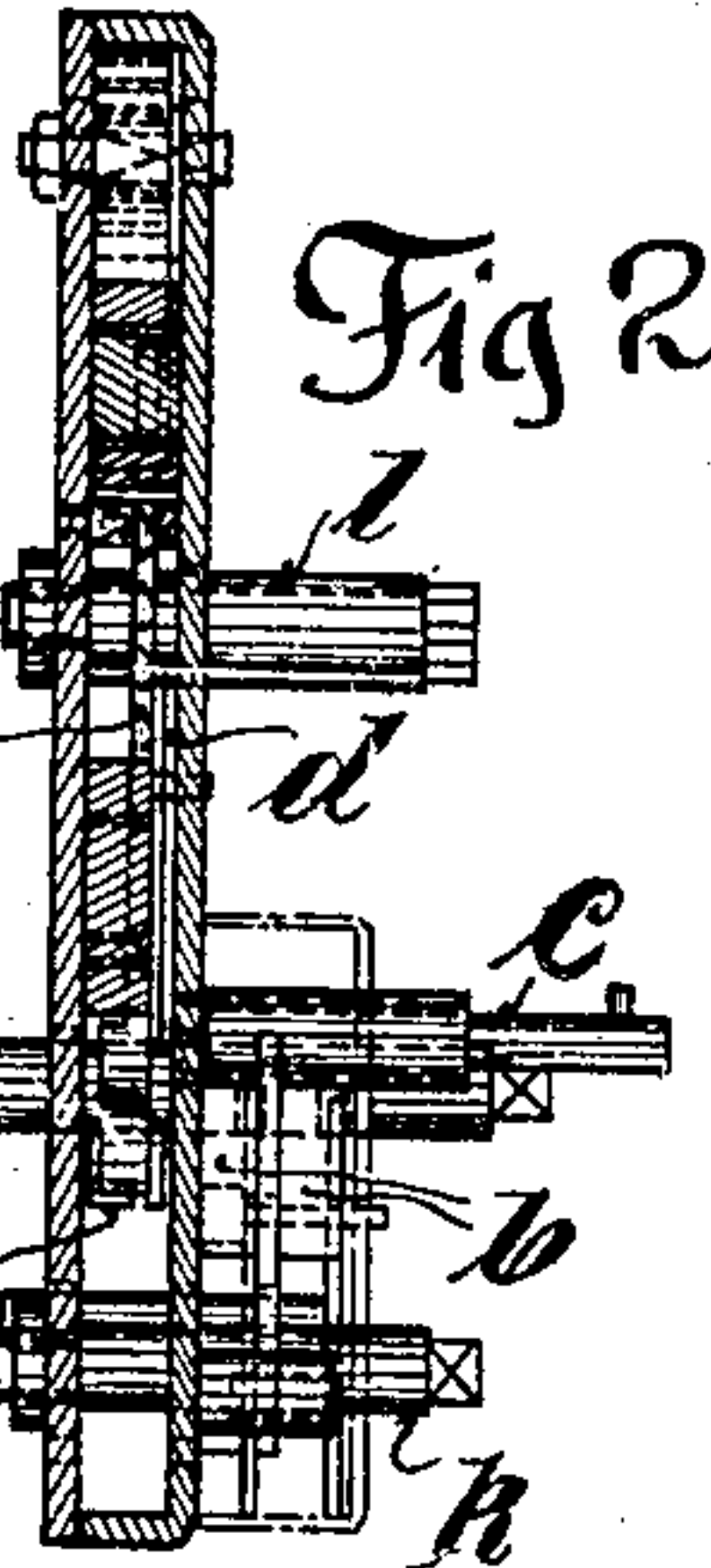


Fig. 2

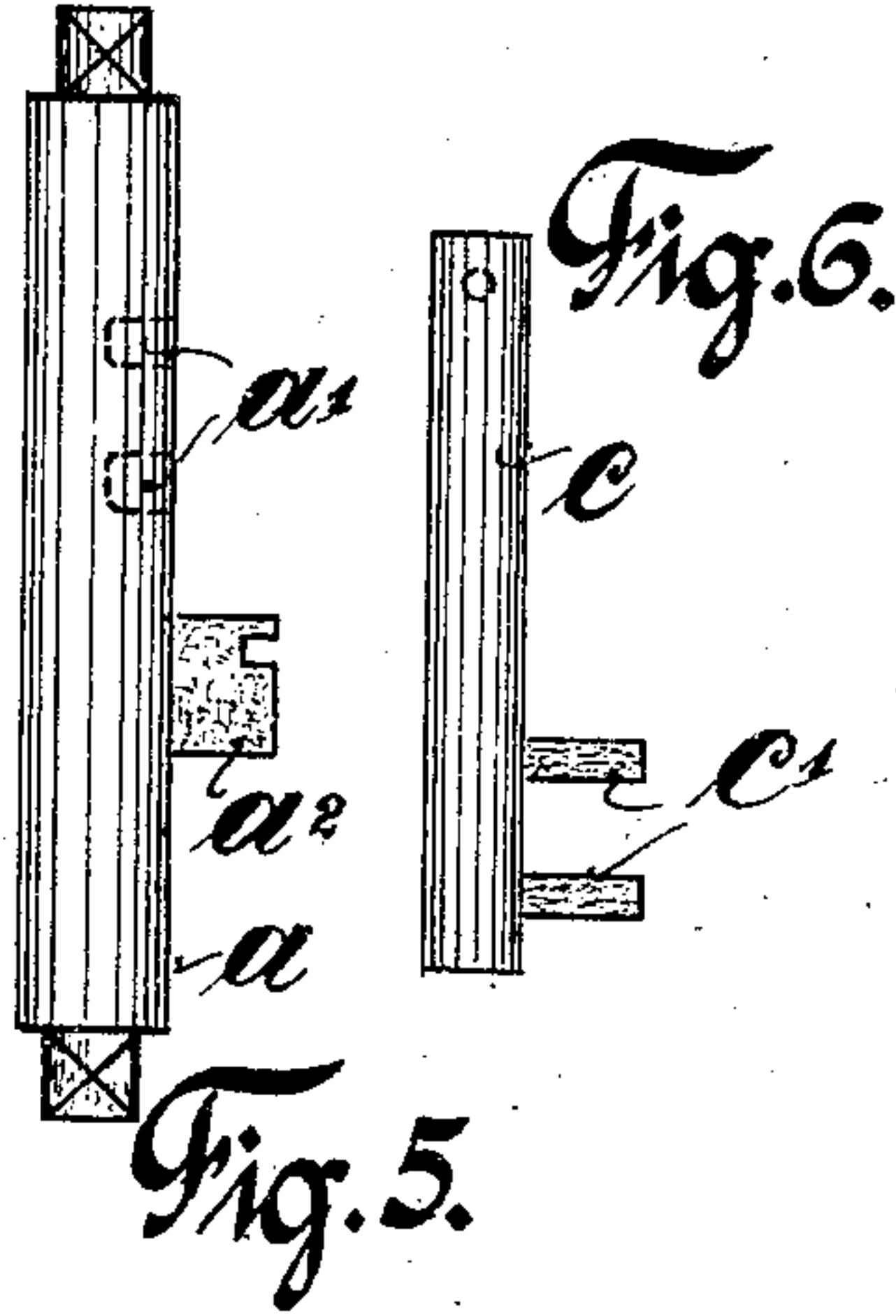


Fig. 6.

Fig. 5.

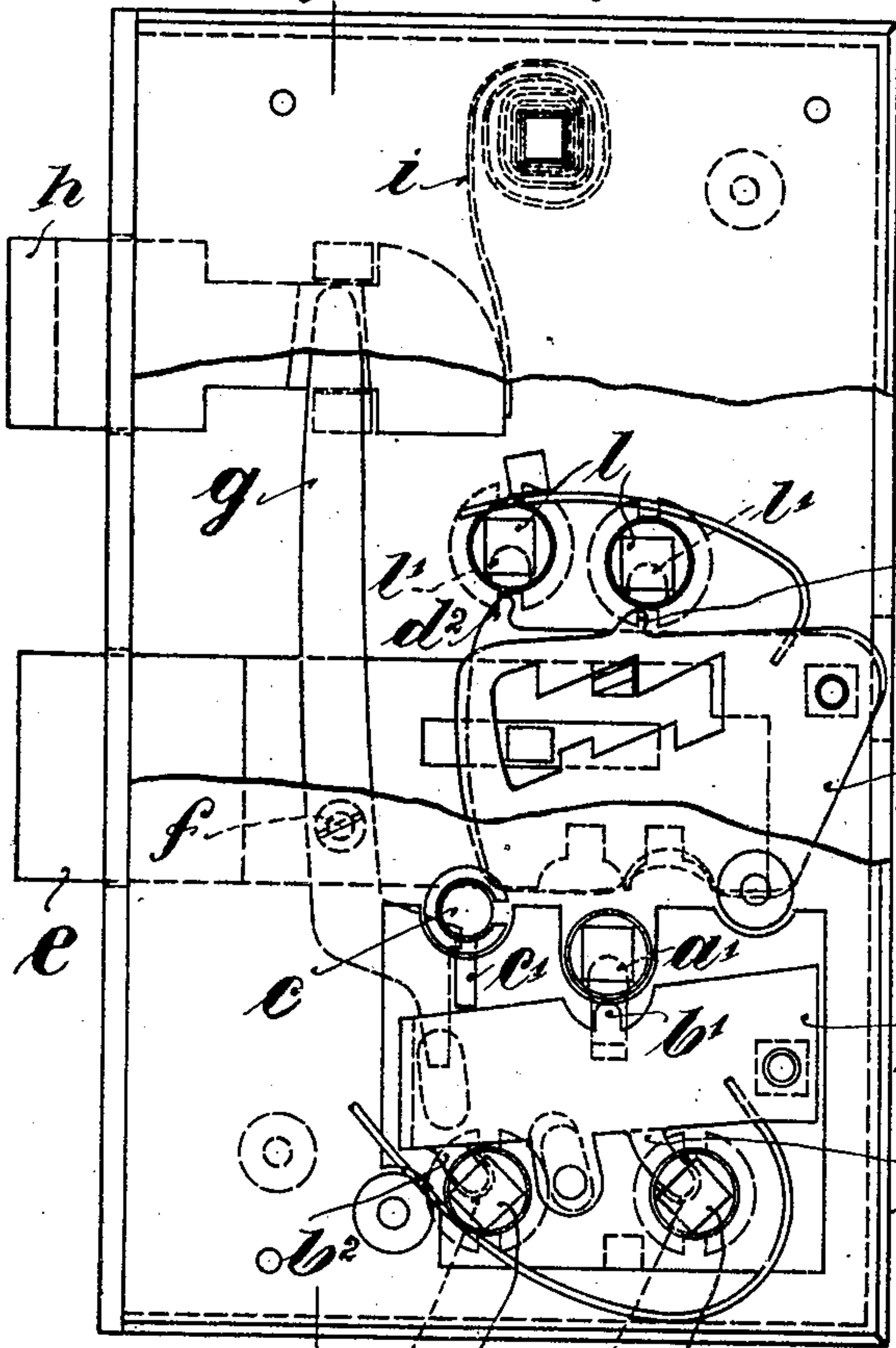


Fig. 3.

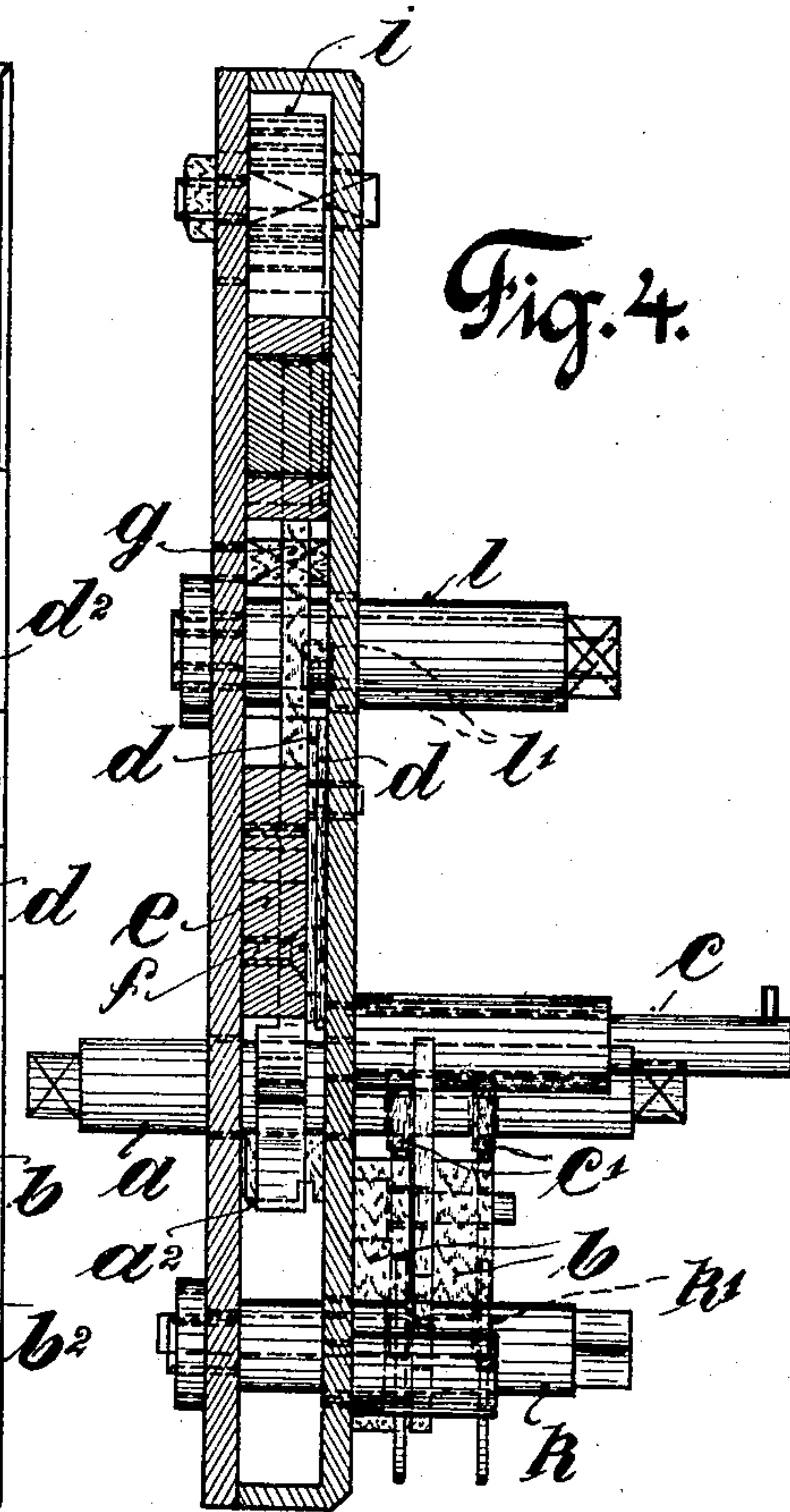


Fig. 4.

Witnesses *P. Hadden*  
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Inventor  
*Paul Müller*  
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# UNITED STATES PATENT OFFICE.

PAUL MÜLLER, OF Breslau, GERMANY.

## LOCK.

No. 865,421.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed April 6, 1907. Serial No. 366,766.

To all whom it may concern:

Be it known that I, PAUL MÜLLER, a subject of the German Emperor, residing at Breslau, Germany, have invented certain new and useful Improvements in  
5 Locks, of which the following is a statement.

This invention relates to a safety lock, having a main key which is built in the lock case and is itself locked by tumblers. This lock differs from other  
10 known locks of the same type since the tumblers securing the main key can only be disengaged therefrom by means of a second or auxiliary key which is introduced through a special key hole.

The invention is illustrated in the annexed drawing in which

15 Figure 1 shows the lock in the open position with the second or auxiliary key inserted, Fig. 2 is a section on the line A—A of Fig. 1; Fig. 3 shows on a larger scale the positions of the parts after one turn of the main key; Fig. 4 is a section on the line B—B of Fig. 3,  
20 Fig. 5 is a side view of the main key, and Fig. 6 a side view of the auxiliary key.

$a$  is the main key, which is inclosed in the lockcase. For security against unauthorized turning, this key is provided with two recesses  $a^1$ , which can be entered  
25 by projections  $b^1$  of the tumblers  $b$  placed below them and acted on by the auxiliary key  $c$ . If the auxiliary key  $c$  is turned to the right, the tumblers  $b$  are depressed by the bit  $c^1$  of this key  $c$ , and the projections  $b^1$  are thus removed from the recesses  $a^1$  so that the  
30 main key  $a$  can be turned by means of a removable handle engaging its squared end. The tumbler  $d$  is by this means operated and at the same time the bolt  $e$  is shot. Fig. 1 shows the position of the bolt after one complete turn of the key  $a$  to the right. After the  
35 second turn the key bit  $a^2$  of key  $a$  also acts on the double-armed lever  $g$  fulcrumed at  $f$  to the bolt  $e$ , and by this means pushes back the latch  $h$  which is thrust back to its normal position by the spring  $i$  when the key bit has cleared the lever  $g$ .

40 The unauthorized opening of the lock by means of a false key, can be prevented by suitable known arrangements, one of which is shown in the drawing.

For this purpose projections  $b^2$  and  $d^2$  may be provided on the tumblers  $b$  and  $d$ ; adjacent these projections there are arranged rotatable pins  $k$  and  $l$ , provided with recesses  $k^1$  and  $l^1$  adapted to be entered  
45 by the projections  $b^2$  and  $d^2$ . If the pins  $k$ , or even only one of them, is or are turned by means of a suitable implement the key  $c$  cannot be turned to unlock the main key, the movement of the tumblers  
50  $b$  being prevented. If in addition to the pins  $k$  the pins  $l$  are rotated the lock cannot be opened even if an unauthorized person should by repeated attempts succeed in properly adjusting the pins  $k$  to disengage the  
55 tumbler  $b$ , because the upward movement of the tumbler  $d$  and the turning of the principal key to thrust back the bolt  $e$  would be prevented.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. In a lock the combination of a lock case, a dead bolt, tumblers therefor, a rotatable main key inclosed in the lock case and retained thereby adapted on revolution to operate the dead bolt, further tumblers for engaging said main key and locking it against revolution, and means  
60 permitting a removable auxiliary key to retract said further tumblers.

2. In a lock the combination of a lock case, a dead bolt, tumblers therefor, a rotatable main key inclosed in the lock case and retained thereby adapted on revolution to operate the dead bolt, further tumblers for engaging said  
70 main key and locking it against revolution, means permitting a removable auxiliary key to retract said further tumblers, a lever pivoted to the dead bolt and a latch adapted to be operated by movement of said lever when within the circle described by the main key bit.  
75

3. In a lock the combination of a lock case, a dead bolt, tumblers therefor, a rotatable main key inclosed in the lock case and retained thereby adapted on revolution to operate the dead bolt, further tumblers for engaging said  
80 main key and locking it against revolution, means permitting a removable auxiliary key to retract said further tumblers and rotatable recessed pins operating to prevent disengagement movement of the tumblers.

In witness whereof I have signed this specification in the presence of two witnesses.

PAUL MÜLLER.

Witnesses:

HERMANN MENZ,  
ERNST KATZ.