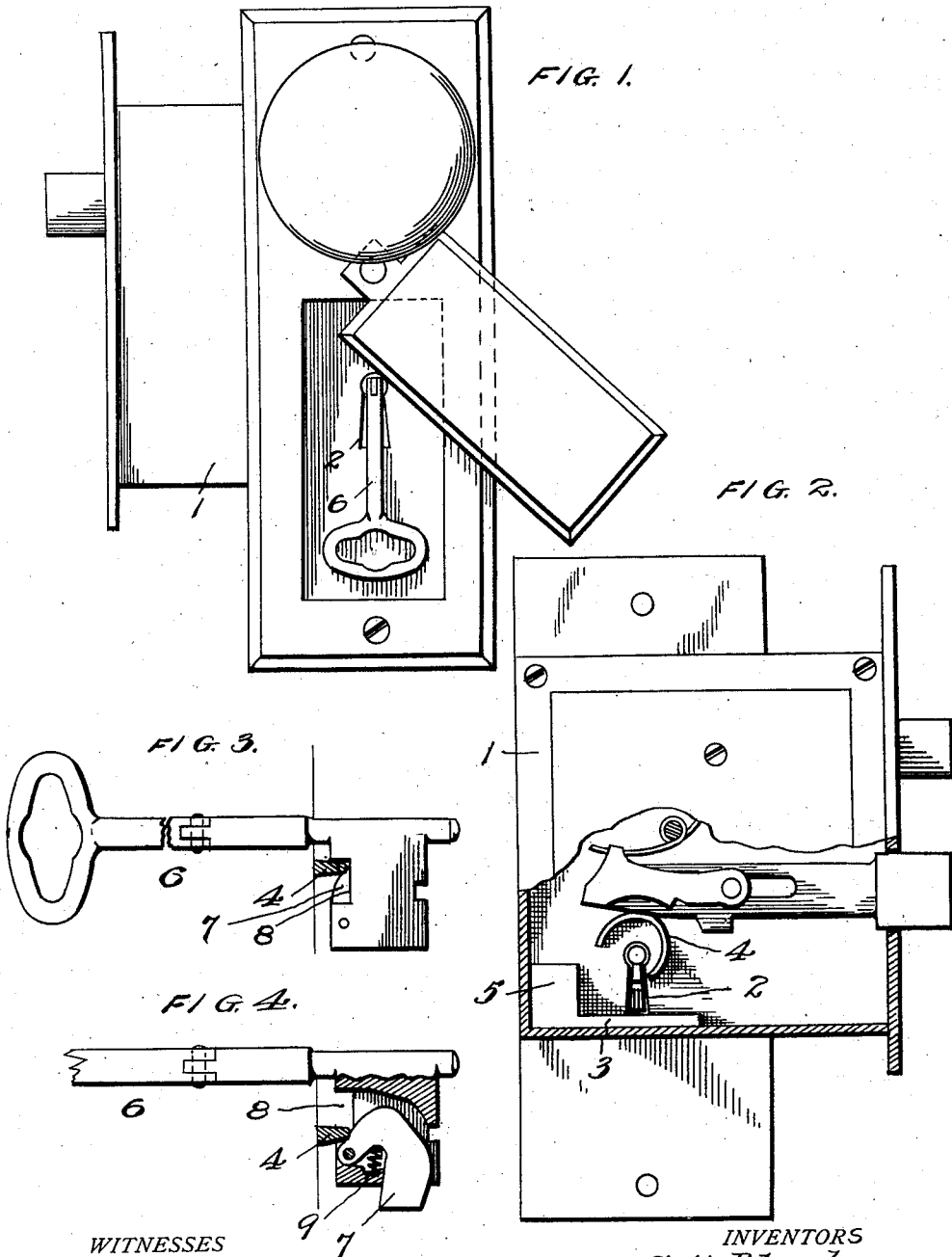


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 LOCK AND KEY.
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1,011,479.

Patented Dec. 12, 1911.



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UNITED STATES PATENT OFFICE.

ALMA A. OLSON AND GEORGE H. BLOOD, OF PRESTON, IDAHO.

LOCK AND KEY.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ALMA A. OLSON and GEORGE H. BLOOD, citizens of the United States, and residents of Preston, Idaho, have invented new and useful Improvements in Locks and Keys, of which the following is a specification.

Our invention relates to locks and keys, and has for an object to provide a specially constructed lock which may only be opened by a specially constructed key and which is provided with safety means to prevent the opening of the lock by any substitute for the key.

A further object of our invention is the provision of simple means to trap the key in the lock while the lock is in open position, so that the possession of the key surely indicates that the lock is in closed or locked position.

In the drawing; Figure 1 is an elevation of the lock with the gate swung to one side revealing the jointed key lying in the countersunk recess. Fig. 2 is an inside view of the lock with one of the plates removed. Fig. 3 is a side elevation of the key. Fig. 4 is a similar view partly cut away with the key in extended position.

Reference numeral 1 indicates a part of a lock construction showing our improvements. The lock is provided with an ordinary keyhole 2 having a plug or block 3 disposed just below the keyhole, and a cam-shaped guiding rib 4 extending partly around and above the keyhole. A stop 5 is provided to one side of the keyhole. 6 is the key. 7 is an extension piece pivoted within a cutaway portion of the bit of the key in such a manner that the extension piece in closed position substantially fills the recess of one of the kerfs 8, and in extended position lengthens the bit of the key and opens the recess of the kerf 8. A spring 9 normally holds the extension piece 7 in closed position.

The lock and key are proportionately constructed so that the lock cannot be thrown into open position by a key having a bit the length of the face of the keyhole, or in other words, the bit of the key must be extended

after insertion in the keyhole in order to operate the lock.

The operation is as follows: To unlock a door or the like the key is inserted in the lock and rotated. Kerf 8 then engages the cam-shaped guiding rib 4 and the extension piece 7 is thrown out into extended position. The bit of the key rides the rib 4 through its operative stroke and the extension piece 7 is continuously held in extended position until the bolt is thrown in. After the lock is unlocked the end of extension 7 contacts with the stop block 5 which prevents further rotation of the key to a position where it might be removed from the keyhole. The key is thus trapped in the lock until the bolt is shot by a reversal of the key action just described. When the lock is in open position, or when the key bit is held in contact with the stop block 5, the key is allowed to fall down in the countersunk recess and the key must remain there until it is desired to throw the lock into closed position. The plug or block 3 prevents the insertion in the keyhole of a key with a longer bit than the normal length of the bit of key 6 and guards the lower edge of the keyhole against tampering to increase its length.

We prefer to provide countersunk recesses and gates on both sides of the lock.

It will thus be seen that our improved lock and key affords entire protection against the use of skeleton keys. It also affords certain means of knowing whether or not the lock is in closed position by the simple expedient of finding out whether or not the key is with its owner.

We claim:

1. In a lock and key the combination of a casing provided with a keyhole, a bolt, key-operated means for throwing the bolt in and out, said means being situated out of reach of an ordinary key fitting the keyhole, a key, a key-bit, said bit being provided with an extensible portion pivoted therein and normally held in retracted position, and a cam-shaped rib in the lock for engaging the key-bit after insertion and extending the same to operate the key-operated means.

2. In a lock and key, the combination of a

casing provided with a keyhole, a bolt, key-operated means for throwing the bolt in and out, said means being situated out of reach of an ordinary key fitting the keyhole, a key,
5 a key-bit provided with a ward and an extensible portion pivoted therein and normally held in proximity to said ward, and means in the lock for engaging said ward

and throwing said extensible portion into extended position after insertion to operate 10 the key-operated means.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
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