C. F. JENKINS.

KEY AND LOCK.

APPLICATION FILED APR. 14, 1909.

947,913. Patented Feb. 1, 1910.

Fig. 2.

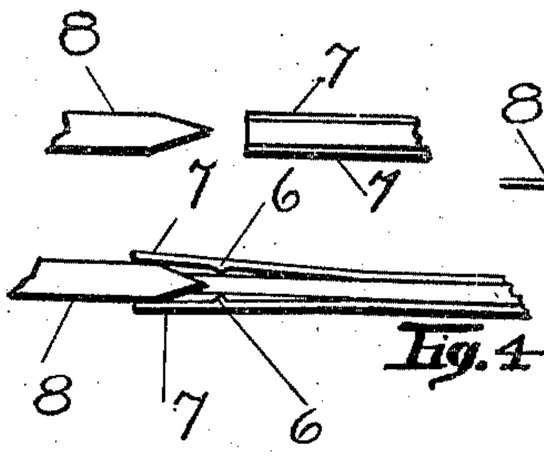


Fig. 3.

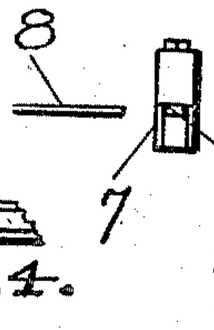


Fig. 4.

Fig. 1.

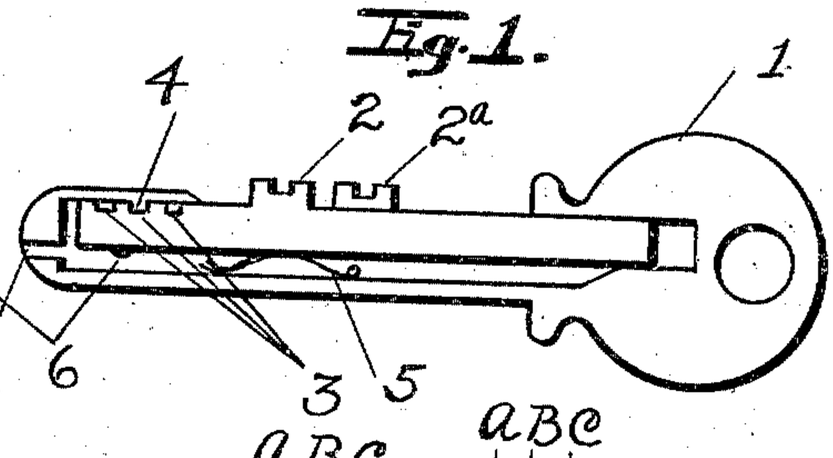


Fig. 5.

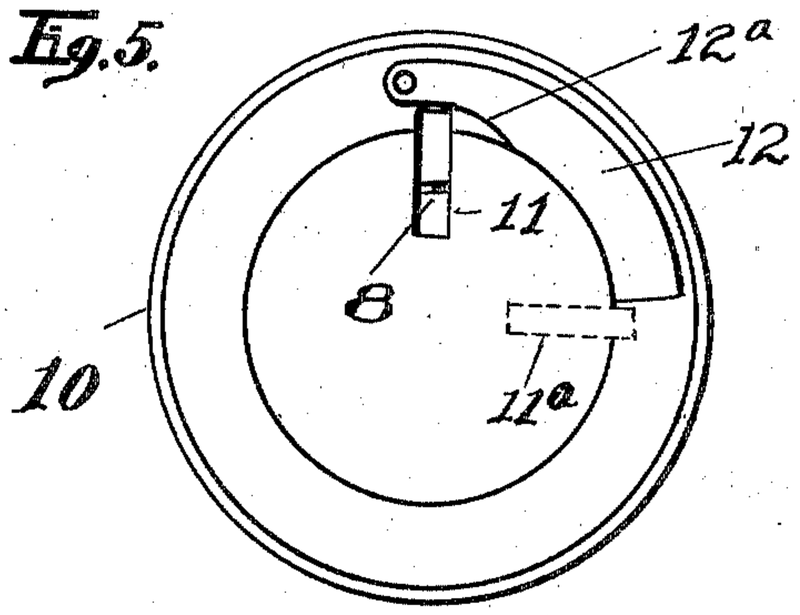


Fig. 6.

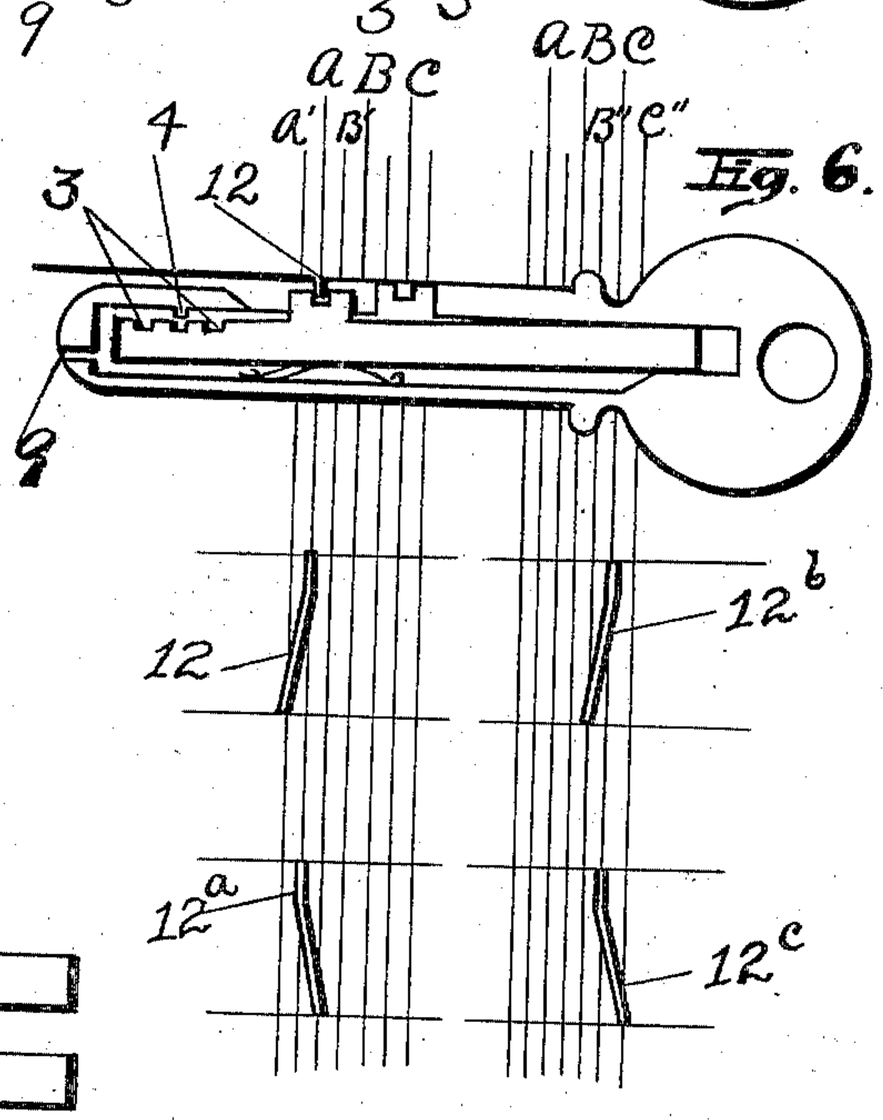


Fig. 7.

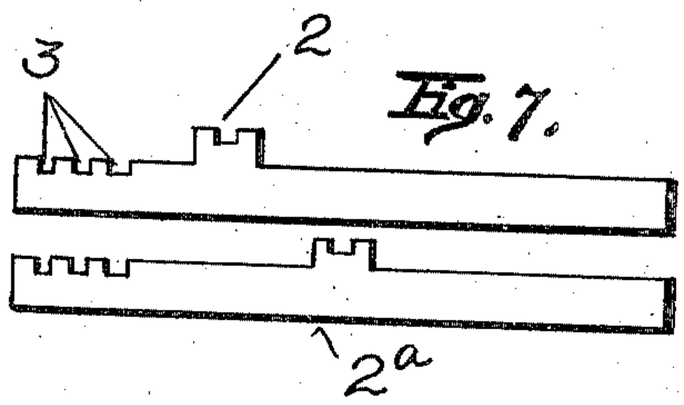


Fig. 8.

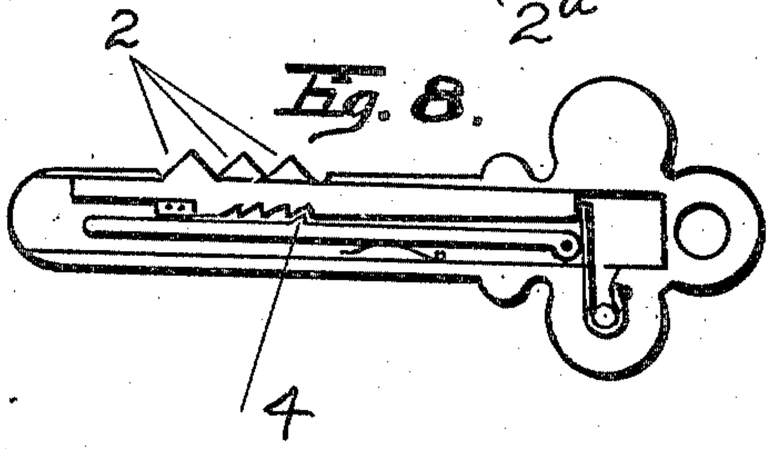
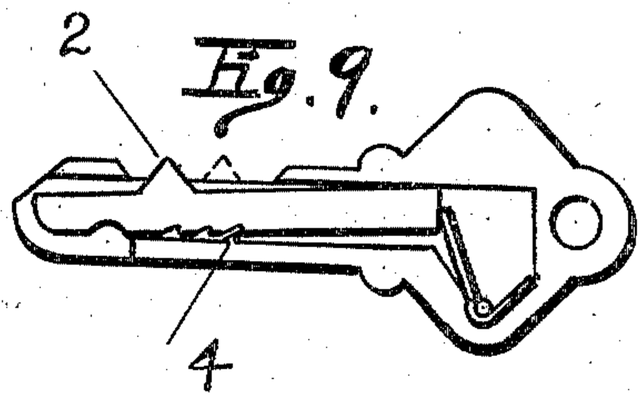


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

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KEY AND LOCK.

947,913. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed April 14, 1909. Serial No. 489,960.

To all whom it may concern:

Be it known that I, CHARLES FRANCIS JENKINS, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Keys and Locks, of which the following is a specification.

This invention is an improvement in locks and keys, and has for its object the construction of a key adapted to move the bolt in a number of locks, or have other desired effect at the points applied, in regular predetermined sequence.

Where locked stations are to be visited in regular order, as, for example, mail boxes, this key insures that no box will be skipped, for the use of the key in the lock of one box sets the key to fit a certain other lock box, *i. e.*, the second box, and no other, and the second sets the key to fit number three box, and so on over the whole of the postman's circuit. The use of this improvement in keys also insures the regular visit of a watchman to each of his stations, without the necessity of connecting each station to the recording clock. To connect one station to the clock is sufficient for he must visit each of the other stations in regular order before his key will again fit in the clock-station lock. These changes in the key are accomplished by changing the position of the bits, and are illustrated in the accompanying drawings, in which:—

Figure 1 is a view of the key with the side removed; Figs. 2, 3, and 4 certain details thereof; Fig. 5 an end view of a number of like locks with the cover plate removed; Fig. 6 a diagrammatic view of the movement of the key bits by means of the cam-catch 12 (Fig. 5); Fig. 7 the two bit blades; and Figs. 8 and 9, modified key constructions.

In all the symbols like figures refer to like parts, in which:—

1 is the body of the key; 2 and 2[a] the two movable bits; 3, notches therein into which the lug or catch 4 engages, as the bit blade is held upward by the springs 5 (one for each bit blade).

6 is an inwardly-extending detent on which the bit blade rests to lock it into engagement with lug 4. There is one on each side piece of the key, which side pieces, 7, are of flexible material, riveted to the body of the key at the larger end, but free at the other.

8 is a wedge-shaped, thin piece mounted in the lock in such manner that it will pass into the narrow opening 9, in the key end.

10 is the body of the lock and 11, the aperture, therein, for the insertion of the key.

11[a] is the position of the aperture when the key is withdrawn; 12 is a guiding cam for shifting the bits of the key, and which also acts as a catch or pawl to prevent withdrawing the key from the same aperture in which it was first entered. As the key rotates around its axis it passes under the shifting cam 12 lifting it to permit the key to pass under. After the key passes the cam 12 drops down behind the key preventing its return to the inserting position.

In Fig. 8, three bits are shown, each on a separate blade, slidable longitudinally and independently held in position by a movable catch 4.

In Fig. 9, a two-bitted key is shown, each bit held in position independently by engagement with the catch 4.

In all the modifications shown the bits are released from the catches 3 and 4 and set for the next lock by devices 12 in the lock last unlocked, as illustrated diagrammatically in Fig. 6, at 12, 12[a], 12[b] and 12[c].

The operation of the device is as follows: When the key is inserted in the aperture 11 of the lock Fig. 5 the wedge 8 enters the end of the key and spreads the sides of the key so that the detents 6, no longer lie under the bit blades. One or the other of the notches in the bits 2, come under the cam 12. Turning the key to the right causes the sloping portion 12[a] to depress the bit blade so that it is released from the catch 4. Turning the key farther causes the bit to shift; for illustration, from line A to A′, which is the proper position to enter and unlock station No. 2, (the second lock in the series), the lateral shifting positions of the cam 12 of the lock Fig. 5 being diagrammatically shown in Fig. 6 at 12, 12[a], 12[b] and 12[c]. The second lock may shift the other bit C to C′, which sets the key to enter and unlock station No. 3 (the third lock of the series). These and other possible shifts are diagrammatically shown in Fig. 6. There is practically no limit to the number of changes which can be made, that is, the number of locks which can be brought into action one after another. A single bit blade shifted five times will un-

lock five locks; two blades of five shifts each, will unlock twenty-five locks; three blades, six hundred and twenty-five, etc.

The word "bits" as used herein is intended to mean the movable portion or portions of the key; and the word "unlock" to mean that the key has the intended effect at the point it is applied.

The invention is not necessarily limited to the forms of keys shown here as other means of shifting the key bits are possible.

What I claim as my invention, is, thereof shifting the key bits are possible.

1. A key having movable bits and a series of unlike locks adapted to be unlocked therewith and means in the locks for automatically changing the bits to unlock other locks of the series.

2. A key having movable bits and a series of unlike locks adapted to be unlocked therewith in a predetermined sequence and means in the lock for automatically changing the bits to unlock other locks of the series in said sequence.

3. The combination of a key having movable bits, a series of locks adapted to be unlocked therewith, and means in each lock for setting the bits of said key to unlock another lock of the series.

4. The combination of a key having movable bits, a series of locks adapted to be unlocked thereby and means in said locks to adapt said key to unlock said locks in a predetermined order.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES FRANCIS JENKINS.

Witnesses:

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B. H. DAILEY.