E. Reynolds,

Key,

No. 46,704. Patented Mar. 7, 1865.

Fig. 1

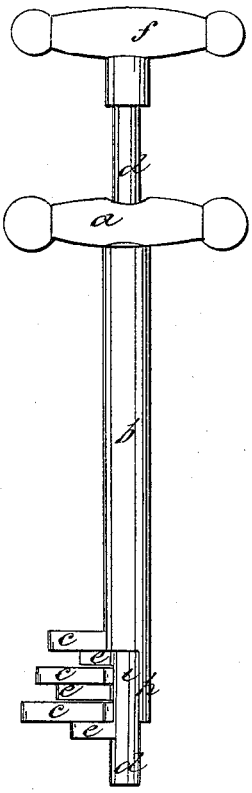


Fig. 5

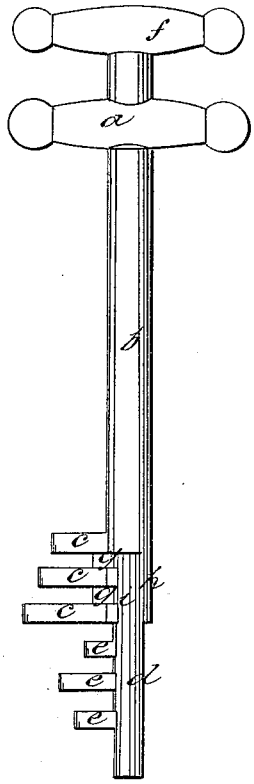


Fig. 3

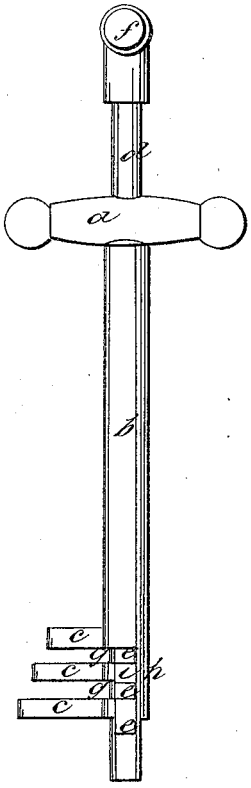


Fig. 2

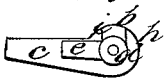
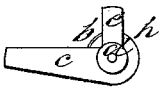


Fig. 4



Witnesses
A. Gould
L. M. Kidder

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IMPROVEMENT IN KEYS FOR LOCKS.

Specification forming part of Letters Patent No. **46,704**, dated March 7, 1865.

To all whom it may concern:

Be it known that I, EDWIN REYNOLDS, of Mansfield, county of Tolland and State of Connecticut, have invented an Improved Key for Locks; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My improvement relates to the construction of winged keys for bank locks, safe-locks, &c.; and the invention consists in so constructing a key with one or more sets of bits that they are movable with respect to other bits, and so that the separate series operate both in conjunction with and independently of each other, as will be hereinafter described.

Figure 1 of the drawings represents a side view of a key embodying my improvement, the bits being in the position they would usually occupy in entering the lock, or an outer key-hole to the lock. Fig 2 is an end view of the bits in this position. Figs 3 and 4 show similar views of the key with one set of bits turned with respect to the other, and Fig. 5 shows one set of bits projected longitudinally beyond the other.

a denotes the main handle, by which the key is entered and turned in the lock; *b*, the shank of the key; *c c c*, the ordinary bits for operating the tumblers and bolt of the lock. The shank *b* is made tubular, and receives another key stem, *d*. This stem carries a series of bits, *e e e*, which are shown in Fig. 1 as interlocking with the bits *c c c*. The handle *f* of these secondary bits serves to rotate the stem *d* independently of the shank *b*. From the position seen in Figs. 1 and 2 the bits may be rotated in the same plane, so as to assume the position shown in Figs. 2 and 3, suitable stops, *g h*, limiting the extent of the rotation of the bits *e* in either direction with respect to bits *c*. A space or slot, *i*, being formed in the shank when the bits *c* are brought into the position seen in Fig. 3, by pressure upon the handle *f* they may be projected beyond the bits *c*, as seen in Fig. 5, and in this position may be rotated independently of the bits *c* to the extent of an entire revolution.

It will be readily understood without elaborate elucidation that a great variety of permutations or combinations may be employed in the construction of locks to operate with a key of this description, to increase the difficulty of forcing, picking, or blowing open locks. By making the key with series of bits movable with respect to each other in the same or adjacent planes, when the key is inserted in a lock the bits *c* may be first turned and made to operate on a series of levers or tumblers, the movement of which shall bring another series into position to be operated by the bits *e*, both sets being then rotated together; and when the bits *e* are so applied to the stem *d* as to be capable of extension beyond the bits *c*, as seen in Fig. 5, the bits *c* and *e*, or either set of them, may be first operated in an outer lock, and may by such operation be made to uncover a key-hole to an inner lock, or displace a protecting-plate therefrom, so that the bits *e* may be projected into the inner lock and there operate the bolt of said lock. These changes and the position and number of bits may be extended and varied, as will be readily understood.

I am aware that keys have heretofore been made with tubular spindles and movable bits.

I am also aware that keys have been so constructed that the main bit or an auxiliary bit could be projected beyond the lock-case and so as to plug the opposite end of the key-hole from which the key is entered. With my construction, however, the bits which are movable with respect to the main bits enter between or interlock with said main bits so as to form an ordinary key, and being so held as to be incapable of movement or rotation in one direction, excepting with the main bits, and at the same time capable of independent rotation in the other direction and of being brought out of connection with the main bits and projected beyond them.

I claim—

A key made with a series of auxiliary bits interlocking with the main bits, and so as to be capable of rotation and operation therewith in one direction and independently thereof in the other direction, substantially as set forth.

EDWIN REYNOLDS.

Witnesses:

S. B. KIDDER,

F. GOULD.