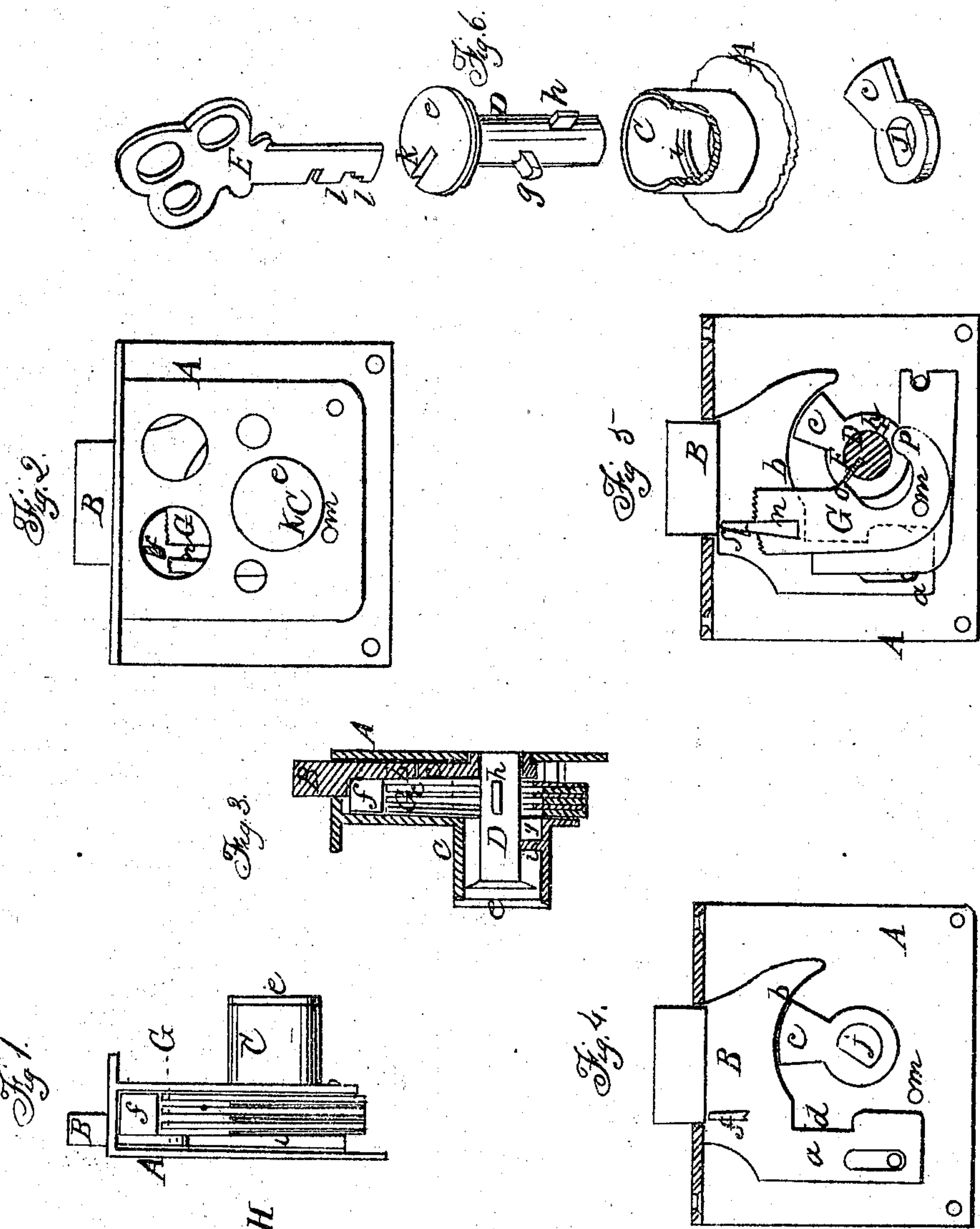


A. G. Burton.

Lock for Drawers &c

N^o 75854

Patented Mar. 24, 1868



Witnesses
J. A. Davis
P. Lombard

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attys.

United States Patent Office.

A. G. BURTON, OF ROCHESTER, NEW YORK.

Letters Patent No. 75,854, dated March 24, 1868.

IMPROVEMENT IN LOCKS FOR DRAWERS, &c.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. G. BURTON, of Rochester, in the county of Monroe, and State of New York, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is an edge elevation of my improved lock.

Figure 2, a front elevation.

Figure 3, a central vertical section.

Figure 4, a diagram, showing the connection of the operating-bit or arm with the bolt.

Figure 5, a diagram, showing the arrangement and action of the tumblers.

Figure 6, a view in detail of the several operating parts detached.

Like letters of reference indicate corresponding parts in all the figures.

The lock is intended more especially for use on drawers, &c.; and the object is to combine the parts of the lock in such a manner that it cannot be easily picked.

As represented in the drawings, A is the lock-case, and B the bolt. The bolt is provided with a tail, *a*, by which it is guided, a circular shoulder, *b*, which rests against the end of the operating-arm or bit *c*, and a notch, *d*, for the said arm to strike into in retracting or throwing the bolt. It is also provided with a dog, *f*, for striking into the notches of the tumblers when set, as will presently be described. This form of the bolt is most clearly exhibited in fig. 4.

The case is formed with a barrel, C, passing through the wood, for the insertion of the key. In this barrel rests a key-guide or bolt, D, of smaller diameter than the barrel, thereby leaving an open space, as clearly shown. The head *e* of this key-guide, covers the end of the barrel closely, and its lower end fits in or connects with the arm *c*, in any convenient manner, so as to give it motion. In the drawings it is shown as connecting by its end being keyed in an irregular-shaped eye, *j*.

The key-guide D is provided with two wings, *g* *h*, at suitable positions, as shown in fig. 6. The wing *g* rests under a flange or ledge, *i*, of the barrel, so that when turned back, neither the key-guide nor the key that fits therein can be withdrawn. This arrangement is of advantage in post-office drawers, tills, &c., where it is desirable always to keep them locked. If the key cannot be removed except in one position, viz, when locked, it will insure the closing of the drawer. The wing *h* is intended for acting upon and disarranging the tumblers after they have been set by the key, as will presently be described. The key-guide is provided with a slit or groove, *k*, extending down through on one side, in which is inserted the key E. This key is provided with the ordinary bits *l* *l* *l*, which act upon the tumblers.

The tumblers G G are preferably made of the form indicated in fig. 5. They are pivoted at *m*, so as to turn out or in, and the ends which project forward have notches *n* for the dog *f*, of the bolt, to fall into when all are set. The tumblers also have cam-points, *o* *p*, which are so situated in relation to the bits *l* *l* *l* of the key, and the wing *h* of the key-guide, that when turned in one direction, said bits of the key will strike the cam-points *o*, and throw the tumblers out to set the notches for the dog to fall into; and when turned back again, the said wing of the key-guide will strike the cam-points *p*, to distribute the tumblers again. The notches *n* are irregularly situated in the respective tumblers, so that said tumblers will, some of them, be thrown out to a greater extent than others, to make the notches coincide. The bits of the key are correspondingly made to project more or less to produce this effect. By this means the chances of picking the lock are greatly reduced, since the bits of the key must each be fitted exactly to the extent of motion its tumblers must go through to set the notch.

Washers H H are fitted between the tumblers, for the double purpose of keeping them properly separated for the action of the key, and also to produce the necessary friction on the tumblers to hold them in any position to which they are moved. It is a special design in my lock to avoid the use of springs, by employing friction to hold the tumblers in place.

The operation will be readily understood. Suppose the arm *c* to be at the extreme right, as in fig. 5, the

first movement will be to set the tumblers so that the dog can fall into the notches, which is accomplished by the bits of the key striking the cam-points *o*, as before described. During all this time that the tumblers are being set, the arm *c* holds against the shoulder *b*, of the bolt, so that no action can bring said bolt against the ends of the tumblers till the latter are in position to receive the dog. After the tumblers are set, the arm passes the shoulder and strikes into the notch *d*, to retract the bolt. This holding of the bolt out away from the ends of the tumblers is of much importance, for it prevents them from jarring and losing their position, and prevents strain upon them, and also prevents picking easily, for the reason that no indication of the position of the tumblers can be attained without contact therewith. When the arm *c* retreats from its contact with the shoulder *b*, to strike into the notch *d*, and retract the bolt, the key at that moment comes opposite or nearly opposite the pivot *m*. Therefore, if at that point the bolt comes in contact with the ends of the tumblers, no feeling can be attained by the contact, for the reason that the key, or any picking-instrument, in its place, coming opposite the pivot, can have but little action in throwing the tumblers in either one direction or the other.

A well-known lock is in use in which pins, pressed forward by springs, strike into the key-cylinder, and prevent unlocking, and in which the bits of the key press said pins out, to allow the said cylinder to turn. My device differs from this inasmuch as I employ positive tumblers situated outside, instead of pins, which said tumblers are set in a fixed position to allow the bolt to retract.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the key guide *D* and friction-tumblers *G G*, the counter-cams *g h*, the former operating to retain the key-guide and key as described, and the latter to distribute the tumblers, substantially as set forth.

2. The combination, with the key-guide *D*, of the shielding-barrel *C*, of larger diameter, closed by the head *e*, and so arranged as to leave ample space between the body of the guide and the barrel, for the operation of the wings *g h*, or their equivalent, substantially as and for the purposes set forth.

3. So arranging the key *E* with relation to the arm *c* and shoulder *b*, that when the said arm relieves the said shoulder, to act upon the bolt, the key will come opposite, or nearly opposite, the pivot *m*, where it can have the least action upon the tumblers, as herein set forth.

4. The wing *g*, and the ledge *i*, when employed, in combination with the key-guide *D* and key *E*, to prevent its withdrawal when the lock is unlocked, as herein set forth.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

A. G. BURTON.

Witnesses:

H. S. GREENLEAF,

R. F. OSGOOD.