L. M. Hartley,

Door Lock.

No. 6,936. Patented Dec. 11, 1849.

Fig. 3.

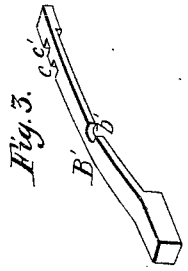


Fig. 4.

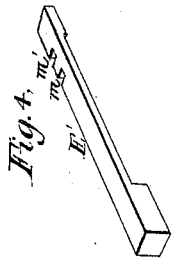


Fig. 5.

Fig. 2.

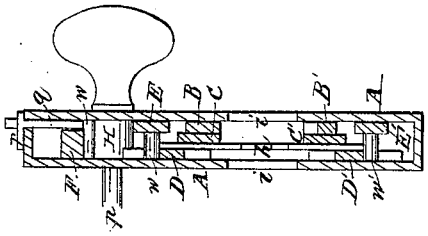


Fig. 6

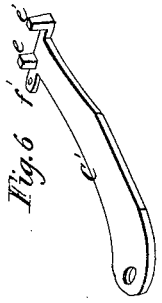


Fig. 1.

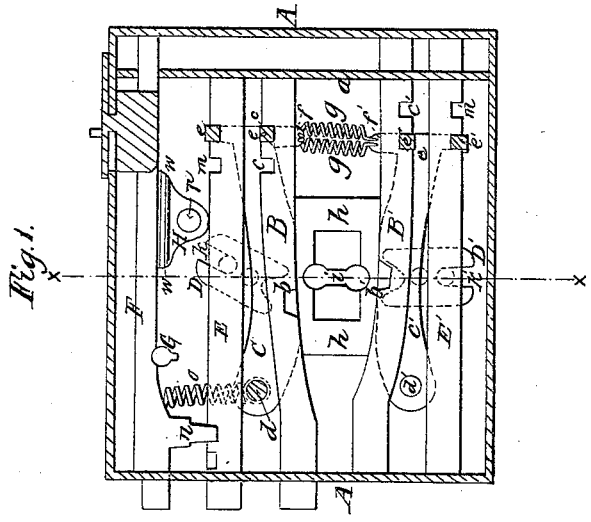


Fig. 7.

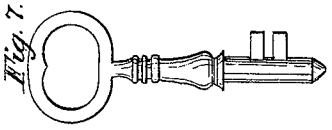
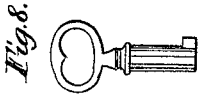


Fig. 8.



UNITED STATES PATENT OFFICE.

LEWIS M. HARTLEY, OF KENSINGTON, PENNSYLVANIA.

DOUBLE-BOLT TRICK-LOCK.

Specification of Letters Patent No. 6,936, dated December 11, 1849.

To all whom it may concern:

Be it known that I, LEWIS M. HARTLEY, of Kensington, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Door-Locks, called "Hartley's Improved Safety-Lock; which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1, is a view of the lock with the plate forming the inner side of the same removed, to expose the interior parts to view. Fig. 2, is a section of the same, at the line *x x* of Fig. 1. Fig. 3, is a perspective view of one of the bolts nearest the key hole. Fig. 4, is a perspective view of one of the bolts farthest from the key hole. Fig. 5, is a perspective view of one of the traversing slotted plates. Fig. 6, is a perspective view of one of the tumblers. Fig. 7, is a side view of the large key. Fig. 8, is a side view of the small ditto.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in arranging in the case of the lock, two pair of bolts, one above and the other below the key hole, the plates of those nearest the key hole, being notched on their edges to receive the fingers of the key, and pins projecting from the tumblers, and the plates of their mates being provided with pins, extending downward and entering slots formed in traversing plates, arranged below the tumblers, and guard, and operated on by the lower finger of the key, in such a manner as to allow of the bolts and plates nearest the key hole to be moved by inserting the key partly in the lock and turning the same half way around, above the guard, while the others are prevented from moving at all except by forcing the key to the full depth in the lock, after making the half revolution named and turning it back to its first position, causing the bolts first moved to be drawn into the lock and their mates to be thrown out, when the key can be drawn slightly out so as to bring its fingers above the guard; and again turned so as to throw the bolts nearest the key hole out, without affecting the others, thus making it impossible to move the bolts farthest from the key hole, except through the agency of the other two. And also in providing the lock with other safety guards, hereinafter mentioned.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, is the case of the lock, made in the usual or most approved form, connected together by screws or otherwise.

B, B′, are the bolts and plates nearest the key hole, arranged longitudinally in the lock case, one above and the other below the key hole, and passing through openings in the end of the case at their bolt ends, and through openings in a plate (*a*), cast on the outer face plate of the case, at their opposite ends for guiding them in their movements. The plate portions are slightly curved toward each other at their bolt ends, and are notched on their edges nearest the key hole as at (*b b′*) nearly opposite the same, and contain notches (*c c′*), on their opposite edges near the end passing through the plate (*a*), for the reception of the pins of the tumbler.

C, C′, are the tumblers, made of the form represented in Fig. 6, and arranged immediately below the bolt plates B, B′, the center of their edges next each other being on a line with the edges of the said bolt plates, and are secured at one of their extremities to studs (*d d′*) rising from the face plate of the case upon which they move, and are provided at their opposite ends with pins (*e e′*) fitting in the notches (*c c′*), rising from each corner of said ends, and have projecting pieces (*f f′*) at these last mentioned ends, extending toward each other, to which pieces are attached two spiral springs (*g*) extending from one piece to the other. These tumblers rest on the surface of a rectangular guard plate (*h*) surrounding the key hole and secured to the inner plate of the case A, and made thinner midway between its ends, (about two thirds its length) so as to form spaces between it and said inner plate, and is provided with an oblong opening or space at its center, in the center of the longitudinal edges of which space, are formed semicircular notches, immediately above and corresponding with the ends of the key hole (*i*) which is made double so as to admit of the key being reversed, to operate on either pair of bolts, as will be hereafter described.

D, D′, are oblong traversing slotted

plates, curved at their corners and arranged in the spaces between the rectangular guard plate (*h*) and plate of the case, and moving on pivots, situated about one third their length from their ends nearest the key hole. These plates D D′ have slots (*k k′*) in their ends farthest from each other, and semicircular spaces (*l l′*) in their opposite ends, as represented in Fig. 5.

E, E′, are the bolts and plates farthest from the key hole, made similar to the bolts and plates B, B′, except that they are straight, having notches (*m m′*) on their edges and arranged above the tumblers and passing through openings in the end of the case and in the plate (*a*). (*w w′*) are pins projecting from the lower surfaces of the bolts E, E′, and entering the slots (*k k′*) in the traversing plates D, D′ so that when said traversing plates are moved on their fulcra the bolts E, E′, will likewise be caused to move.

F, is another bolt arranged above the bolts before mentioned, and passing through openings in the end of the lock case and plate (*a*), for guiding it in its movements, the opening in the end of the case being sufficiently large to allow its end passing through the same, to rise and fall. This additional bolt F is designed to answer the double purpose of an additional safety guard to first mentioned bolts, as well as a dead latch, and is provided with a stud or cog (*n*), on its lower edge near the end passing through the end of the case, which, when said end is drawn down by a spiral spring (*o*), attached to the bolt and to the upper tumbler stud (*d*), enters the notches (*m m′*) in the bolt E.

G, is a small key hole formed in the face plate of the case, immediately below said bolt F, designed for the small key represented in Fig. 8.

H is a metallic block secured on a shaft (*p*), passing through the face plate, having a knob on its outer end outside the same, which block is made straight on its upper surface and semicircular on its lower part so as to form wings (*w*) at its ends, at equal distances from the center of the shaft (*p*) upon which it moves, and is arranged immediately below the bolt E, whose lower edge is flush with its straight surface when the stud or cog (*n*), is in one of the notches (*m*). It is, likewise thicker than the bolt E, in order to allow the edge of a slide (*q*), arranged between the bolt E, and face plate of the case and next the upper plate of said case, being brought flush with the upper surface of the portion of the metallic block I, projecting beyond the bolt, for the purpose of locking said block to prevent the bolt E, being raised by the knob. This slide (*q*), is guided in its movements by a plate (*r*) situated outside the lock case, and secured to the slide by a pin passing through a slot in the upper plate of said case.

The mode of operating this lock is as follows: 1st. To throw the upper pair of bolts E, F, out of the lock case A, to lock the door to which it is attached insert the small or dead latch key into its hole (*s*), and turn the finger of the same upward, so as to raise the bolt F, and with it the cog or stud (*n*), out of the notch in the bolt E, nearest the end of the case, and keep it in that position. Then insert the large key into the key hole, with its fingers downward, only far enough to allow its lower finger to be on a line with the surface of the rectangular guard plate (*h*), and turn the same to the left one half a revolution, which will cause said lower finger of the key to lift the tumbler C, and disengage the lower pin (*e*), on the lower corner of the same from the notch in the bolt, and engage with the notch (*b*), of the bolt B, above the key hole, and throw said bolt out at the end of the case. Then force the key as far into the lock case as it will go and turn it to the right back to its former position, which will cause the lower finger of the key to operate on the prongs at the end of the upper slotted traversing plate D, and cause the same to traverse, and the upper finger of the key to simultaneously operate on the tumbler C, so as to raise the pins (*e*), from the notches (*c*), in the bolts B, E, throwing the upper bolt E, out of the case and withdrawing the lower one B, to its first position. Then withdraw the key slightly until its lower finger is on a line with the surface of the rectangular guard plate (*h*), and again turn it to the left, which will again throw the bolt B, out. After this is done as a further safety guard the small or dead latch key may be turned, and withdrawn, to allow the cog or stud (*n*), on the bolt F, to be drawn into the notch in the bolt farthest from the end of the case. The lower pair of bolts B′, E′, are operated in a similar manner to the upper ones, by reversing the key and inserting it in the key hole with its fingers upward, and following the above directions, with the exception that the key is to be turned in reverse directions to perform corresponding results.

It will be seen from the above that in this form of lock, the lower bolt B, of the upper pair, and the upper bolt B′, of the lower pair, respectively are required to be thrown out and in before the other bolts E, E′, are thrown out, and that said bolts B, B′, being again thrown out, they will be required to be thrown in and out, before the bolts E, E′, are drawn in, and in again before the door is unfastened, even if the cog or stud (*n*), is removed from the notches in the bolt F; and that to perform this result the key must be reversed.

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

The combination and arrangement of the twin bolts E, B, E′, B′, (any number being arranged in the same case) tumblers C C′ having pins (*e e′*) at their ends which enter corresponding notches in the bolts, traversing slotted plates D D′, pins on the bolts E, E′, entering the slots of said plates D, D′, substantially as herein set forth; the bolts B, B′, nearest the key hole being required to be thrown out and in, before the other bolts E, E′, can be thrown out, and vice versa, as described.

LEWIS M. HARTLEY.

Witnesses:

A. BURDISH,

C. DAMON, Jr.