H. H. ELWELL.

Door Locks.

No. 136,049. Patented Feb. 18, 1873.

Fig. 1

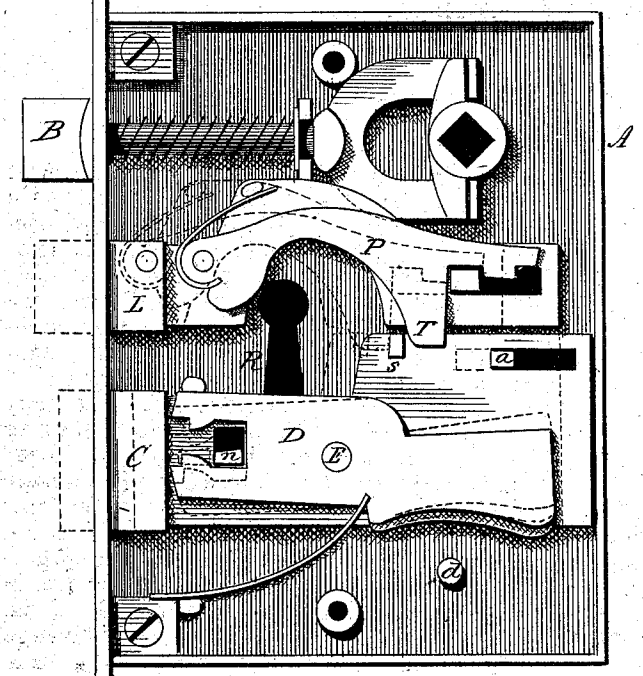


Fig. 5

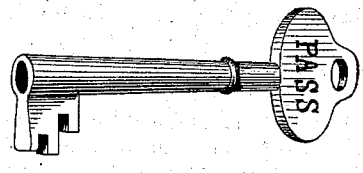


Fig. 6

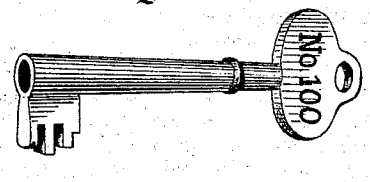
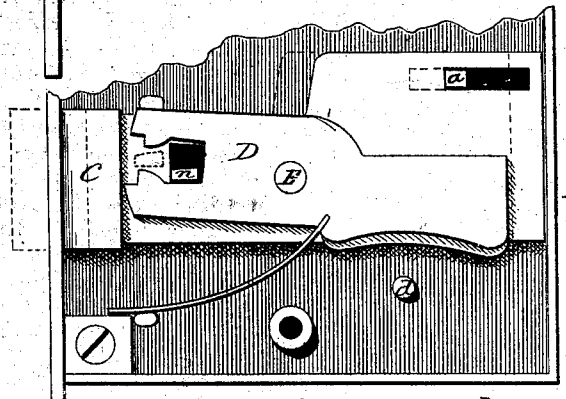


Fig. 2.



Witnesses

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Fig. 3.

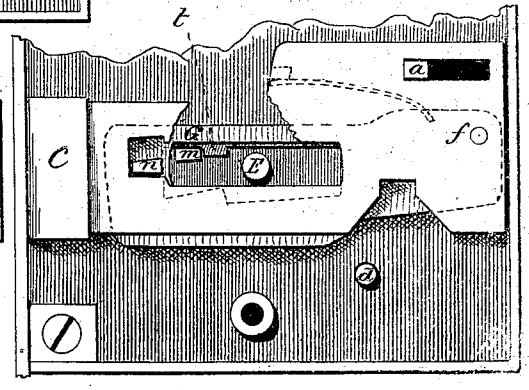
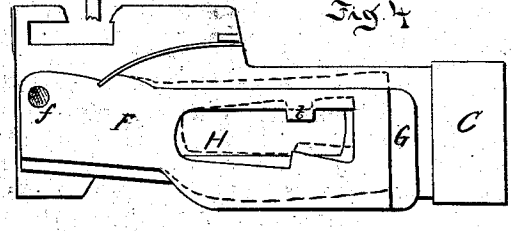


Fig. 4



UNITED STATES PATENT OFFICE.

HENRY H. ELWELL, OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR TO THE NORWALK LOCK COMPANY, OF SAME PLACE.

IMPROVEMENT IN DOOR-LOCKS.

Specification forming part of Letters Patent No. **136,049**, dated February 18, 1873.

To all whom it may concern:

Be it known that I, HENRY H. ELWELL, of South Norwalk, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Door-Locks; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1 a side view with the covering-plate removed, showing the operation of the tumblers with the principal key; Fig. 2, the same view of the lower portion, illustrating the operation of the tumblers with the pass-key; Fig. 3, the same view with the principal tumblers removed, illustrating the operation of the pass-key tumblers; Fig. 4, the reverse side of the lock-bolt; Fig. 5, the pass-key; and in Fig. 6 the principal key.

This invention relates to an improvement in that class of knob-latches and locks which are commonly called hotel-locks—that is to say, a lock in which an arrangement is provided for the operation of the bolt by either a principal key or master key, either of which will operate the bolt irrespective of which may have made the previous operation. The invention consists in combining with the lock-bolt two sets of tumblers, one set hung to a fixed pivot in the lock-case, and the other set to the lock-bolt, one set only actuated by the pass-key, and each set independent of the other in its action.

A is the lock-case, of common external construction; B, the latch-bolt, provided with any of the known mechanisms for connection with the knob-spindle. C is the principal lock-bolt made thinner from its head back into the case, substantially as in other locks, and guided in its movements by a stud, *a*, extending through a slot in the tail of the bolt. On one side of the lock-bolt tumblers D, more or less in number, are arranged upon a pivot, E. The said pivot E is stationary in the case, and extends through a slot in the lock-bolt, as seen in Fig. 3, forming a fixed bearing upon which the tumblers turn. Preferably I make the keys which operate the bolt "pipe-keys," and to receive the key I fix a spindle, *d*, in the case, onto which spindle the key sits in the usual manner for pipe-keys. The tumblers D are preferably made to be operated by the principal key, Fig. 6, the bit being fitted to actuate the tumblers in the usual manner—that is, so as to raise the rear and throw down the forward end of the tumblers, as denoted in broken lines, and then throw the bolt. In a series of these locks the bit of the principal key is different for different locks, each key fitting its own lock and no other. Raising the tumbler, as before described, and throwing the bolt, the stud *n*, which is upon a tumbler attached to or in connection with the lock-bolt, passes through the gate or slip in the tumblers, as denoted in broken lines, Fig. 1. This operation is substantially the same as in many locks. Upon the reverse side of the lock-bolt C, and pivoted thereto at *f*, I arrange other tumblers, F G. On one of these tumblers G the stud *n* is fixed, and through these tumblers a slot, H, is formed, the slot setting over a stud, *m*, in the case, as seen in Fig. 3, and in the slot of the tumbler F a projection, *t*, is made to drop down in the rear of the stud *m*, as seen in Fig. 3, which will prevent the throwing of the lock-bolt until this tumbler is raised therefrom; hence, one portion of the bit of the principal key must raise that tumbler, as denoted in broken lines, Fig. 4, but that key has no effect upon the tumbler G which carries the stud *n*. Each tumbler is provided with a spring to hold it in its proper relative position in substantially the usual manner. The pass-key, Fig. 5, enters the same key-hole upon the same stud *d*, its bit cut so as to escape the tumblers D, and so as to actuate only the tumblers F G. Turning the key the bit strikes these tumblers, raises the tumbler F the same as the principal key, and also raises the tumbler G, and with it the stud *n*, so that when throwing the bolt the stud *n* will pass through the slip in the tumblers D, as seen in Fig. 2—that is, one of the keys operates the principal tumblers D to bring them into position, that the stud *n* may pass through the slip. The other key operates the stud *n* or auxiliary tumblers to bring it into position to pass through the slip in the tumblers D.

I have represented the tumbler F arranged to drop behind the stud *m;* hence, it is neces-

sary that both keys should operate this tumbler; and this is desirable for the perfect security of the lock. I have also represented the stud *n* as fixed to or made a part of one tumbler only; but it will be evident to those skilled in lock mechanism that a part of this stud may be formed on one tumbler and a part on another. I therefore do not confine myself to the use of the tumbler F or to the use of the stud *n* upon one tumbler only.

Preferably I construct the lock with the key-hole only on the outside for this bolt. Above the principal bolt I arrange a second bolt, L, as seen in Fig. 1, upon which is a tumbler, P, with its independent key-hole R upon the opposite side, and this tumbler and bolt I construct to be operated by either key, or it may be by the principal key only, so that a different bolt is thrown upon the inside from that thrown upon the outside, as in common two-bolt locks.

In order to prevent the throwing of one bolt while the other is thrown, I form a stud, *s*, on the principal bolt, and extend an arm, T, of the tumbler P down below the line of the said stud, as seen in Fig. 1; hence, when the bolt L is thrown, as denoted in broken lines, the arm T of the tumbler will drop down forward of the stud *s*, and thus prevent the throwing of the principal bolt, or when the principal bolt is thrown the stud will come in the path of the key for the bolt L, and prevent the action of the key upon the bolt.

I have represented the stud *s* as upon the tail of the bolt, but it is only necessary that it be in such connection with the bolt, or an equivalent be employed, so that the tumbler P will come into such connection with the bolt C as to prevent the operation, as before described.

I claim as my invention—

A lock-bolt, provided with a principal and auxiliary set of tumblers, each set consisting of one or more, the principal set pivoted to the lock-case, and the auxiliary set to the lock-bolt, the principal set constructed with a slip and the auxiliary set with a stud, *n;* one key operating the principal tumblers to turn the slip into the path of the stud, the other key to raise the auxiliary set to bring the stud into line with the slip, each set operated independently of the other, substantially as set forth.

HENRY H. ELWELL.

Witnesses:
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