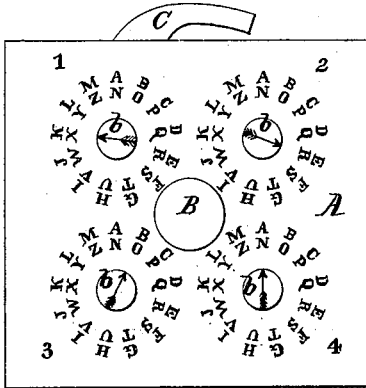


*S. Lloyd,*  
*Permutation Lock.*

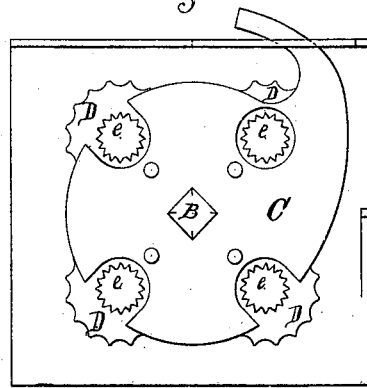
*No. 112,724.*

*Patented Mar. 14, 1871.*

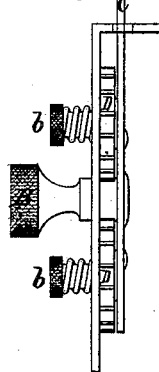
*Fig. 1.*



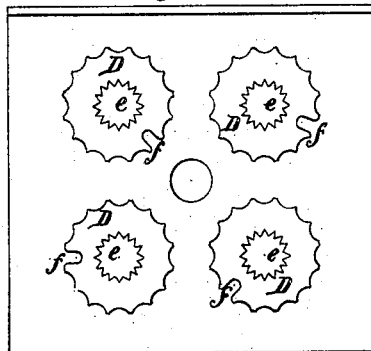
*Fig. 3.*



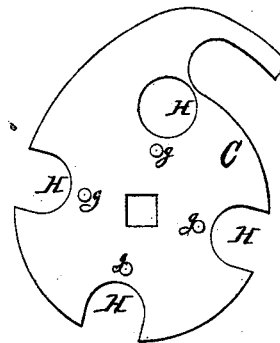
*Fig. 2.*



*Fig. 4.*



*Fig. 5.*



*Witnesses.*

*L. H. Gano.*  
*J. McCallahan.*

*Inventor.*

*Samuel Lloyd.*

# United States Patent Office.

SAMUEL LOYD, OF NEW YORK, N. Y.

Letters Patent No. 112,724, dated March 14, 1871.

## IMPROVEMENT IN PERMUTATION-LOCKS.

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

Be it known that I, SAMUEL LOYD, of the city, county, and State of New York, have invented certain Improvements in Safety-Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification.

### *Nature and Objects of the Invention.*

The particular feature of my invention is the construction of a trunk or desk-lock that may be used without a key, which is simple in its parts and very compact, combining strength and durability, which I accomplish by the combination of a lock-case, disk-tumblers, a bolt-plate with a knob attached in and through the center of the lock for operating the same.

I also provide the lock with four small knobs, on the shafts of which I attach notched wheels corresponding with the openings in the center of the tumblers, so as to rotate the tumblers by turning these small knobs.

To the bolt-plate is attached four guard-pins, which fit into the slots or gatings in the tumblers when the tumblers are turned or rotated to the proper position to admit them.

In the drawing—

Figure 1 is a front view of the lock.

Figure 2, a side view of the knob.

Figure 3, a back view of the lock with the bolt-plate turned in position for changing the combination.

Figure 4, a back view with the bolt-plate removed, showing the tumblers and their gatings that receive the guard-pins when the lock is operated.

Figure 5, a view of the inner surface of the bolt-plate, showing the guard-pins on the same.

A is the lock-case.

B, the knob attached to and operates the bolt-plate.

C, the bolt-plate.

D, the disk tumblers.

*b b b b*, small knobs that actuate the tumblers.

*e e e e*, notched wheels attached to the shafts of knobs *b*, and fitting into a corresponding opening in the tumblers.

*g g g g*, the guard-pins attached to the bolt-plate, as shown in fig. 5.

The lock-case A is cut and formed of heavy sheet metal, and of suitable shape to accommodate the purpose for which it is designed, whether for a trunk, desk, or door, with the necessary perforations to accommodate the knobs with their shafts running through it, as shown in fig. 1 of the drawing.

In this lock-case I place four disk-tumblers, which are stamped out of sheet metal, as shown at D, having openings in their centers notched to receive the notched wheels *e*, on the shafts of the small knobs *b*, which secure them in place.

These tumblers D also are provided with slots or gatings, as shown at *f*.

I then provide the bolt-plate C, which is also stamped out of sheet metal, and is provided with guard-pins *g* to fit the gatings in the disk-tumblers, as shown in fig. 5, and attach this bolt-plate by an opening in its center, in which I insert the shaft of the knob B and rivet it securely on the same, over the inside faces of the disk-tumblers, but leaving it free to turn when operated by the knob B.

The face of the lock is provided with four alphabets stamped on it, surrounding the small knobs *b*, as shown in fig. 1 of the drawing, for the purpose of a combination to set the lock to, by which the same may be opened.

I claim as my invention—

The bolt-plate C, provided with openings H H H H, in combination with the notched wheels *e*, arranged within the tumblers D, substantially as shown and described.

SAMUEL LOYD.

Witnesses:

L. H. GHO,

JOHN CALLAHAN.