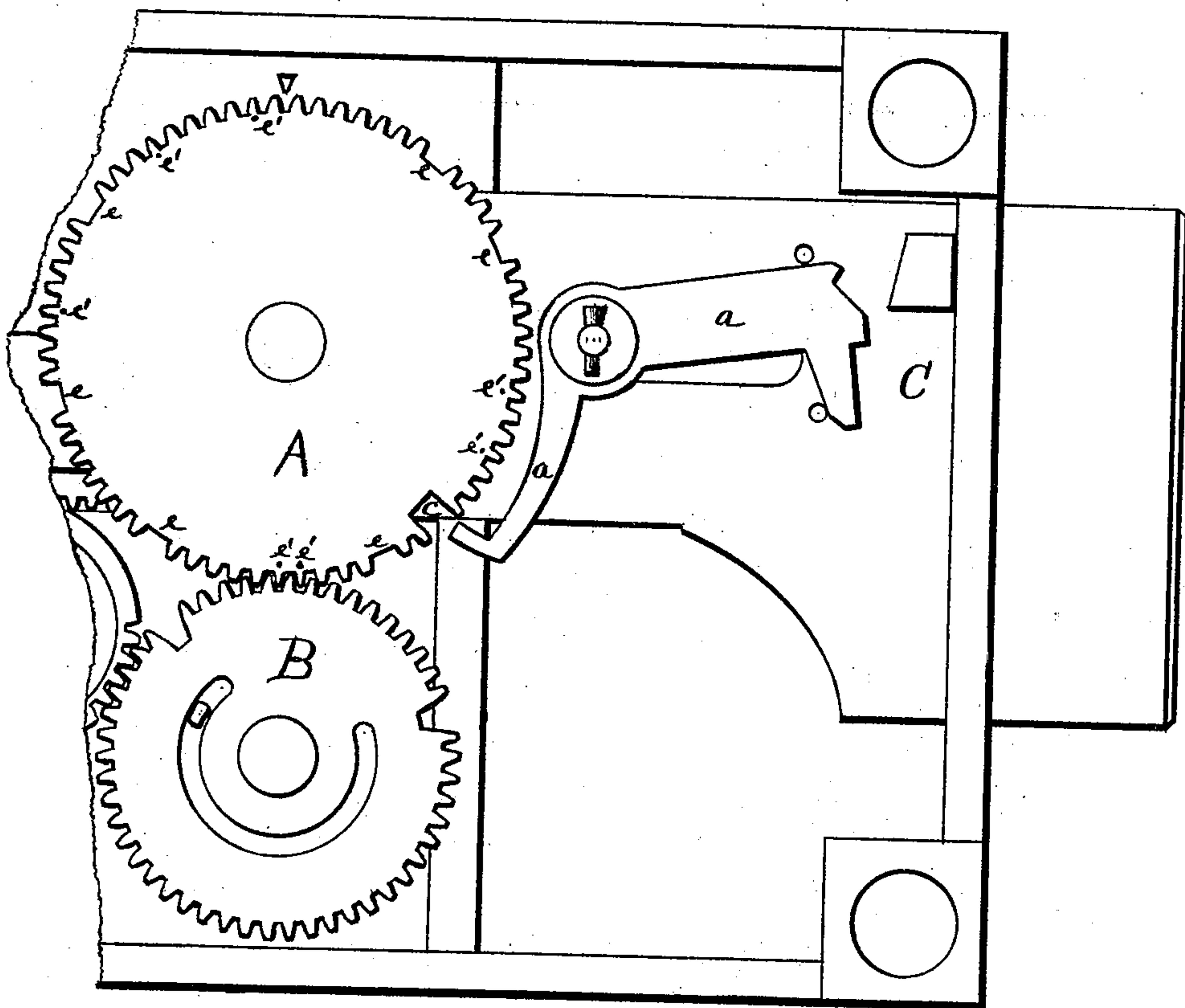


O. E. Pillard,
Permutation Lock.
No. 90,683. *Patented June 1, 1869.*

Fig. 1.



Witnesses.
James Shepard
Oliver Stanley

Inventor.
Oliver E. Pillard

United States Patent Office.

OLIVER E. PILLARD, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR
TO FREDERICK H. NORTH, OF SAME PLACE.

Letters Patent No. 90,683, dated June 1, 1869.

IMPROVEMENT IN PERMUTATION-LOCKS.

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, OLIVER E. PILLARD, of New Britain, in the county of Hartford, and State of Connecticut, have invented a new and useful Improvement in Locks; and I hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a front elevation of my invention.

The invention is designed as an improvement on the lock patented by Henry Isham, July 1, 1856, and July 7, 1857, and also by myself, June 30, 1868.

My invention consists in wholly or partially cutting away an occasional tooth of the large tumblers, so as to make variable play or backlash in the teeth of the large and small tumblers, to complicate the picking of the lock.

A designates the large tumbler, and B, the small one.

A set of each of these is arranged, one in front of the other, but to better show the teeth of the same, only one of each is shown in the drawing. The other parts of the lock being shown and described in the former patents, are not all of them shown and described in this specification.

In making the slot *c*, it is necessary to remove one tooth; therefore, as the tumblers revolve in operating the lock, and the slot *c* comes in contact with the teeth of tumbler B, there will be a little backlash in the teeth, which can be discerned by an expert.

To deceive the expert, or to prevent him from locating the position of the tumbler A by the backlash

in the teeth, I construct false slots, *e*, at irregular distances, by removing a tooth, or sometimes I file the sides of the teeth, so as to make the thin teeth, *e'*, either or both of which can be used, as desired.

When the false slots *e*, or the thin teeth *e'*, come in contact with the teeth of the tumbler B, the same backlash is discernible that there is when the slot *c* engages with the tumbler B. It is, therefore, impossible for the expert to decide whether the thin teeth, *e'*, false slot, *e*, or the slot proper, *c*, are in contact with the teeth of the tumbler B; therefore, the false slots *e* have substantially the same effect as the thin teeth *e'*.

The false slot *e* must not be as deep as the slot proper, *c*, otherwise the bolt C could be withdrawn when the latch *a* engages with the false slots *e*.

With the exceptions of the false slot *e* and the thin teeth *e'*, the lock is the same as shown in the former patent and application.

By my invention, I render it impossible for an expert to locate the position of the tumblers A by means of the backlash in the teeth.

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

Wholly or partially removing an occasional tooth, as at *e e'*, of the tumbler A, for the purpose of making the backlash in the teeth of tumblers A and B vary at irregular distances, substantially as described and for the purpose set forth.

OLIVER E. PILLARD.

Witnesses:

JAMES SHEPARD,
OLIVER STANLEY.