

(Model.)

R. W. THURMAN.  
REMOVABLE PERMUTATION LOCK.

No. 252,336.

Patented Jan. 17, 1882.

Fig. 1,

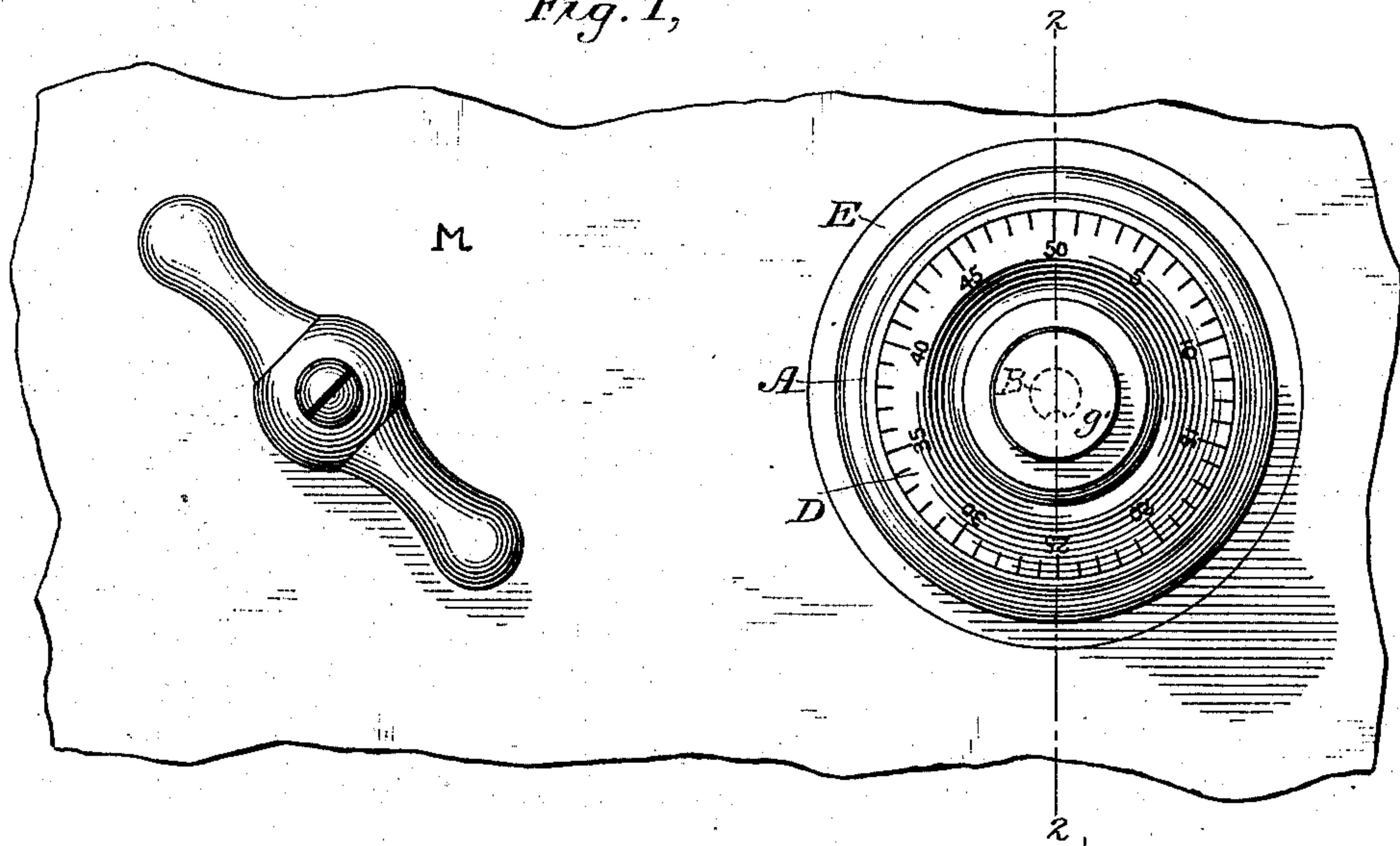


Fig. 2,

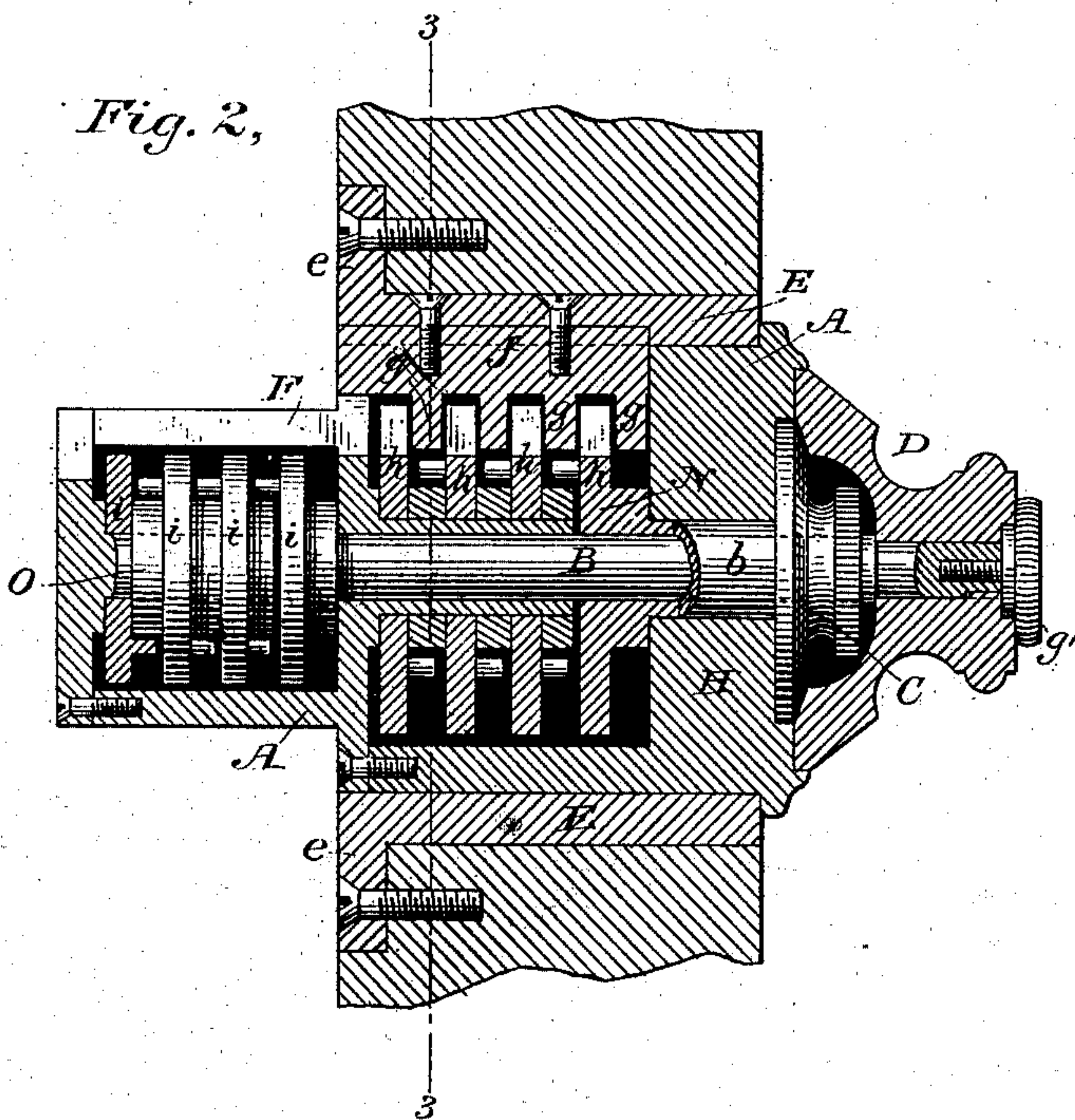
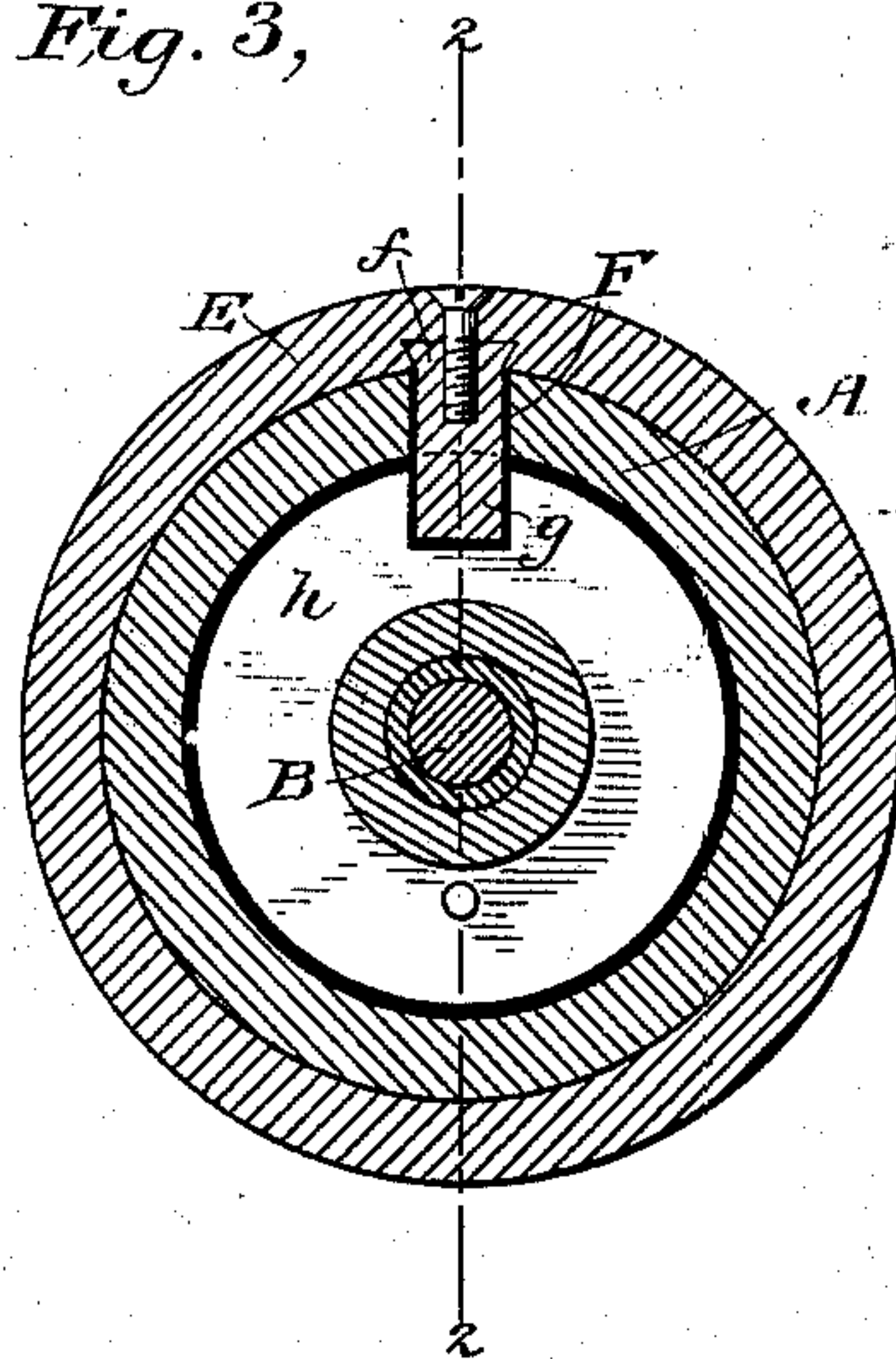


Fig. 3,



WITNESSES

Geo W. Bruck  
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# UNITED STATES PATENT OFFICE.

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## REMOVABLE PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 252,336, dated January 17, 1882.

Application filed November 17, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, ROBERT W. THURMAN, a citizen of the United States of America, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented certain new and useful Improvements in Removable Safe-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention consists in so constructing the locks of safe, vault, and similar doors that in case of accident the lock can be removed and the door opened without injury to either door or lock, avoiding the expense, delay, and inconvenience incidental to the present method of opening doors having combination-locks when the same are out of order.

In the accompanying drawings, Figure 1 is a front view of a portion of a safe-door showing the application of my device. Fig. 2 is a vertical longitudinal section on the line 2 2, Fig. 1. Fig. 3 is a sectional view on the line 3 3 of Fig. 2.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a cylindrical shell or case, of metal, constructed in two portions secured together, the front portion being larger in diameter than the rear. Each of the portions contains a separate and distinct permutation-lock, N and O, of any known style having circular tumblers. The spindles of both these locks are brought to the front end of the case, the spindle *b* of the front or secondary lock, N, being made hollow to permit the spindle B of the rear lock to be operated through it as though it were not there.

On the outer end of spindle B is the ordinary dial-plate, D, operated as usual underneath. Concealed by the dial D is a smaller dial, C, for operating the secondary lock N, which is unaffected by the ordinary operation of lock O.

There is a slot, F, in the case A, extending as far forward as the last of the second set of tumblers, and of the same width as the notches in the tumblers. This slot may be made in two portions in different parts of the case, but

is preferably placed as shown, and is for the purpose of receiving in its larger and deeper part the teeth of the rack, hereinafter described, by means of which the case A, containing the locks, is secured in the door, and in its smaller and inside portion the end of the door-bolts when thrown back to open the door.

The part H is solid metal, its quality depending upon the thickness of the door, its presence being to afford security against drilling.

The cylinder E is preferably constructed of steel, and is formed with a flange, *e*, on its inner end, by which it is secured to the door. On the inside of cylinder E is secured in any position, but preferably as near the inner end as possible, a toothed rack, *f*, the teeth *g* of which are fitted to engage with the tumblers *h* of the secondary lock N.

A safe, vault, or other door has an aperture to receive the cylinder E, which is placed therein and secured by the flange *e*, or any other suitable manner. The tumblers *h i* being arranged with their notches in line with the slot F, the teeth *g* and the end of the door-bolt will pass along the slot F, and the case A can be inserted within the cylinder E. When in position the case A is secured by dogging the tumblers of the secondary lock N by the teeth *g*, as shown, using the inside dial, which does not move except to operate the secondary lock. The outer dial is removed and replaced by use of screw *g'*.

It will be seen from the foregoing that the lock N is only to be used should the ordinary lock, O, fail to operate. Then, by means of the slot F and teeth *g*, the whole device can be withdrawn from the door. The liability of the secondary lock to become deranged is very slight, as in ordinary cases it will be so seldom required. The door-bolts should work into the inner end of slot F, which is controlled by the lock O, having the ordinary external dial-plate. The form of case shown permits the use of bolts of the usual form of construction with slight modifications.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the lock O, having a slotted case, spindle B, and dial D, of the toothed cylinder E, spindle *b*, notched tumblers

h, and dial C, substantially as shown and described.

2. A removable lock having an independent set of tumblers adapted to register with teeth  
5 secured to the door, whereby the whole may be removed without operating the combination of the main lock, substantially as shown and described.

3. In combination with the lock O, the cyl-  
10 inder E, provided with teeth g, adapted to register with the tumblers of an independent lock, whereby the locks are detachably secured in the door, substantially as shown and described.

4. In combination with the lock N, having a cylindrical slotted case, spindle b, and dial 15 C, the toothed cylinder E, substantially as shown and described.

In testimony whereof I have affixed my signature in presence of two witnesses.

ROBERT W. THURMAN.

Witnesses:

JOSEPH CARNEY,  
G. R. LYMAN.