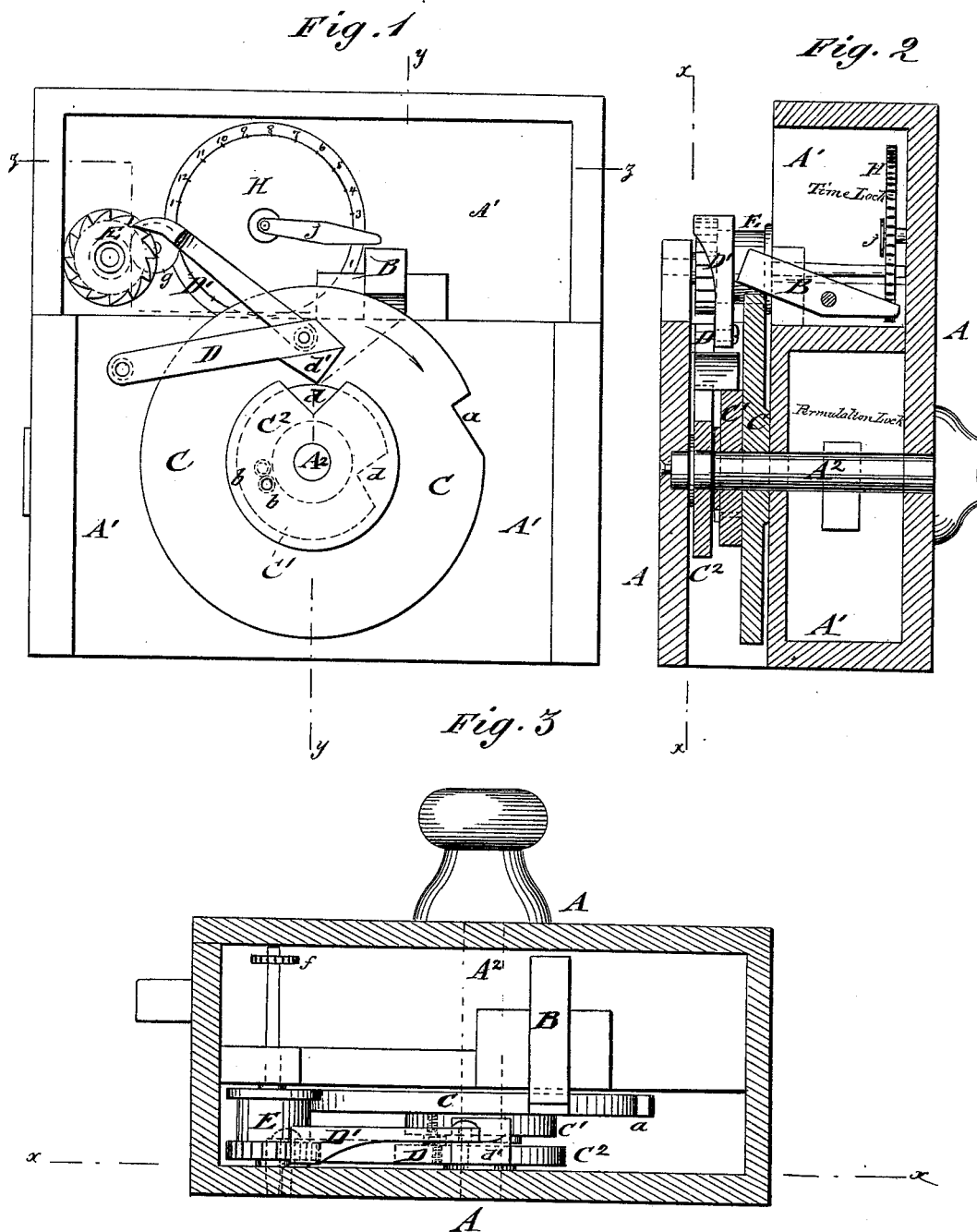


J. B. OVERMYER.
Time-Lock.

No. 214,438.

Patented April 15, 1879.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN B. OVERMYER, OF NEW LEXINGTON, OHIO.

IMPROVEMENT IN TIME-LOCKS.

Specification forming part of Letters Patent No. **214,438**, dated April 15, 1879; application filed January 19, 1878.

To all whom it may concern:

Be it known that I, JOHN B. OVERMYER, of New Lexington, in the county of Perry and State of Ohio, have invented a new and Improved Time-Lock, of which the following is a specification.

This invention is intended to improve the time-lock for which Letters Patent have been granted to John B. Overmyer and James A. Huston, under date of July 24, 1877, and numbered 193,544, in such a manner that in case the watch-movements which control the main bolt should stop, the lock may still be opened from the outside in a certain fixed time, by the use of the spindle of any ordinary combination-lock, without necessitating the forcible opening of the safe and causing other inconveniences.

The invention consists in the combination, with the releasing mechanism of the time-lock, of a suitable ratchet-and-pawl arrangement that is operated by supplemental tumblers on the spindle of an ordinary combination-lock, the spindle being prevented by the time-lock from turning in the direction for opening the combination-lock until the time-lock releases the same.

In the accompanying drawings, Figure 1 represents a rear elevation of my improved time-lock; Fig. 2, a vertical transverse section on line *y y*, Fig. 1; and Fig. 3, a horizontal section of the same on line *z z*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a safe-door, having a casing or frame, *A*¹, containing at the upper part any approved time-lock, and below the same an ordinary combination-lock, that is worked by the spindle *A*² as soon as the fulcrumed and spring-acted lever-stop *B* is raised out of the way of the bolt by the time-lock. The spindle *A*² is extended back of the casing *A*¹, and provided between the same and the inside wall of safe-door with three supplemental tumblers, *C*, *C*¹, and *C*², of which the largest tumbler, *C*, next to the case *A*¹, reaches up to the lever-stop *B* of the time-lock, so as to lift the stop when turned in one direction, but be prevented from turning in the opposite direction by the dropping of the lever-stop into a rectangular notch, *a*, at the circumference of tumbler *C*.

The two remaining tumblers, *C*¹ and *C*², are of smaller size than the first tumbler, *C*, and the intermediate tumbler, *C*¹, smaller than the rearmost tumbler, *C*². The large tumbler, *C*, is keyed to the spindle, and the adjoining tumbler, *C*¹, attached to the first tumbler, while the third tumbler, *C*², is loose on the spindle, and worked by projecting pins *b* from the intermediate tumbler, in the usual manner in tumbler-locks. The smaller tumblers, *C*¹ and *C*², are each provided with a sector-shaped notch, *d*, into which the correspondingly-shaped end *d'* of a pivot-dog, *D*, fits. Dog *D* is connected by a pivot-pawl, *D'*, with a ratchet-wheel, *E*, on the rear end of the arbor of which is a pinion, *f*, which operates through the medium of an intermediate gear-wheel to revolve the wheel *H*, by which the arm *j* is made to raise the lever-stop *B* out of the notch *a* of tumbler *C*. This particular device or form of lock for releasing the lever-stop *B* forms no part of my invention, but is given simply as one of many ways in which said release may be effected, so as to allow the permutation-lock to be operated to open the safe-door.

The supplemental tumblers on the outside of the case of the combination-lock are only to be used when the time-lock fails to release the lever-stop, and, consequently, the spindle, at the appointed time. The notched supplemental tumbler *C* and lever-stop *B* prevent the turning of the spindle in the direction necessary to open the permutation-lock until the time-lock raises the stop out of the way. The spindle and supplemental tumblers may, however, be turned in opposite directions for working the pawl-and-ratchet connection with the time-lock. To do this the spindle is turned until the head of the dog *D* drops into the notch of tumbler *C*². The spindle is then reversed until the dog also drops into the notch of tumbler *C*¹. The spindle is then again reversed, and thereby the ratchet turned by the connecting-pawl for one tooth. This operation is repeated until the releasing-arm *j* is worked down far enough to raise the lever-stop, and admit the throwing of the bolt and working of the permutation-lock.

The supplemental tumblers are set to a suitable combination in the same manner as the

regular tumblers, the ratchet being continually worked by the same until the distance untraveled by the releasing-arm *j*, on account of the failure of the watch-movement, is made up by the supplemental tumblers and ratchet-connection, and thereby the safe opened without forcing the door and causing annoying detentions and other inconveniences.

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

1. The combination of the spindle A^2 of a permutation-lock, the notched supplemental tumbler *C* inserted thereon, and the lever-stop *B* of a time-lock, adapted to drop into said notch, the arrangement being such that the spindle is allowed to turn freely in one direction, but not far enough to operate the permutation-lock, until the stop-lever of the time-lock is raised out of the notch of the supplemental tumbler, as described and set forth.

2. The combination of the spindle of a permutation-lock, having supplemental tumblers outside of lock and of different size, the lever *D*, having an angular end, d' , and a pawl, D' ,

to operate the ratchet *E*, and the releasing mechanism of a time-lock, substantially as and for the purpose set forth.

3. The combination of the spindle of a permutation-lock, having notched supplemental tumblers, of which one is locked in one direction by the lever-stop of the time-lock, with a pawl-and-ratchet mechanism that operates the releasing mechanism of the time-lock, so as to admit the opening of both locks in case of failure of watch-movements, substantially as specified.

4. The spindle of the permutation-lock, having notched supplemental tumblers, one of which is prevented from turning in the direction for opening the permutation-lock by the lever-stop of the time-lock, while the others engage a pivot-dog of a pawl-and-ratchet mechanism that works the releasing mechanism of the time-lock, substantially as shown and described.

JOHN B. OVERMYER.

Witnesses:

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