J. L. HALL & H. GROSS.

TIME ATTACHMENT FOR LOCKS.

No. 180,228 Patented July 25, 1876.

Fig. 1

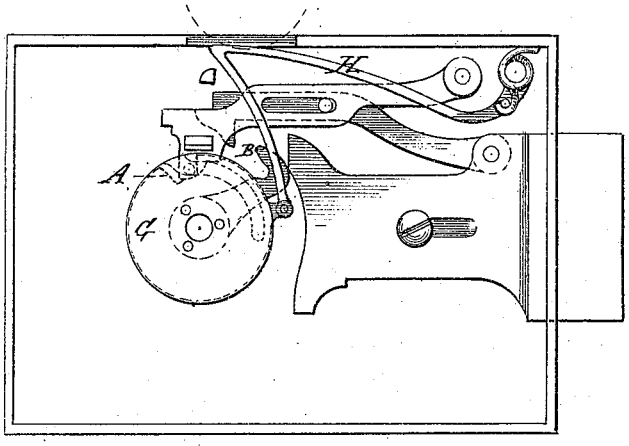


Fig. 2

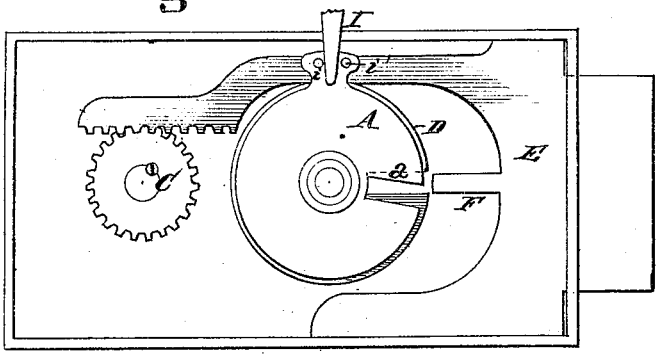
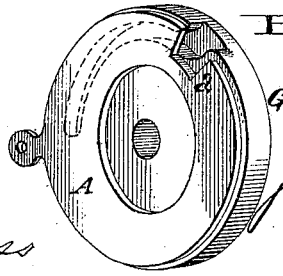


Fig. 3



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH L. HALL AND HENRY GROSS, OF CINCINNATI, OHIO, ASSIGNORS TO THE HALLS SAFE AND LOCK COMPANY, OF SAME PLACE.

IMPROVEMENT IN TIME ATTACHMENTS FOR LOCKS.

Specification forming part of Letters Patent No. **180,228**, dated July 25, 1876; application filed March 16, 1876.

To all whom it may concern:

Be it known that we, JOSEPH L. HALL and HENRY GROSS, both of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Time Attachment for Locks, of which the following is a specification:

Our invention consists in the provision upon the lock-arbor of a notched plate, which is arranged in such a relation to the notch in the drive-wheel or the notch in one of the tumblers as that the notch in said plate would not be coincident with the notch in the drive-wheel or tumbler when the lock is not permitted to be opened, but which is arranged so the time-trigger of the clock shall move said plate into position to permit the throwing of the bolt.

Figure 1 is a plan of an ordinary lock with our improved time attachment. Fig. 2 is a plan of another form of lock having our improved time attachment. Fig. 3 is a perspective view of our notch-plate in connection with the drive-wheel.

A represents the notched time-plate. It may be journaled upon the hub of the hook B, Fig. 1, or upon the arbor of the tumblers, as in Fig. 2. In the form of lock shown in Fig. 2 the bolt is thrown by the secondary spindle C, in the manner shown, D representing the tumblers, E the bolt, and F the projection to enter the notches of the tumblers and plate A.

The plate A and tumblers D or driving-wheel G may be of the same size, if desired.

The plate A is arranged to be vibrated so that its notch *a* may be thrown in or out of line by connection with the clock. This connection may be made as shown in Fig. 1, wherein the clock is designed to raise and lower the spring-arm H, which connects with the plate A in the manner shown; or the clock may be made to move the trigger I of Fig. 2, whose end is engaged between projections *i i'* of the plate A, the only essential characteristic of the connection being that it shall move the notch *a* into line for the opening of the lock at the proper time and move it onto line, as shown in Fig. 2, when the lock is not permitted to be opened.

We are aware that the combination of a permutation-lock and a time mechanism having a lever to hold the angle-bar out of the notches in the tumblers is old, and we therefore make no claim thereto; but

Having described our invention, what we do claim is—

In combination with a permutation-lock, an auxiliary independent notched plate or tumbler, A *a*, mounted by the side of and constructed to act in the same manner as the usual lock-tumblers, and a finger or device, I, of a time mechanism arranged to operate said plate, either directly or through intermediate devices, substantially as shown and described.

In testimony of which invention we hereunto set our hands.

JOSEPH L. HALL.
HENRY GROSS.

Witnesses:
GEO. G. ALLEN,
GEORGE H. HIGH.