(No Model.) 2 Sheets—Sheet 1.

C. D. DEAN.

TIME LOCK.

No. 563,456. Patented July 7, 1896.

Fig. 1.

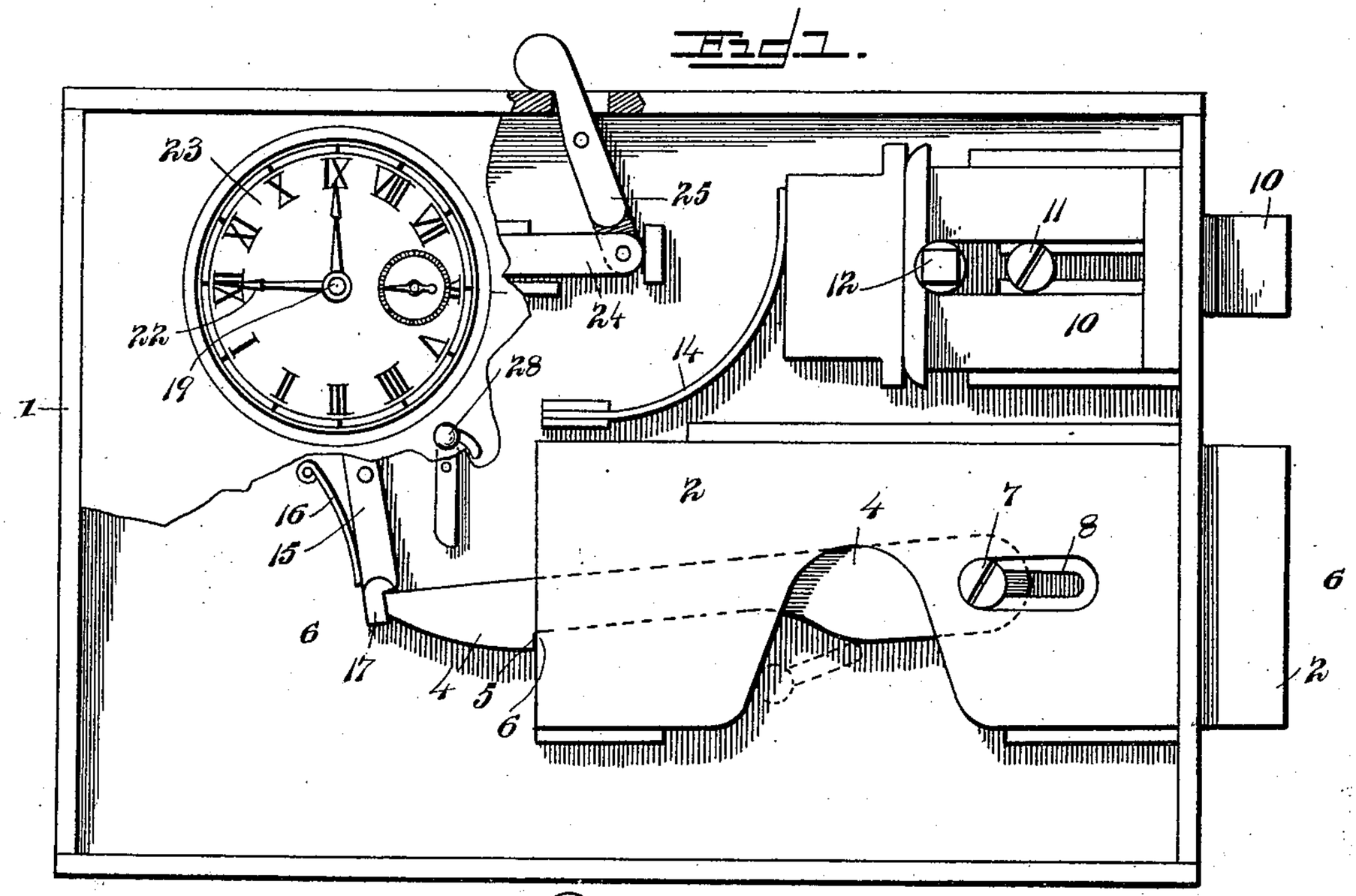
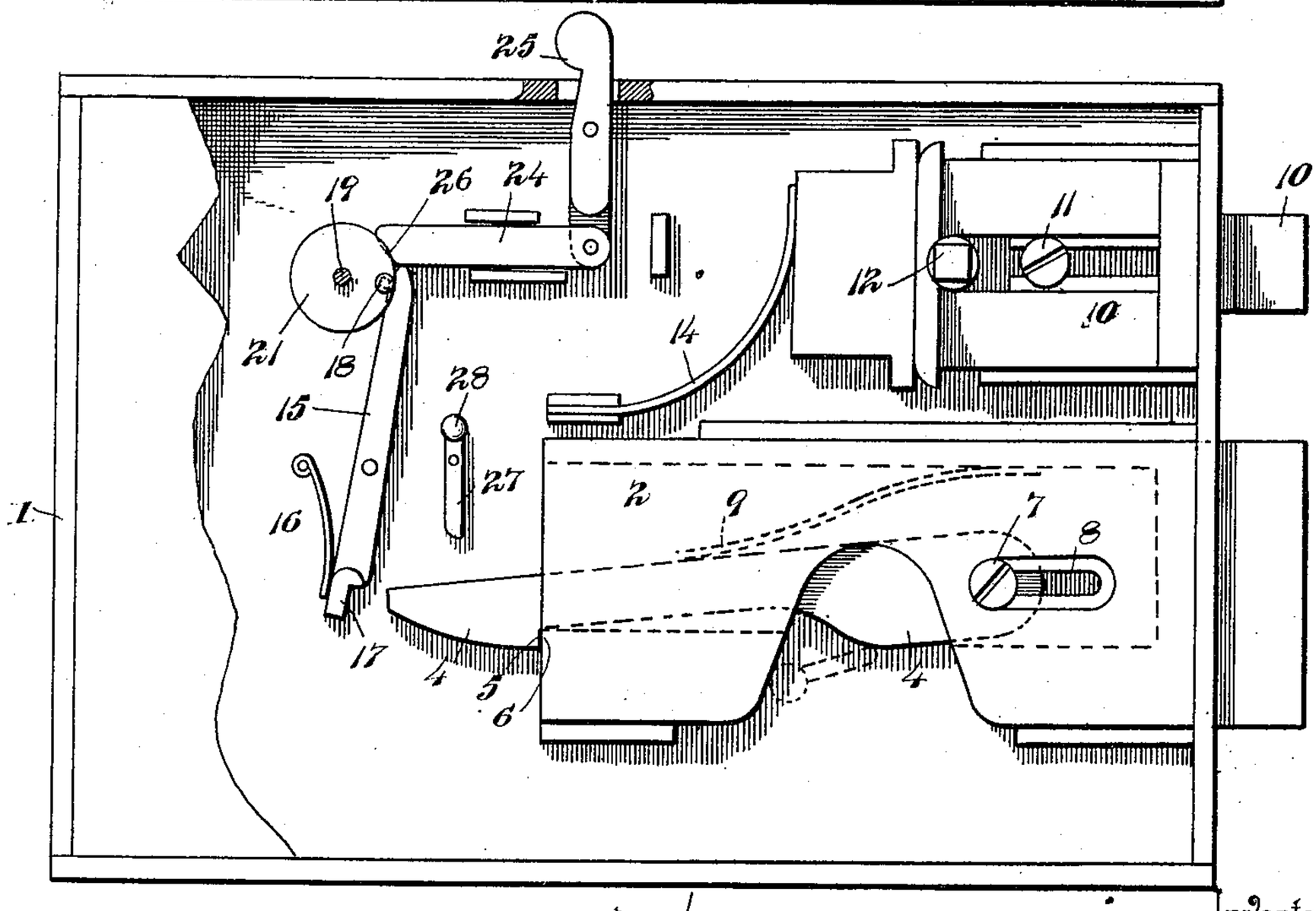


Fig. 2.



Witnesses

E. K. Stewart.

A. E. Wolf

Inventor

Claude D. Dean

By his Attorneys,

Church & Co.

(No Model.) 2 Sheets—Sheet 2.

C. D. DEAN.

TIME LOCK.

No. 563,456. Patented July 7, 1896.

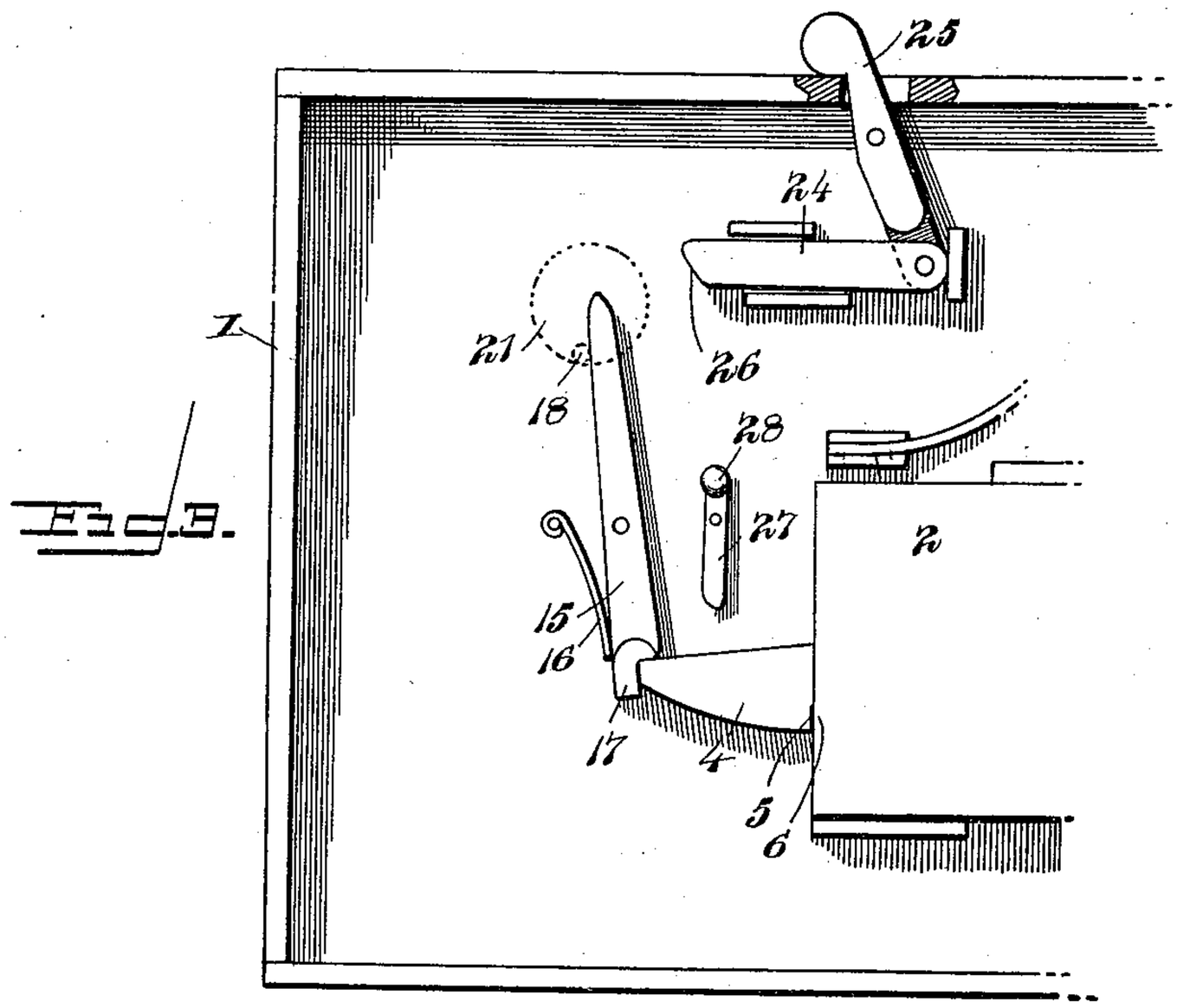


Fig. 3.

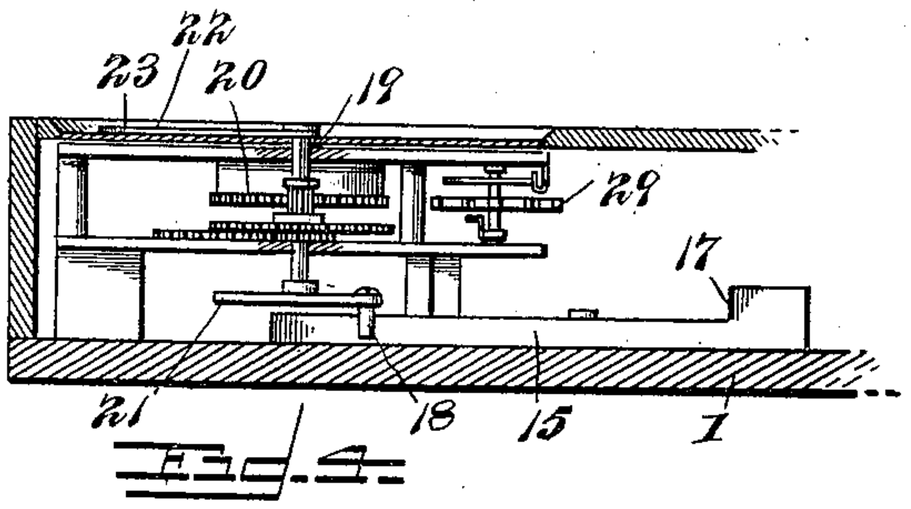


Fig. 4.

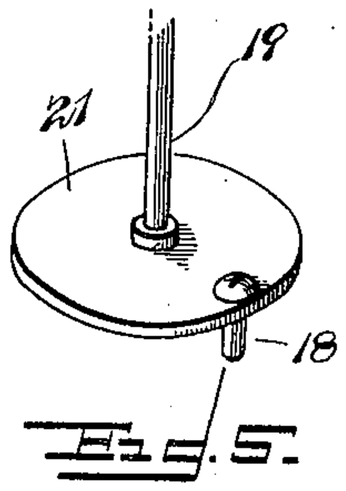


Fig. 5.

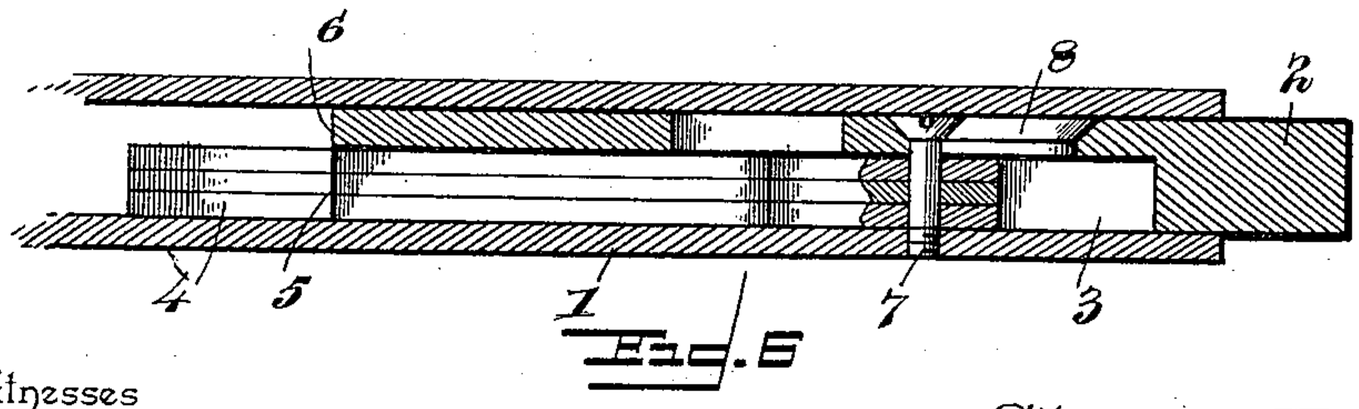


Fig. 6

Witnesses
E. K. Stewart.
C. E. Hoyle

Inventor
Claude D. Dean
By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CLAUDE D. DEAN, OF WESTPALMBEACH, FLORIDA, ASSIGNOR OF ONE-HALF TO P. B. RATCLIFFE, OF SAME PLACE.

TIME-LOCK.

SPECIFICATION forming part of Letters Patent No. 563,456, dated July 7, 1896.

Application filed October 29, 1895. Serial No. 567,320. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE D. DEAN, a citizen of the United States, residing at Westpalmbeach, in the county of Dade and State of Florida, have invented a new and useful Time-Lock, of which the following is a specification.

My invention relates to a time-lock, and has for its object to provide simple and efficient means controlled by chronometer mechanism for preventing the withdrawal of a locking-bolt until a predetermined interval of time has elapsed, whereby the lock may be set for manipulation at the end of a given period or at a certain time, and will be proof against tampering during that period.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a front view of the lock with the face-plate partly broken away, the parts being in the positions which they occupy when the lock is set. Fig. 2 is a front view with the face-plate omitted and the chronometer mechanism partly broken away to show the means for tripping the locking-arm, the parts being shown in the positions which they occupy when the locking-arm is disengaged from the tumblers. Fig. 3 is a partial front view with the face-plate and the chronometer mechanism omitted and showing the retaining-block in operative position. Fig. 4 is a partial vertical section taken in the plane of the arbor which carries the trip-pin. Fig. 5 is a detail view, in perspective, of the trip-pin and the disk by which it is carried. Fig. 6 is a horizontal section on the line 6 6 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the casing, in which is arranged the sliding bolt 2, said bolt having a cavity 3, in which are arranged the tumblers 4, said tumblers being provided with shoulders 5 for engaging a corresponding shoulder 6 on the rear end of the bolt. These tumblers are mounted upon a common pivot-screw 7, which in the construction illustrated forms a guide-pin for the bolt 2, the latter being slotted, as shown at 8, to receive the pin. The tumblers are provided with actuating-springs 9.

10 represents a spring-pressed latch mounted upon a guide-pin 11, and 12 represents a knob-arbor provided with a cross-head 13 for repressing the latch against the tension of its actuating-spring 14.

Arranged contiguous to the free ends of the tumblers 4 is a pivotal locking-arm 15, having an actuating-spring 16, whereby its shoulder 17 is normally held in operative relation with the extremities of the tumblers. The other arm of this locking-lever is arranged in the path of a trip-pin 18, carried by the arbor 19 of a chronometer mechanism 20, said mechanism being of any suitable or preferred construction. In the construction illustrated said trip-pin is secured to a disk 21, fitted upon the rear end of said arbor 19, and the pointer 22, which is secured to the front end of said arbor, traverses a dial 23, exposed at the outer side of the casing in position to be set by the operator to allow any given interval to elapse before the lock mechanism is released.

When the bolt 2 is shot and its shoulder 6 is engaged by the shoulders 5 of the tumblers, the free extremities of the tumblers are simultaneously engaged by the shoulder 17 of the locking-lever 15, and hence, even by the use of the proper key, the tumblers cannot be raised to disengage the bolt until the locking-lever has been moved to release the tumblers. This movement of the locking-lever to release the tumblers is accomplished by means of the trip-pin when the chronometer mechanism has progressed sufficient to bring the pin in contact with the free end of the lever, and any desired interval less than twelve hours, or less than that necessary for the trip-pin to make one complete revolution, may elapse before the trip-pin engages the lever, according to the position in which the pointer is arranged at the time of setting the lock.

If the time for which the lock is set passes without the use of the proper key to lift the tumblers and withdraw the bolt, it is obvious the parts will again return to their locked position and a period sufficient to allow the chronometer mechanism to produce a complete revolution of the arbor must elapse before the parts are again unlocked; but in order to pre-

vent this automatic relocking of the parts I employ a retaining-bolt 24, connected to an actuating-lever 25, pivoted in the casing and exposed at one end for manipulation by the operator. The nose 26 of this retaining-bolt is beveled, and the free end of the locking-lever 15 is similarly beveled, whereby when the locking-lever is repressed by means of the trip-pin against the tension of its actuating-spring the nose of the locking-lever will come in contact with the beveled nose of the retaining-bolt and after elevating the extremity of the latter will be held in its retracted position by the weight of the bolt against the tension of the spring 16. In the construction illustrated said retaining-bolt is mounted for a slight vertical swinging movement to allow the extremity of the locking-lever to elevate it; but in practice a spring may be employed to hold said bolt in its depressed position without causing sufficient resistance to prevent the extremity of the locking-lever from elevating and passing under the same. When it is desired, therefore, to retain the parts of the lock in their unlocked or released positions when actuated by the chronometer mechanism, the retaining-bolt is moved from the position shown in Fig. 2 to that shown in Fig. 3. I have also provided means whereby the lock mechanism may be released from the inside without waiting for the operation of the chronometer mechanism, such means consisting of a releasing-lever 27, arranged at one end in operative relation with the locking-lever and having a handle 28 exposed at the inner face of the lock.

The chronometer mechanism which is illustrated in the drawings is of the spring-actuated type controlled by a balance-wheel 29, but this feature may be varied by the substitution of any suitable time-measuring device. It will be understood, furthermore, that while the lock mechanism shown in the drawings is adapted especially for use in connection with house and similar doors it may be applied with similar facility and advantage to the doors of safes, or other receptacles.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. The combination with a locking-bolt, and tumblers for securing the bolt in its locking position, of a locking-lever arranged in operative relation with the tumblers, a trip-pin carried by an arbor actuated by chronometer mechanism and adapted to engage the locking mechanism to release the tumblers, and a releasing-lever arranged in operative relation with the locking-lever and having a handle exposed at the inner face of the lock-casing, substantially as specified.

2. The combination with a locking-bolt, and tumblers for securing the bolt in its locking position, of a locking-lever adapted to engage the tumblers, an actuating-spring for maintaining the locking-lever normally in operative relation with the tumblers, a trip-pin carried by an arbor actuated by chronometer mechanism, and a retaining-bolt arranged in the path of the locking-lever and adapted to engage the same and hold it in its retracted or releasing position, substantially as specified.

3. The combination with a locking-bolt, and tumblers for securing the same in its locking position, of a locking-lever provided with an actuating-spring to maintain it normally in engagement with the tumblers, a trip-pin carried by an arbor actuated by chronometer mechanism and adapted to engage the locking-lever to release the tumblers, and a retaining-bolt arranged contiguous to the free extremity of the locking-lever, said locking-lever and retaining-bolt having beveled coacting surfaces and the retaining-lever being mounted for lateral movement to allow the extremity of the locking-lever to deflect the same from its normal position, whereby when the locking-lever is moved by the trip-pin to release the tumblers it is held by the retaining-bolt in its releasing position, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CLAUDE D. DEAN.

Witnesses:
WILLIS M. MYERS,
ROBT. M. DEAN.