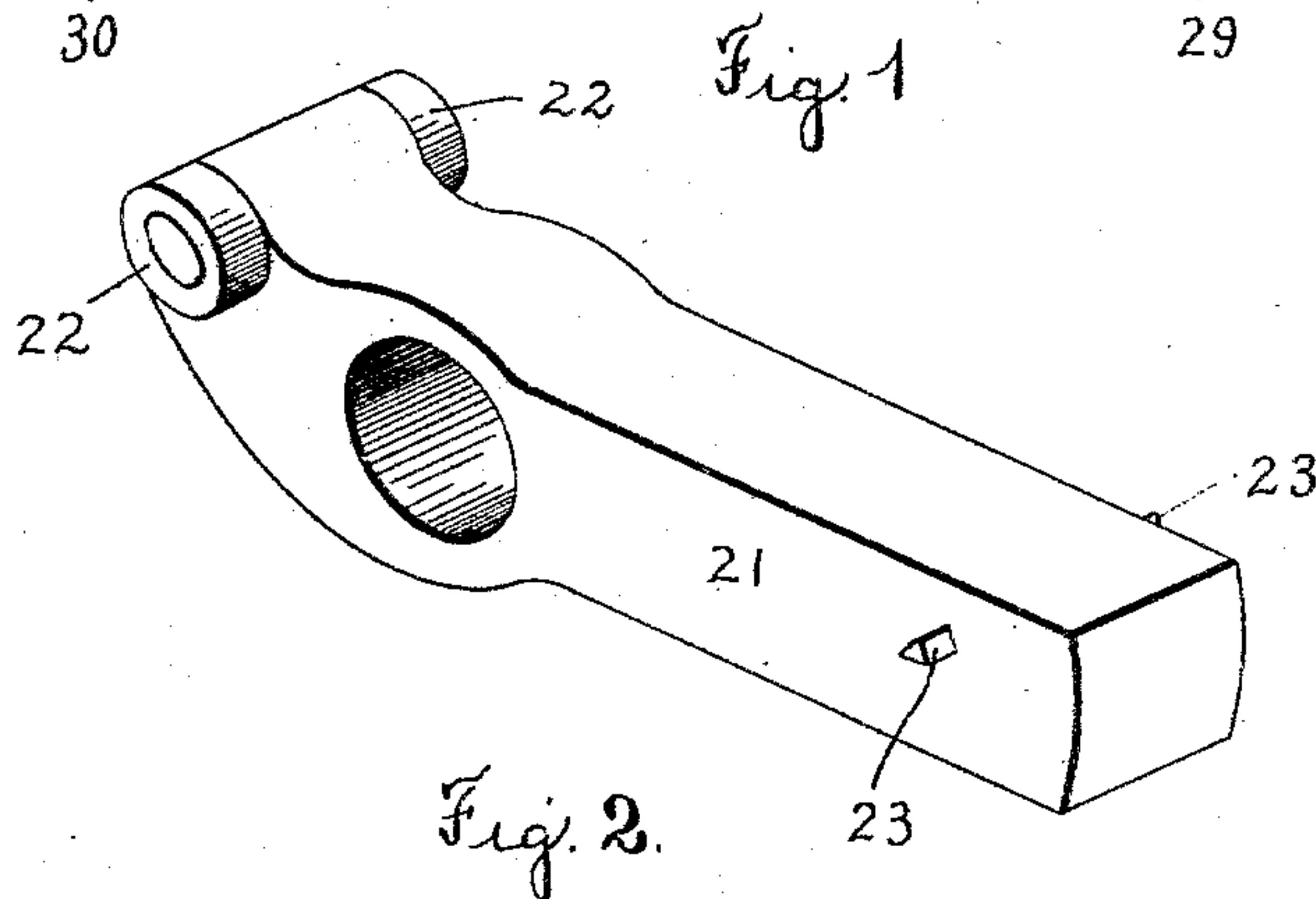
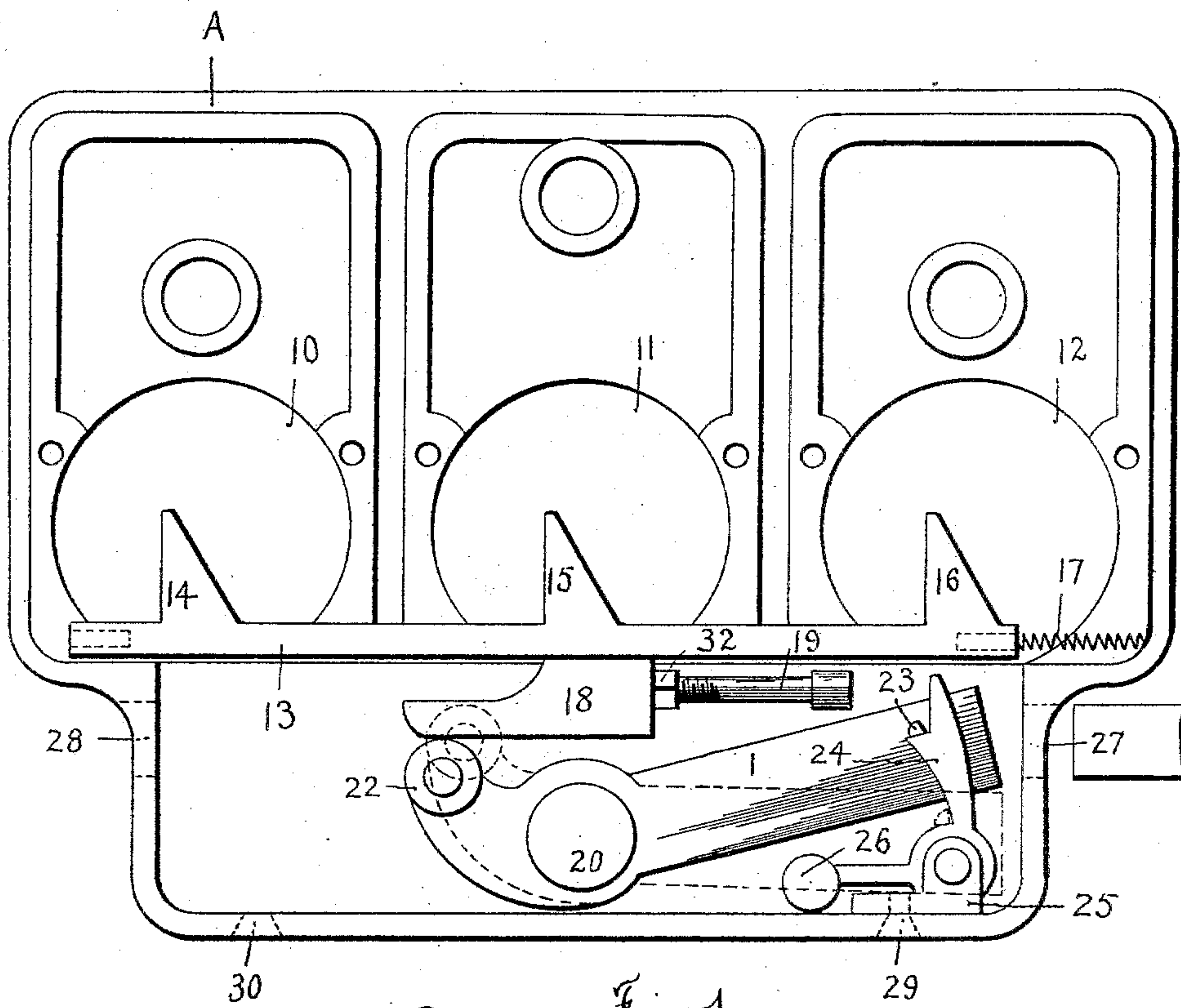


(No Model.)

F. H. BLAKE.
LOCK.

No. 597,382.

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Witnesses.

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UNITED STATES PATENT OFFICE.

FRED H. BLAKE, OF WORCESTER, MASSACHUSETTS.

LOCK.

SPECIFICATION forming part of Letters Patent No. 597,382, dated January 18, 1898.

Application filed January 14, 1897. Serial No. 619,184. (No model.)

To all whom it may concern:

Be it known that I, FRED H. BLAKE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Locks, of which the following is a specification.

My invention relates to an improved form of lock which has been designed for use in connection with bank-vaults or heavy safe-doors; and the object of my invention is to provide an accurately-opening lock in which the parts are arranged so that the releasing mechanism will act more promptly and accurately and so that the parts will be less liable to become worn or disarranged.

To these ends my invention consists of the parts and combinations of parts, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In that class of locks to which my invention more especially relates a stop or locking piece is arranged to engage behind the end of a part or plunger-bolt. This locking-piece has heretofore ordinarily been directly actuated by a movable bar or piece controlled from the time mechanism or other operative parts of the lock. When the movable bar is moved in one direction, it raises the locking-piece into its locked position, and when it is moved in the other direction the locking-piece is released and drops out of the way, so that the plunger-bolt may be withdrawn and the vault or safe opened. In those constructions in which the movable bar is controlled by a time mechanism the motion of the movable bar is very slow or gradual, and as said movable bar passes out of engagement with the locking-piece said locking-piece has heretofore been allowed to move down gradually, so that during the last part of the operation a part only of the locking-piece will be interposed in the path of the plunger-bolt. In practice I have found that an operation of this kind is undesirable, as the plunger-bolt may be prematurely moved into engagement with the upper edge of the locking-piece and the locking-piece may become worn off or de-

50 faced thereby. The especial object of my invention is therefore to provide a construction in which the

locking-piece will be mounted so as to pass at once to its released position from a fully-locked position.

A further object of my invention is to arrange the parts of a lock of this character so that they may be used in connection with a plunger-bolt which enters from either side of the casing.

In the accompanying drawings, Figure 1 is a sectional view of sufficient parts of a locking-mechanism to illustrate the application of my invention thereto, and Fig. 2 is a detached perspective view of the pivoted locking-piece.

A lock constructed according to my invention comprises a locking-piece, a movable bar—such, for example, as have been heretofore controlled by the time mechanism of a time-lock and which is arranged to set and release the locking-piece—and a detent which is arranged to hold the locking-piece in its fully-locked position until the detent is released by the movable bar. The parts of my lock are also preferably removably mounted in their casing, so that they may be turned around or adjusted to cooperate with a plunger-bolt entering the casing from either side.

Referring to the drawings in detail, A designates the casing, which, as illustrated, is provided with pockets 10, 11, and 12 for receiving the ordinary time mechanisms. Mounted in the casing A is the movable bar 13, having projections or ears 14, 15, and 16 for engagement with the time mechanisms. The movable bar 13 is pressed in one direction by means of a spring 17. On its under side the movable bar 13 is provided with a downwardly-extending projection or cam 18. Friction-rollers 22 are journaled on opposite sides of the upwardly-extending tail or end of the locking-piece 21, the roller 22 on the front side of the locking-piece 21 being located in position to be engaged by the downwardly-extending cam or projection 18. The locking-piece 21 is journaled on a stud 20, which stud is arranged centrally with respect to the casing A. A pin 23 extends through the outer end of the locking-piece 21 and is arranged to engage with a detent 24, pivotally mounted in a bracket 25. The detent 24 is normally held in engagement with the pin 23 by means of a weighted arm 26. The bracket 25 is fas-

tened in place in the casing A by means of a suitable screw, as 29. An operating bolt or piece 19 is adjustably threaded into the cam 18 of the movable bar 13 and is fastened in its adjusted position by means of a lock-nut 32.

The action of the plunger-bolt B, which is arranged to enter the casing A through an opening 27, (indicated by dotted lines,) is controlled by the position of the locking-piece 21. When the locking-piece 21 is in its raised position, it will engage behind the end of the plunger-bolt B and prevent said bolt from being retracted. When the locking-piece 21 is released, it will move down to its lowest position and the bolt B may be retracted and the vault or safe unlocked in the ordinary manner.

During the entire time that the device is locked the locking-piece 21 will be supported in its fully-locked position and will oppose a firm resistance to the retraction of the plunger-bolt B—that is to say, the locking-piece 21 will be supported in a fully-locked position until the operating bolt or piece 19 engages the top of the detent 24 and moves the same out of engagement with pin 23, so that the locking-piece 21 will be released and will pass at once from its fully-locked position to an inoperative position.

When a lock constructed according to my invention is to be used in connection with a plunger-bolt entering the other side of the casing A—as, for instance, through the opening indicated by the dotted lines 28—the movable bar 13 and locking-piece 21 may be removed and turned to an opposite position. The bracket 25 may also be moved to the other side of the casing and held in position by means of a screw inserted through a suitable opening, as 30, thus bringing the parts in position to cooperate with a plunger-bolt at the opposite side of the casing from that illustrated in Fig. 1.

When the parts of my lock have been placed in proper position in the casing A, they may be secured in place by a cover, which may be screwed to the casing A in any of the ordinary manners.

I am aware that changes may be made in the construction of locks by those who are skilled in the art without departing from the scope of my invention as expressed in the claims, and while my construction has been especially designed for use in connection with time-locks, it may, if desired, be employed in connection with combination-locks or other forms of actuating mechanism. I do not wish, therefore, to be limited to the forms which I have shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, the combination of a locking-piece, a movable piece arranged to operate the locking-piece to

set the same in its locking position, or to release the same, and a detent for holding the locking-piece in its fully-locked position until said detent is released by the movable piece, substantially as described.

2. In a device of the class described, the combination of a locking-piece, a movable bar having a cam arranged to shift the locking-piece from an unlocked to a locked position, and a detent, the parts being arranged so that the locking-piece will pass at once from its fully-locked position into an inoperative position when the detent is released, substantially as described.

3. The combination of a casing, a locking-piece, a movable bar arranged to operate said locking-piece, and a detent arranged to hold the locking-piece in its fully-locked position until the same is released, said parts being removably and reversely mounted in the casing so that they may be set to cooperate with a plunger-bolt entering the casing at either side thereof, substantially as described.

4. The combination of a pivoted locking-piece, a movable bar arranged to set and release the locking-piece, a weighted detent, and an adjustable operating-pin for engaging said detent, the parts being arranged so that the locking-piece will pass at once from its fully-locked position into an inoperative position when the detent is released, substantially as described.

5. The combination of a casing A, a stud 20 arranged centrally with respect to said casing, a locking-piece 21 pivoted on said stud, a movable bar 13 having a cam for engaging and setting said locking-piece, a weighted detent 24 for holding the locking-piece in its fully-locked position, an adjustable detent-operating pin 19 carried by the movable bar 13, and a clamping-nut 20 for holding the pin 19 in its adjusted position, substantially as described.

6. The combination of a casing A, a stud 20 arranged centrally with respect to said casing, a locking-piece 21 removably and reversibly pivoted on said stud, a reversible, movable bar 13 having a cam for engaging and setting said locking-piece, a weighted detent 24 for holding the locking-piece in its fully-locked position, a removable, reversible bracket 25 supporting said detent, and an adjustable operating-pin 19 carried by the movable bar 13, said parts being removably and reversibly arranged to cooperate with a plunger-bolt entering the casing at either side thereof, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRED H. BLAKE.

Witnesses:

LOUIS W. SOUTHGATE,
PHILIP W. SOUTHGATE.