(Model.)

H. P. PRUIM.

UNLOCKING ATTACHMENT FOR TIME LOCKS.

No. 292,583. Patented Jan. 29, 1884.

Fig: 2.

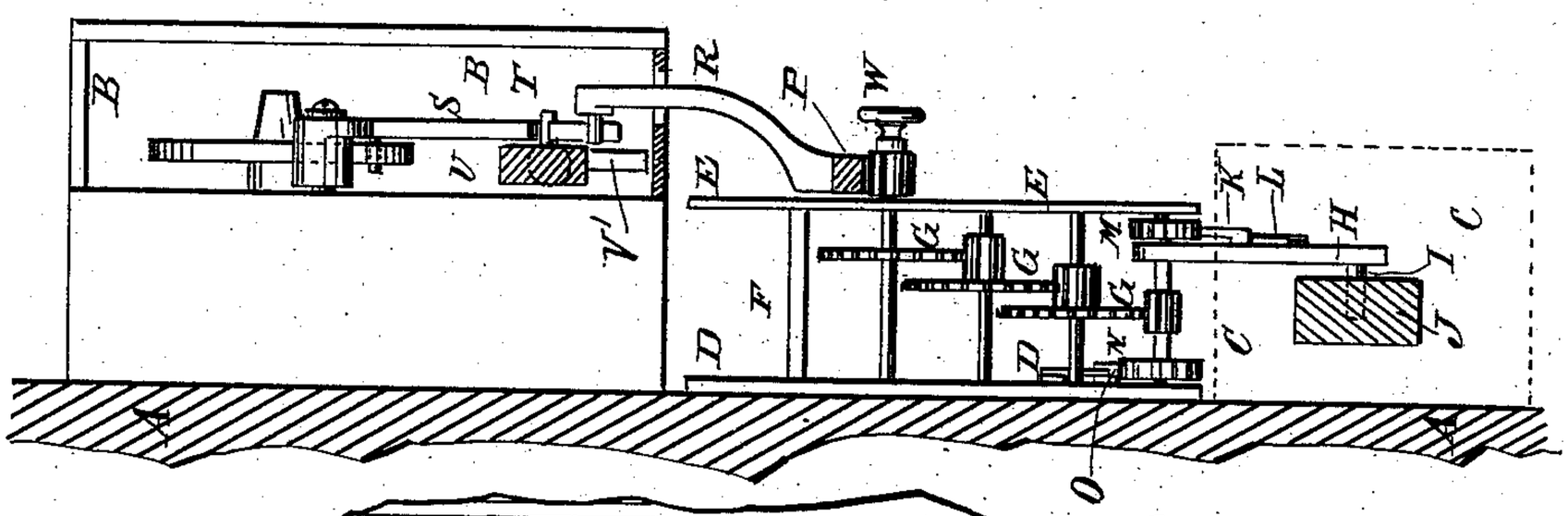


Fig: 1.

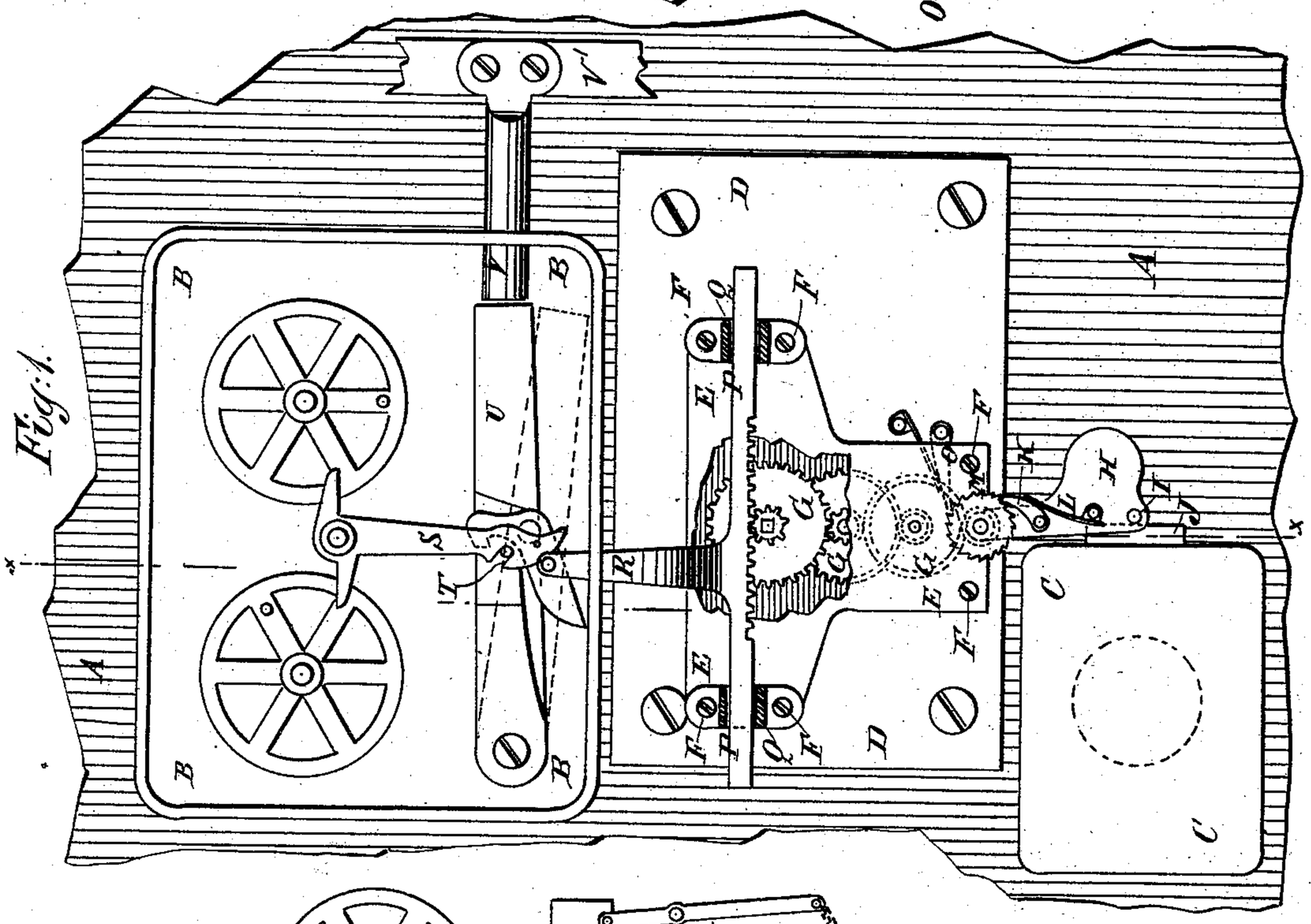
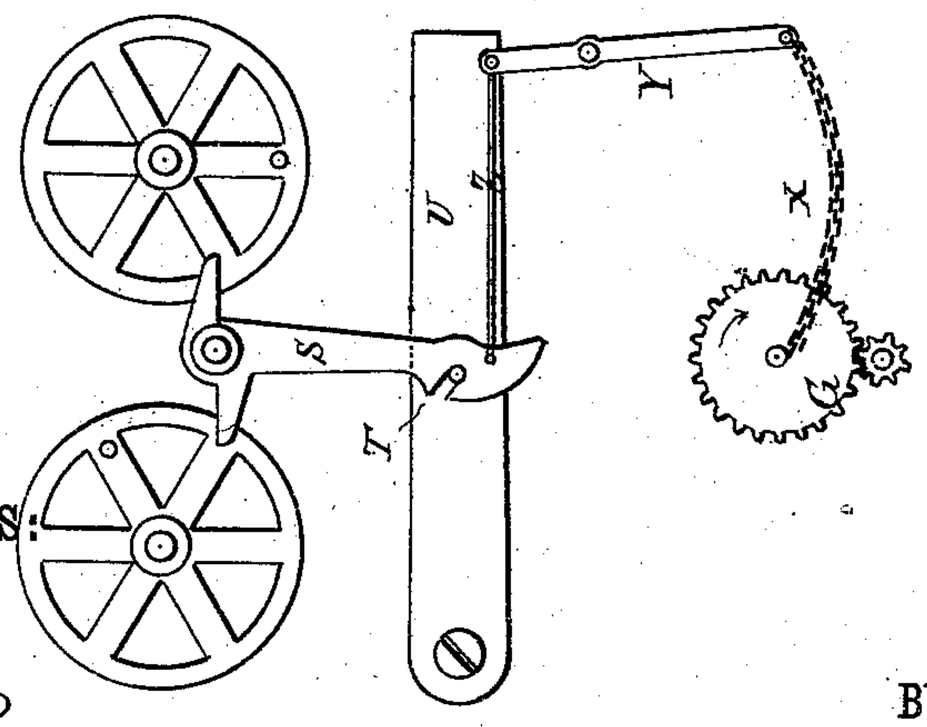


Fig: 3.



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HIRAM P. PRUIM, OF GRAND HAVEN, MICHIGAN.

UNLOCKING ATTACHMENT FOR TIME-LOCKS.

SPECIFICATION forming part of Letters Patent No. 292,583, dated January 29, 1884.

Application filed August 7, 1883. (Model.)

To all whom it may concern:

Be it known that I, HIRAM P. PRUIM, of Grand Haven, in the county of Ottawa and State of Michigan, have invented certain new and useful Improvements in Unlocking Attachments for Time-Locks, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation of my improvement, shown as connected with a time-lock, part being broken away. Fig. 2 is a sectional elevation of the same, taken through the broken line *x x*, Fig. 1. Fig. 3 shows a modification of the same.

The object of this invention is to provide a means for opening a safe or vault door provided with a time-lock, in case the clock-work should break down or stop, so that it will not be necessary to break open the said door.

The invention consists in an unlocking attachment for time-locks, constructed with a weighted lever operated by the mechanism of a combination-lock, and connected by a pawl and ratchet-wheel with a train of gear-wheels operating a rack-bar provided with a trip-arm adapted to engage with the trip-latch of a time-lock, so that the said latch can be tripped by the continued movement of the said combination-lock mechanism, as will be hereinafter fully described.

A represents the door of a safe or vault, which is provided with a time-lock, B, and a combination-lock, C.

To the door A, between the locks B C, is secured a plate, D, with which is connected a plate, E, by short posts F.

To the plates D E is journaled a train of gear-wheels, G, and to the journal of the first wheel in the train is journaled a weighted lever, H, in such a position that the said lever, when hanging free, or a pin, I, attached to it, will rest against the bolt J of the combination-lock C, so that the said lever will be vibrated as the said bolt is moved out and in.

To the lever H is pivoted a pawl, K, the engaging end of which is held by a spring, L, against the teeth of a ratchet-wheel, M, attached to the journal of the first wheel of the train G, so that motion will be given to the said train of gear-wheels by the vibration of the lever H. The journal of the first wheel of the train G is provided with a second ratchet-wheel and pawl, N O, to prevent the said journal from being turned back by the friction of the pawl K in its return movement. The train of gear-wheels G is formed of a series of small gear-wheels, each of which, except the last, meshes into the teeth of a large gear-wheel rigidly connected with the next small gear-wheel. The teeth of the last small gear-wheel of the series mesh into the teeth of a rack-bar, P, which slides in bearings Q, secured to the plate E by the posts F, that fasten the said plate in place.

To the rack-bar P is attached an arm, R, which projects upward into such a position that its upper end, or a pin attached to its upper end, will strike against the curved rear edge of the latch S, and push the said latch S off the catch-pin T, attached to the latch U, allowing the said latch to drop away from the end of the arm V, connected with the ordinary bolt-frame V′, so that the bolts of the door can be pushed back and the said door opened. With this construction the bolt J of the combination-lock C would require to be moved out and in about six thousand times to bring the rack-bar P to the position shown in Fig. 1, and about six thousand times more to move the said bar P so far forward as to move the latch S and release the latch U, so that a burglar or other unauthorized person would not have time to open the door by means of my improvement before he would be interrupted by the opening of the office. This time can be further increased, if desired, by increasing the ratio between the number of teeth on the small wheels of the train and the number of teeth on the large wheels of the said train. With this construction it would require a long use of the lock C, in locking and unlocking the door, to move the rack-bar P forward any appreciable distance; but in case it should be moved too far forward, and after it has been moved forward in unlocking the time-lock, the nut W can be screwed off, the rack-wheel removed from its square spindle, and the said rack-bar moved back, when the rack-wheel and nut can be replaced. If desired, the rack-

bar P can be placed in a vertical position, in which case the upper end of the said rack-bar will serve as an arm, R, to push back the latch S and allow the latch U to drop away from the bolt V. The rack-bar P can be replaced, if desired, by a chain, X, attached at one end to the journal of the last gear-wheel of the train G, and connected at its other end with the lower end of the lever Y, pivoted to the plate E or other suitable support, and connected at its other end with the latch S by a chain or rod, Z. This modification is illustrated in Fig. 3.

If desired, the plates carrying the attachment may be mounted upon springs, so that a heavy blow upon the safe will not be liable to jar the parts of the said attachment out of their proper positions.

I do not abandon or dedicate to the public any patentable feature set forth herein and not hereinafter claimed, but reserve the right to claim the same either in a reissue of any patent that may be granted upon this application or in other applications for Letters Patent that I may make.

I am aware that a spring-pressed lever having its lower arm resting against the bolt of a combination-lock and its upper arm provided with a spring-pressed pawl engaging a ratchet-wheel, which is provided with a pin engaging a gear-wheel fitted on a screw-spindle under a hinged tongue, whose free end rests against the bolt of a time-lock, is old, and I therefore do not claim such invention.

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

1. An unlocking attachment for time-locks constructed substantially as herein shown and described, and consisting of a weighted lever connected by a pawl and ratchet-wheel with a train of gear-wheels operating a rack-bar provided with a trip-arm, to adapt the attachment to be interposed between a combination-lock and a time-lock, as set forth.

2. In an unlocking attachment for time-locks, the combination, with the bolt of a combination-lock and the trip-latch of a time-lock, of the weighted lever H, the pawl and ratchet-wheel K M, the train G of gear-wheels, and the rack-bar P, having trip-arm R, substantially as herein shown and described, whereby the said latch will be tripped by the continued movement of the said bolt, as set forth.

3. In an unlocking attachment for time-locks, the combination, with the bolt of a combination-lock and the trip-latch of a time-lock, of a weighted lever connected by a pawl and ratchet with a train of gear-wheels, and means, substantially as herein shown and described, for communicating the motion given to the train of gear-wheels by the bolt of the combination-lock to the trip-latch of the time-lock, as and for the purpose set forth.

HIRAM P. PRUIM.

Witnesses:
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