

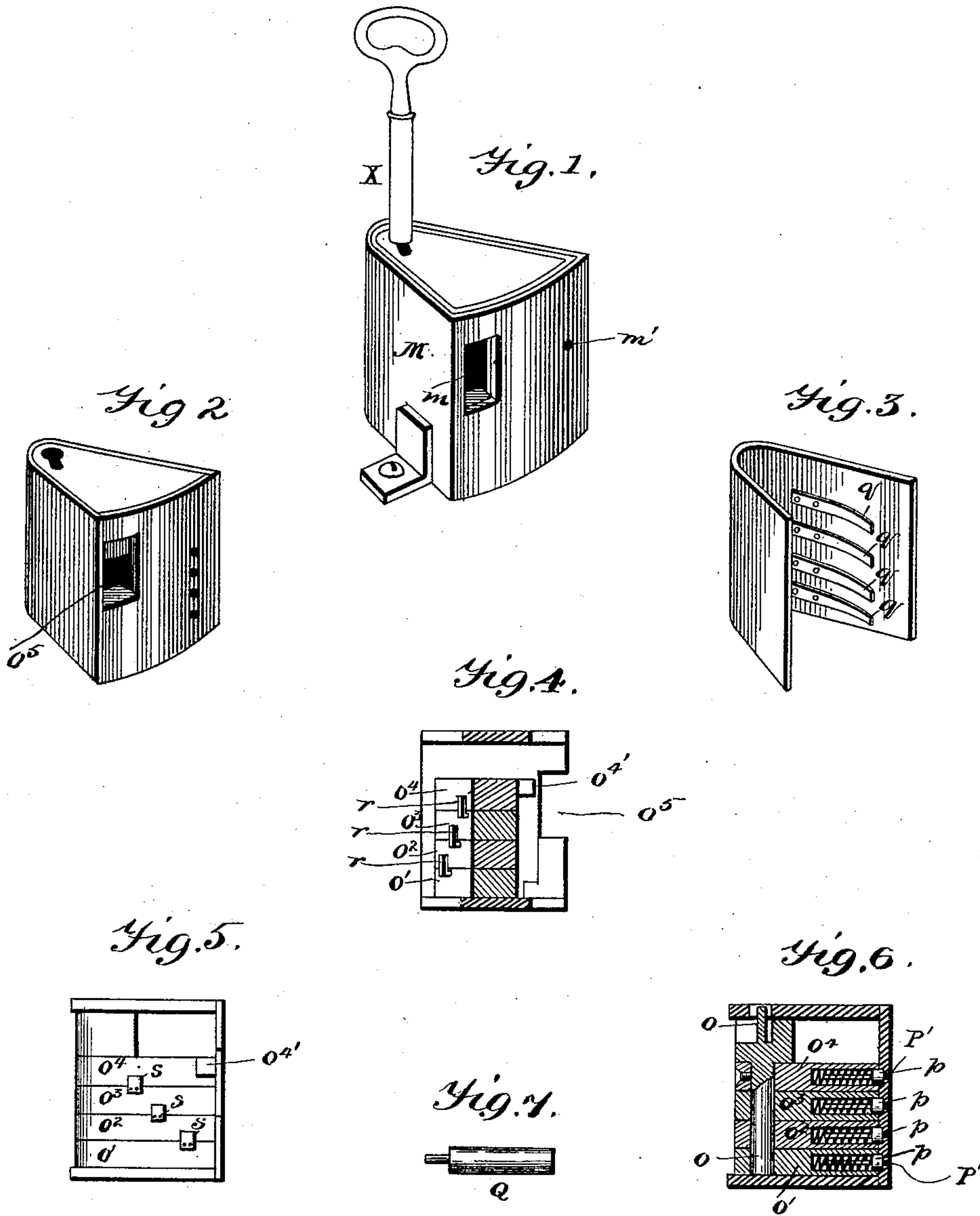
(No Model.)

2 Sheets—Sheet 1.

C. M. STINER.
LOCK.

No. 435,569.

Patented Sept. 2, 1890.



WITNESSES:
Wm. S. Oliver
Thomas K. Trenchard

INVENTOR
Clarence M. Stiner
BY *Wm. S. Oliver*
ATTORNEY.

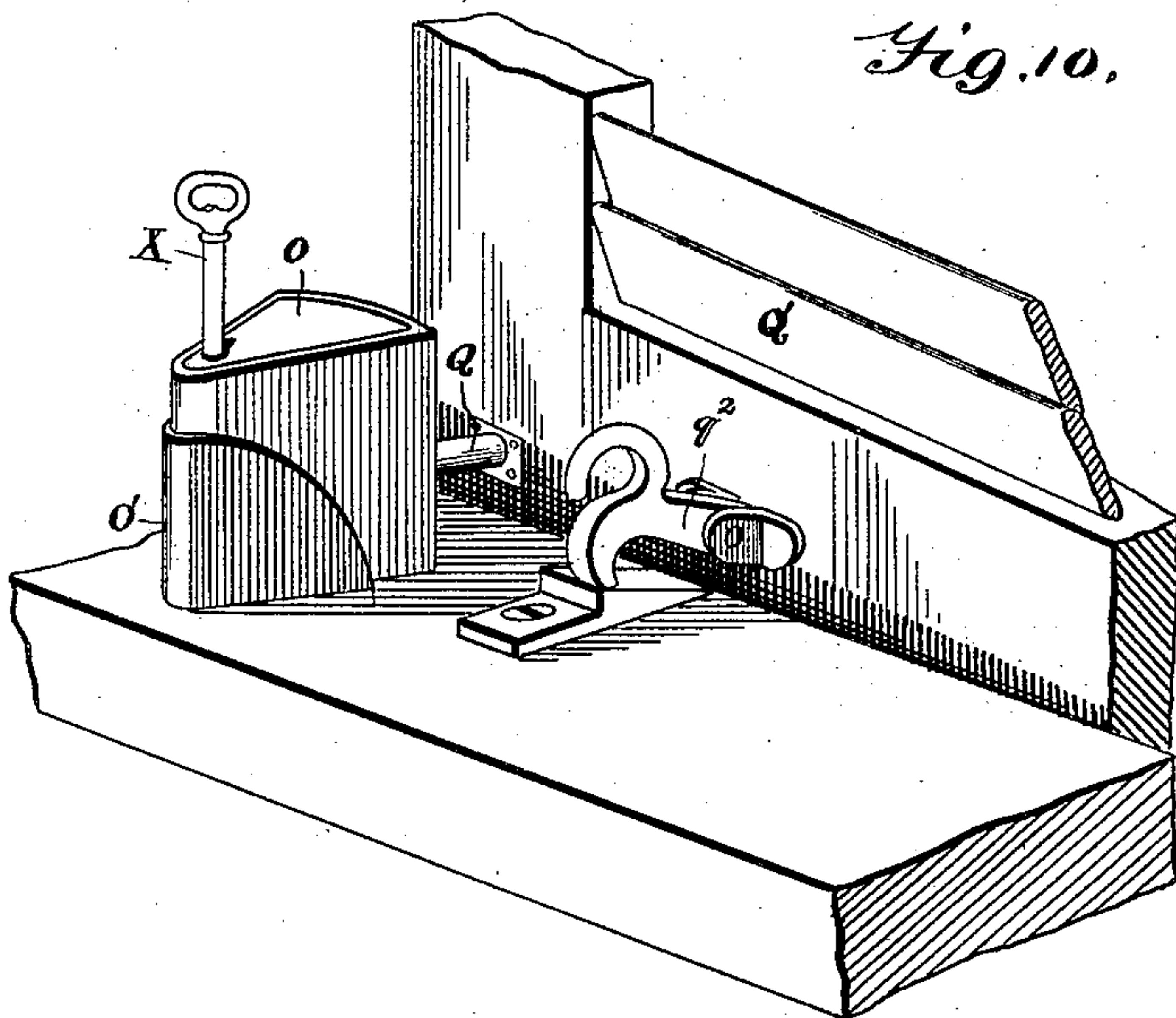
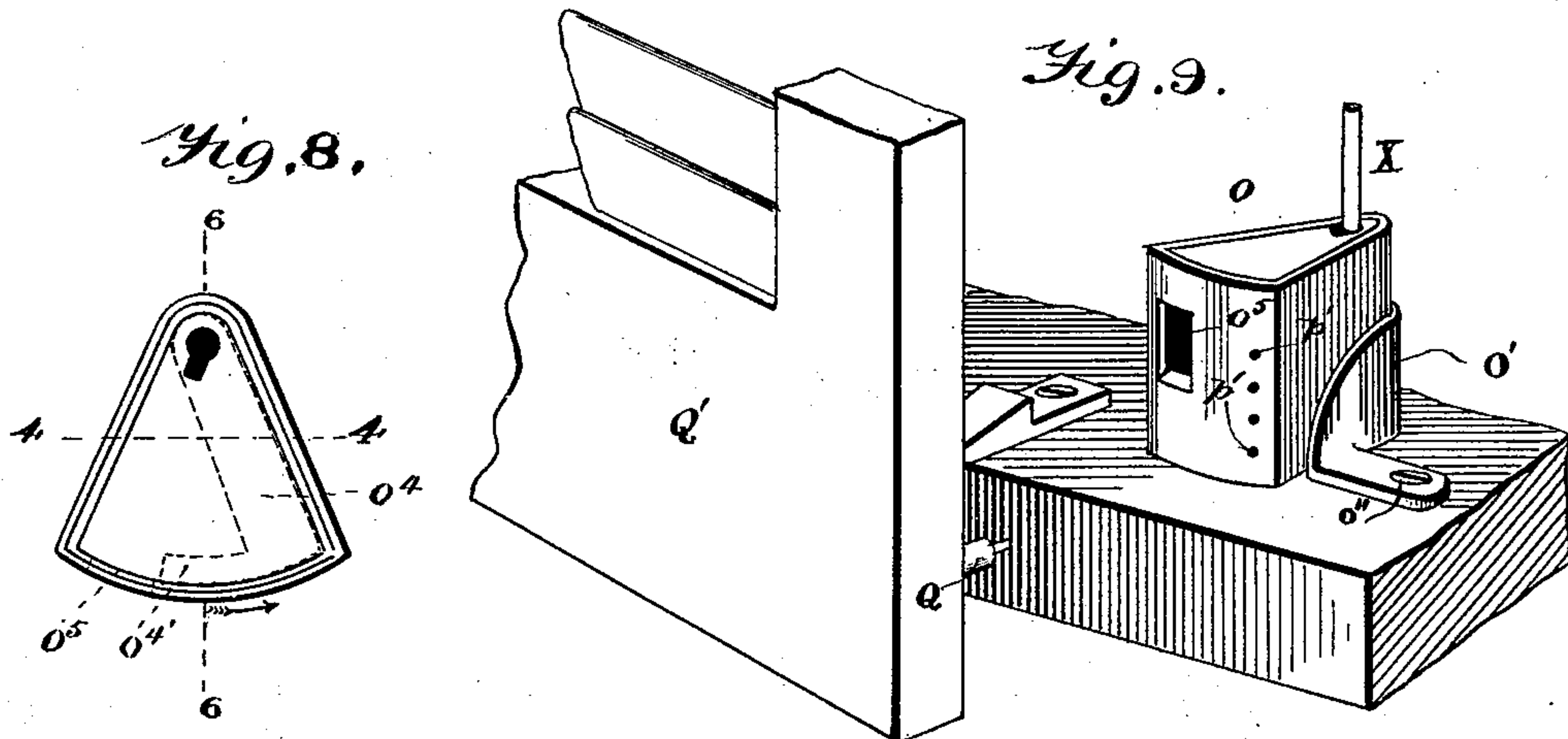
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LOCK.

No. 435,569.

Patented Sept. 2, 1890.



WITNESSES:

Frank S. Ober.
Thomas K. Truichard.

INVENTOR

Clarence M. Stiner.

BY

W. D. Johnston
ATTORNEY.

UNITED STATES PATENT OFFICE.

CLARENCE M. STINER, OF NEW YORK, N. Y.

LOCK.

SPECIFICATION forming part of Letters Patent No. 435,569, dated September 2, 1890.

Application filed May 17, 1890. Serial No. 352,186. (No model.) Patented in England October 29, 1889, No. 17,037.

To all whom it may concern:

Be it known that I, CLARENCE M. STINER, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks, (for which I have received Letters Patent in England, No. 17,037, dated October 29, 1889,) of which the following is a specification.

In my United States patent, No. 413,794, dated October 29, 1889, I have illustrated and described a lock which is adapted to insure the performance of one act or duty—such as the turning off of water in a building at night—before another act or duty—such as the locking of the front door of the same building—can be performed, and to said patent reference may be had for a general and detail statement of the main purposes and advantages of the invention. Apparatus based on the same general idea may also be used to compel the performance of a greater number or series of acts; and the production of such apparatus is the object of my present invention.

My invention consists in the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the lock-holder with the lock and key inserted therein. Fig. 2 is a perspective view of the lock removed from the holder. Fig. 3 is a perspective view of the inner walls of the lock. Fig. 4 is a vertical section of the lock, taken on line 4 4 of Fig. 8. Fig. 5 is a side elevation of the lock with one side wall removed. Fig. 6 is a vertical section on line 6 6 of Fig. 8. Fig. 7 is a detail view of the pin-key. Fig. 8 is a plan of the lock and holder. Fig. 9 is a perspective view showing the lock in operation, and Fig. 10 is a similar view from the other side of Fig. 9.

M represents the lock casing or shell, which may be placed adjacent to a cock or valve in the same manner as illustrated in my patent referred to. The shell M is provided with opening *m*, corresponding with the large opening *b'* in shell B, and with a small hole *m'* corresponding with the slit *c'*. The lock itself is made of a shape to fit within the shell, and is provided with a key-shaft *o*, the upper end of

which is adapted to receive the key X. To this shaft is pivoted four tumblers *o'* *o''* *o'''* *o''''*. The tumbler *o''* is tight on the key-shaft and is provided with a bolt or projection *o''''*, which, when the said tumbler is thrown, extends across the opening *o'''* in the lock. This opening *o'''* is in line with opening *m* when the lock is in the shell M. Each tumbler is provided with a spring-bolt *p*, which, when the tumblers are in the position or plane indicated in Fig. 8, extends into and engages with cavities in the front wall of the lock, as shown in Fig. 6. The tumblers are therefore locked in that position. The front wall of the lock is perforated at points *p'* opposite the bolts *p*, as shown, so that by means of a pin-key (shown in Fig. 7) the spring-bolts *p* may be thrown back to release the tumblers.

One of the side walls of the lock is fitted with four springs *q q q q*, as shown in Fig. 3, which bear against the sides of the four tumblers and tend to swing them on their pivots. On the opposite sides of the tumblers and connected therewith are placed a series of lugs *r r r* and *s s s*. The lugs *r* are in the form of brackets. The lower one is secured to the lower tumbler and extends upward into the plane of movement of the second tumbler. The next lug is connected to the second tumbler and extends up into the plane of movement of the third tumbler, and so on. The series of lugs *s s s* are arranged in exactly the same way as the lugs *r r r*; but the lugs *r r r*, as before stated, are slightly offset or formed like brackets, so that the tumblers to which they are attached may have a slight limited motion with respect to the others. The springs *q q q q* bear against that side of the tumblers carrying the lugs *r r r*. As before stated, the upper tumbler is tight on the key-shaft. When the key is inserted in the lock and the upper tumbler is turned thereby in the direction of the arrow, Fig. 8, and to the position indicated by dotted lines, all of the tumblers will be carried with it until they are brought up against the springs *q* and the spring-bolts *p p p p* drop into the notches on the front wall of the casing. This locks all of the tumblers and prevents them from moving back until they have been released, locks the key in place, and also withdraws bolt *o''''* from the opening *o'''*. Owing to

the position of the lugs with respect to the tumblers, it will be observed that it is necessary to release the bolts *p* in exact succession, beginning with the lower one. When the lower bolt *p* is released, the spring *q*, bearing upon the tumbler, swings the tumbler a slight distance on its pivot until the bolt is out of the notch. This slight movement of the tumbler is permitted on account of the offset construction of the lugs *r r r*. The next tumbler may now be released and moved in the same manner, and so on throughout the series of tumblers, it being necessary to release the lower one first and the others successively, as before observed. If it should be attempted to release the second tumbler first, it is evident that it could not be accomplished, inasmuch as the lug *s* on the lower or first tumbler would prevent the lower spring *q* from forcing the tumbler over.

In describing the operation of this apparatus let us consider, for example, that the operations to be enforced are the locking of three window-shutters, turning off the water, and locking of the front door. One of the pin-keys *Q* shown in Fig. 7 must be attached to or connected in some manner with each of the shutters *Q'* and with the handle of the water-cock. Then the lock *O*, with the key *X* held in it, is carried to one of the windows and placed in a seat *O'* in the proper position to receive the pin-key *Q* in the lower perforation *p'* of the lock when the shutter is closed. The act of closing the shutters, as illustrated in Figs. 9 and 10, therefore releases the lower tumbler. The lock may then be removed and carried to the next shutter and the same operation performed to release the second tumbler, and so on, until all three of the shutters have been locked and the three tumblers released. The lock is then carried to the lock-holder *M* and inserted therein. This lock-holder is located with respect to the cock-handle substantially as shown in my patent referred to, and the cock-handle will be provided with a keeper having loops to enter the opening *m*. The water is then turned off and the cock-handle carrying the keeper forced into the opening *m*. At the same time a pin-key like that shown in Fig. 7, connected with the cock-handle, also penetrates perforation *m'* in the lock-holder *M*, which is in line with the upper hole *p'* in the front wall of the lock and releases the upper tumbler. All four tumblers are now released and the key may be turned, thus throwing over bolt *o'* and locking the valve. Key *X* may now be removed and used to lock the front door.

I have mentioned the shutters and valve

simply as an instance; but it is quite obvious that the locking of any combination or number of doors, windows, gates, shutters, hatchways, handles, levers, &c., may be assured by simply fitting them with the proper keys, lock-holders, &c., in accordance with the principle herein referred to. Each seat *O'*, it will be noticed, is pivotally connected with its support, as at *o''*. This is to enable said seat to be swung, so as to allow the removal of the lock after the shutter or other similar device has been closed and fastened, as by its latch *q*².

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

1. In a lock, a plurality of tumblers, in combination with two series of lugs, the lugs being connected with the tumblers in such manner that one of the tumblers cannot move without carrying all the others with it.

2. In a lock, a plurality of tumblers, latches or devices connected with a plurality of gates or bars for releasing the respective latches, for the purpose set forth.

3. In a lock, a key-shaft, in combination with a plurality of tumblers, all but one of which are loosely pivoted thereto, latches to prevent the movement of the tumblers, lugs to insure the movement of the loose tumblers when the tight one is thrown, and keys or other devices connected with a plurality of gates or bars for releasing, successively and respectively, the latches, for the purpose described.

4. In a lock, the combination, with a series of pivoted tumblers and a corresponding series of springs bearing against the same, of latches for locking said tumblers and means connected with a plurality of gates or bars for releasing, respectively and successively, the said latches.

5. In a lock, the combination, with a series of pivoted tumblers and a corresponding series of springs bearing against the same, of latches for locking said tumblers, lugs constructed and arranged to permit of a limited movement of the tumblers under the action of the springs, and means connected with a plurality of gates or bars for releasing, respectively and successively, the said latches.

In witness whereof I have hereunto affixed my name in the presence of two subscribing witnesses.

CLARENCE M. STINER.

Witnesses:

WM. A. ROSENBAUM.
FRANK S. OBER.