

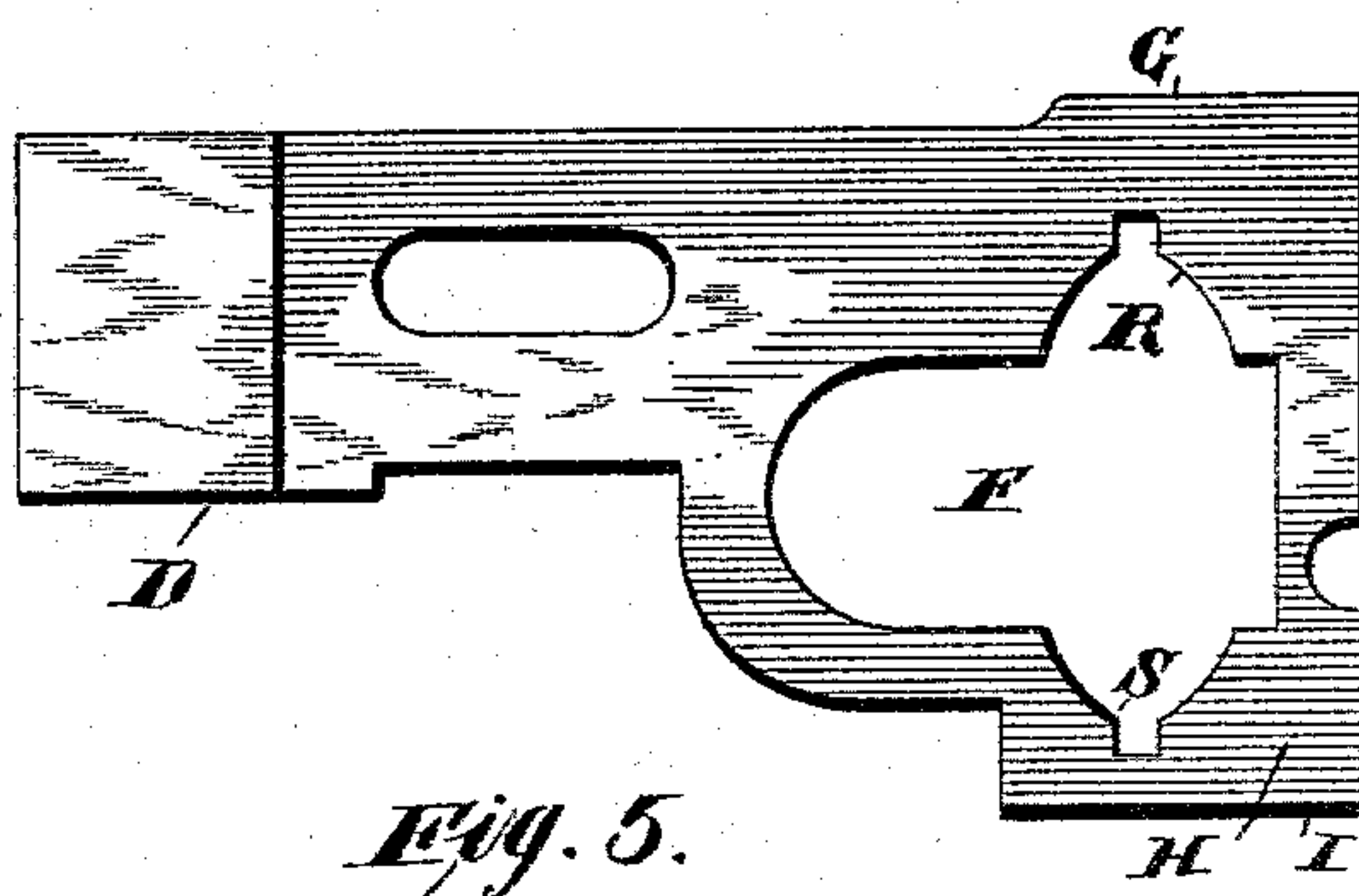
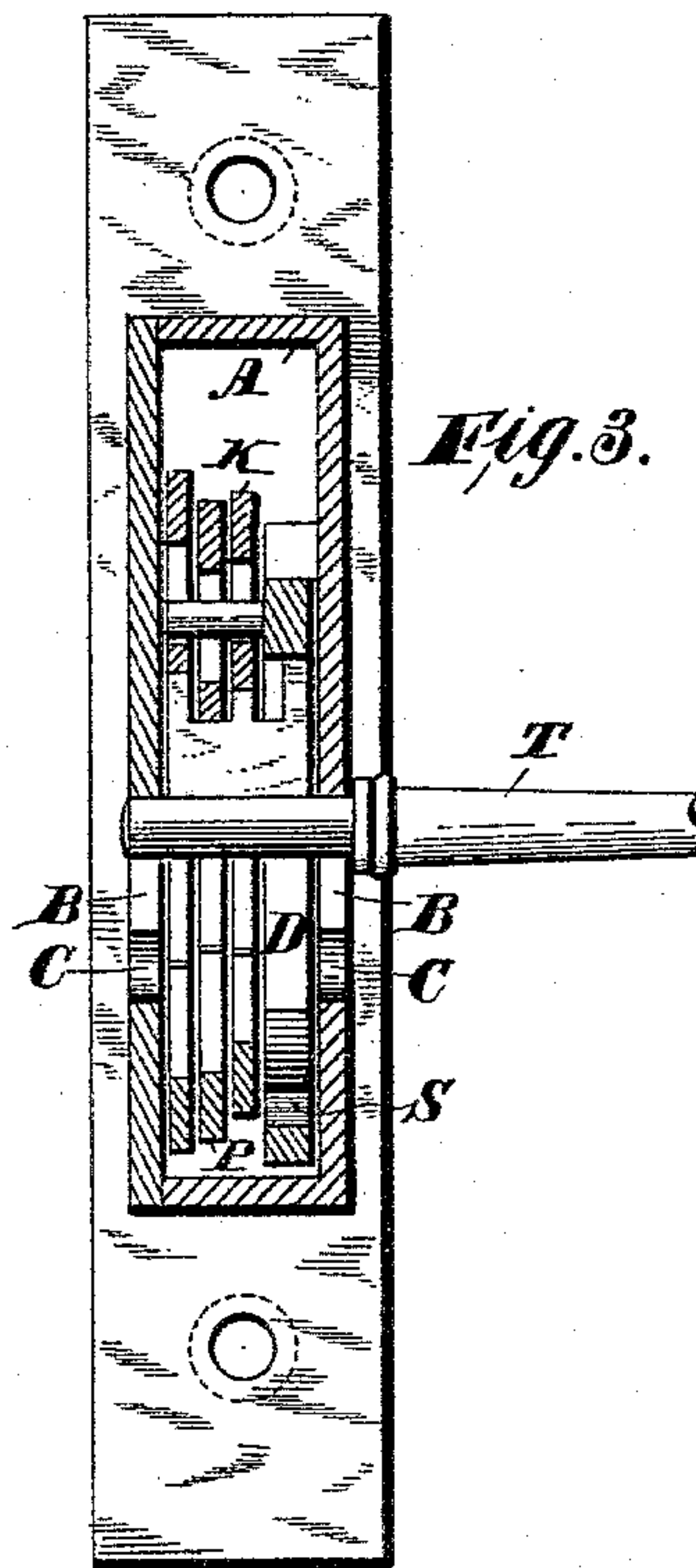
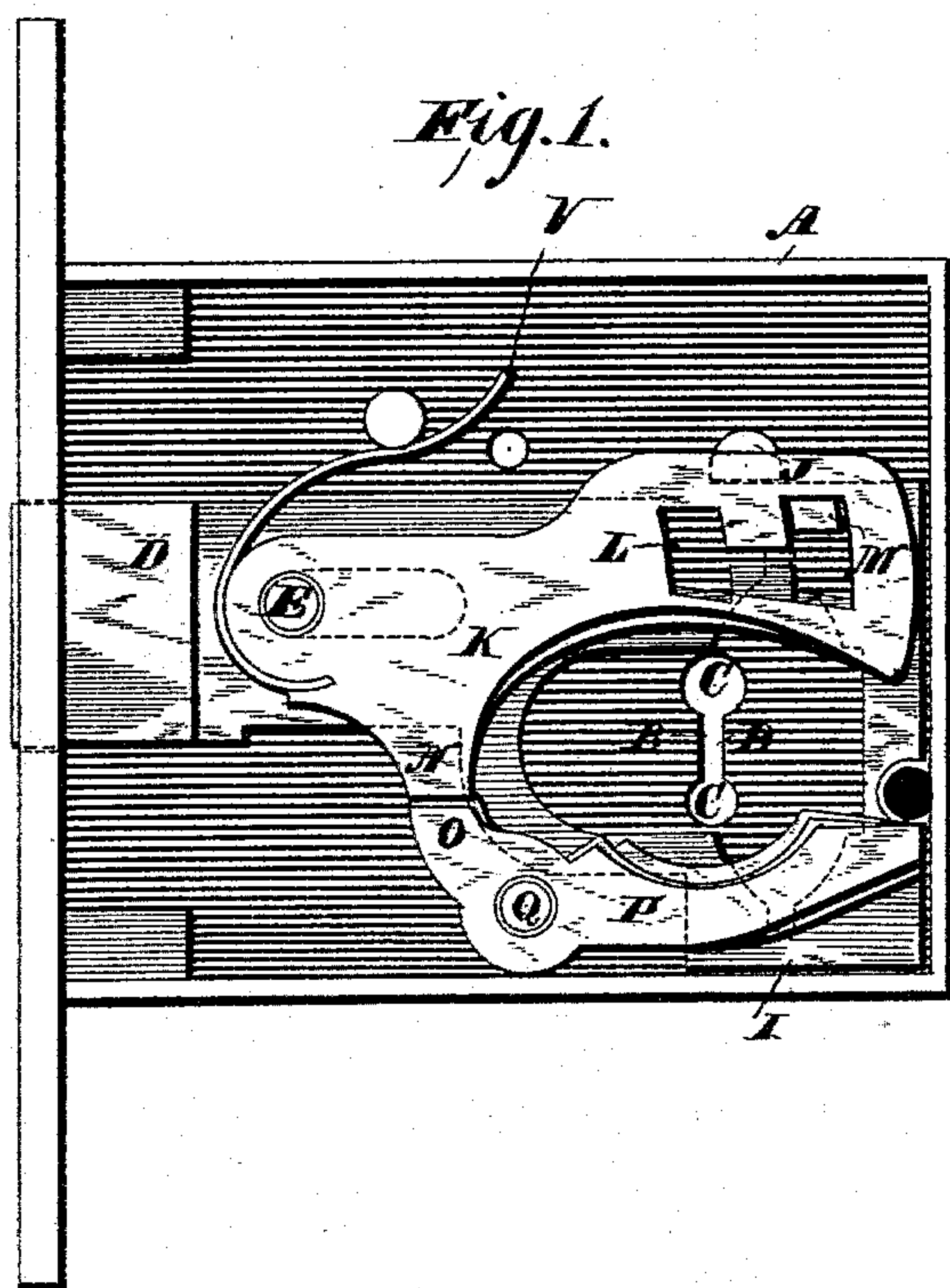
(No Model.)

2 Sheets—Sheet 1.

A. O'KEEFE.  
LOCK.

No. 494,965.

Patented Apr. 4, 1893.



Witnesses  
*Louis S. Julihn.*  
*Erie G. Julihn.*

Inventor  
*Andrew O'Keefe.*  
By *Hopkins & Atkins.*

Attorneys

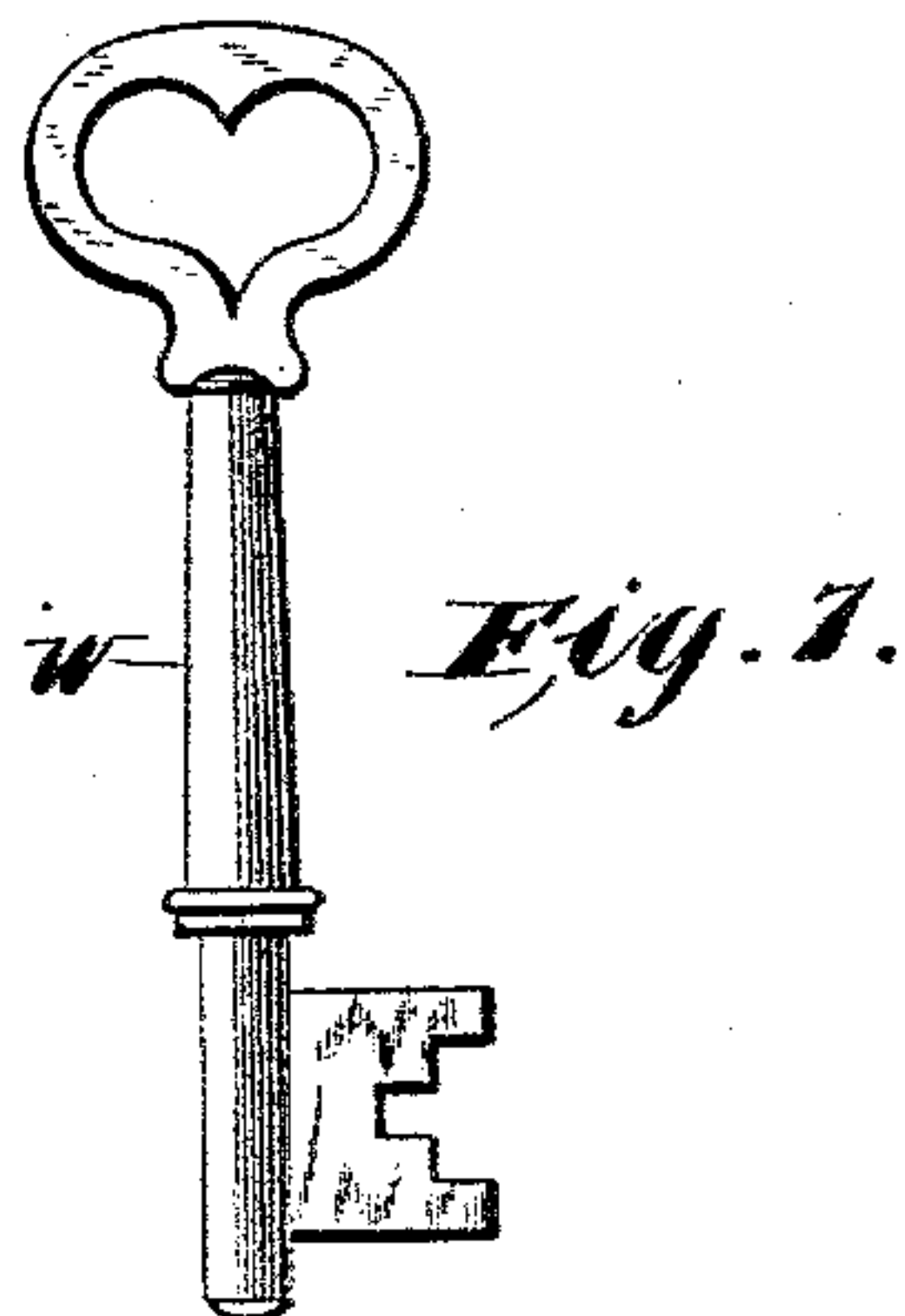
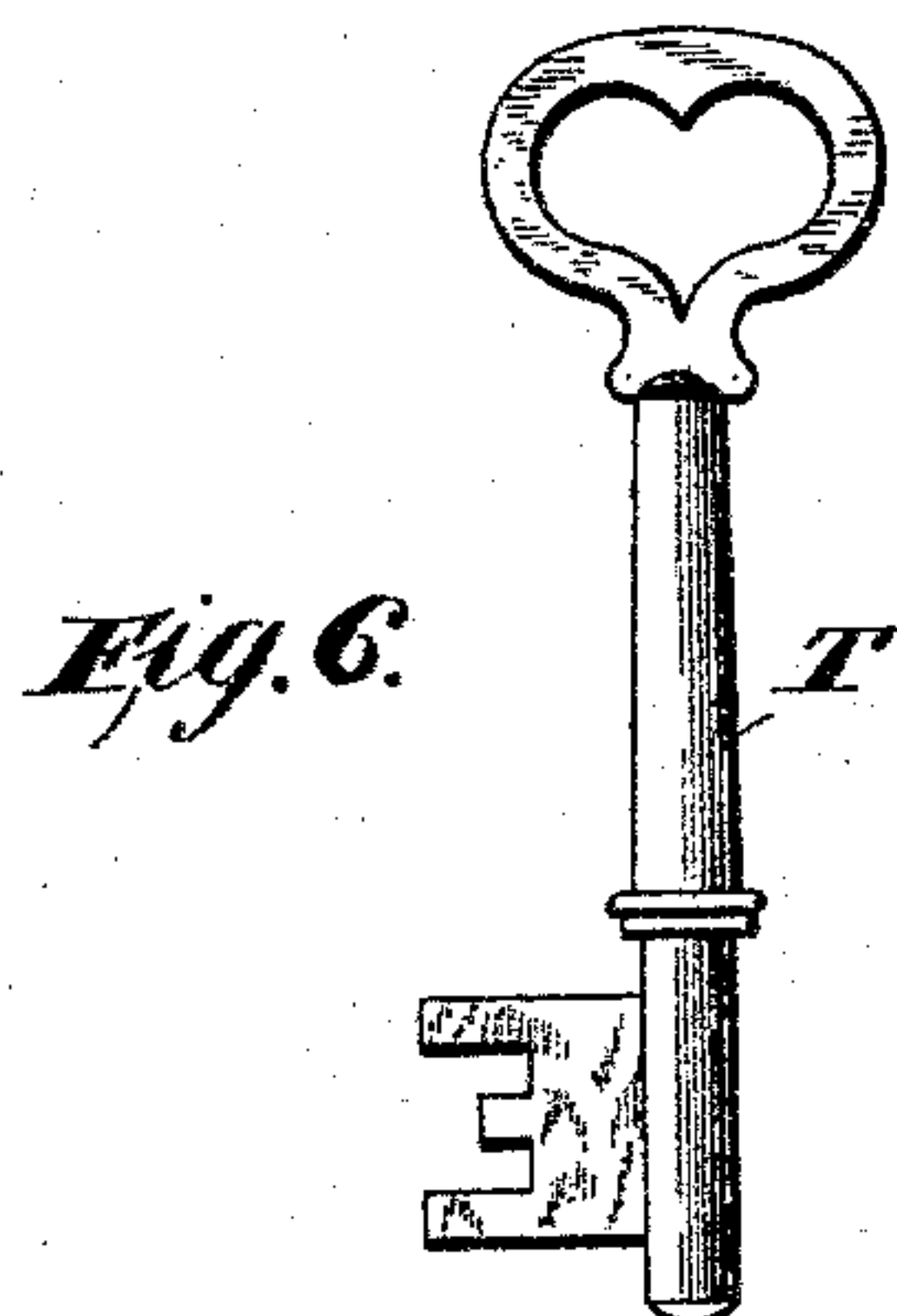
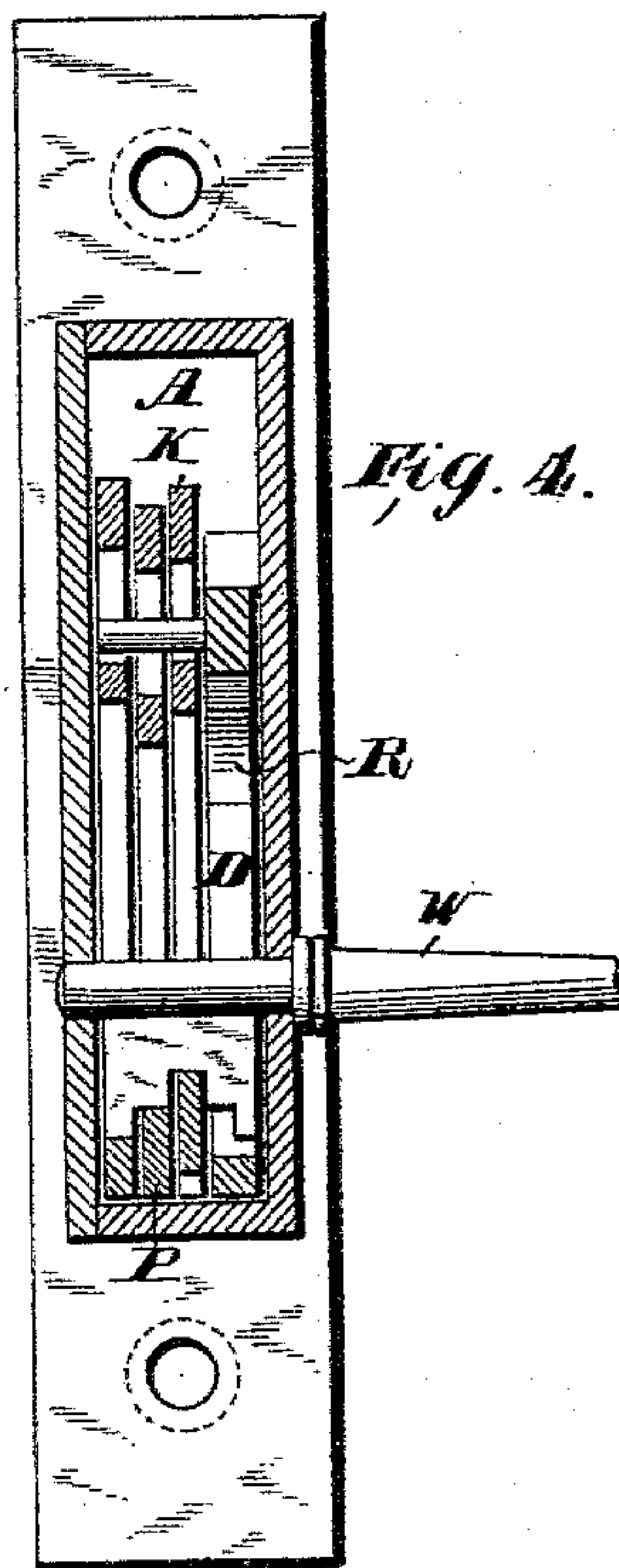
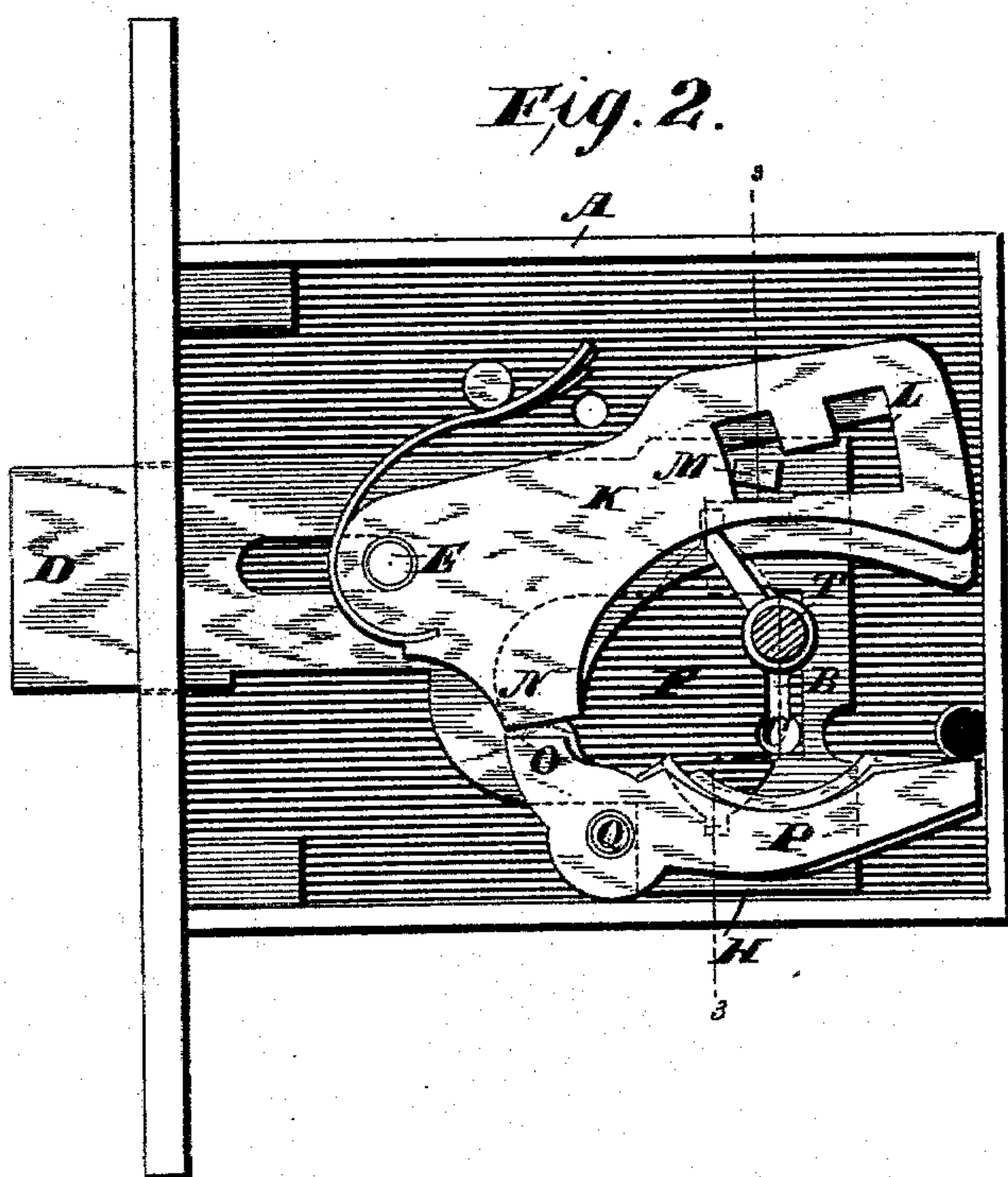
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# UNITED STATES PATENT OFFICE.

ANDREW O'KEEFE, OF NEW YORK, N. Y., ASSIGNOR TO THE YALE & TOWNE  
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## LOCK.

SPECIFICATION forming part of Letters Patent No. 494,965, dated April 4, 1893.

Application filed November 5, 1891. Serial No. 410,982. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW O'KEEFE, of the city, county, and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in that class of locks known as master key locks; that is, locks which are generally used in series, each lock being capable of being opened by a change key which will operate no other of the series, and also by a master key which will unlock every lock in the series. I accomplish my object by a main or primary set of tumblers, which are set by a properly bitted key, so that the continued rotation of the key after setting the tumblers will actuate the bolt; and also by using a secondary set of tumblers, which are set by a properly bitted key, and then in turn set the main tumblers, so that their gatings are opposite the fence on the bolt, and the continued rotation of the key which sets these secondary tumblers also actuates the bolt. The bolt is provided with two actuating points or talons, adjacent to the two sets of tumblers, so that the key which sets the particular set of tumblers which is being operated on will also, by its continued rotation, actuate the bolt.

Master-key locks have heretofore been made with main tumblers, and secondary tumbler actuating the main tumblers, as for example patent of J. Brady, dated September 24, 1872, No. 131,654, but in that case the main tumblers and secondary tumblers are hung upon the same pivot, and are in the same stack or set, the result being that either the lock case must be made thick, or else the tumblers must be made thin, which construction also makes the setting up or adjusting of the tumbler mechanism difficult and expensive. In my construction I pivot the secondary tumblers upon a separate pivot from that of the main tumblers, keeping both sets of tumblers in the same plane, so that I am able to make a lock with the same number and thickness of tumblers as an ordinary lock, and yet to have the individual tumblers of the requisite thickness so that their wearing quality will not be im-

paired, or the bitting of the key be rendered too delicate. I avoid the necessity of two key-holes by making a keyhole with two key bearings. As shown in the drawings, the key is of a construction which has a stem that rotates in a hole in the case of the lock. The two holes or bearings in the keyhole may be made of different diameters, so that it will not be possible to get one key into the other keyhole. It is obvious that instead of this construction it will be possible to use key-plugs attached to the case of the lock which would serve to support and guide flat keys, or other keys without round stems. And the keyholes of these plugs may be made of different depths or different shapes, so as to avoid the trouble incident to inserting the wrong key in the keyhole.

Referring to the accompanying drawings, Figure 1 is a plan view of a lock constructed in accordance with the invention, one face of the lock being removed to disclose the interior mechanism. Fig. 2 is a like view of same, but showing the minor or guest key in section and the bolt in its outward position; Fig. 3 a section of same on the dotted line 3, 3 of Fig. 2; Fig. 4 a like section of same but showing the master-key in position for operating the bolt; Fig. 5 a detached plan view of the bolt; Fig. 6 a like view of the minor or guest key; and Fig. 7 a like view of the master key.

In the drawings, A designates the lock casing which is of usual construction, except that its key-hole B is provided with an eye C at each end, one of said eyes being of greater diameter than the other. The purpose of thus constructing the key-hole is to adapt it to receive either of the two keys whose stems differ in diameter, one of the keys to be inserted into the key-hole in an inverted position or with its bit turned upward.

Within the casing A is provided the sliding-bolt D which is guided by the post E in the usual manner and has at its rear portion the opening F forming on opposite sides thereof the arms G, H, the arm H at its edge I having a bearing against the lower wall of the casing A and the arm G at its upper edge being guided by the stud J. Upon the post E are pivotally hung the tumblers K which are



provided with the usual openings L to receive the racking post M connected with the bolt D. The tumblers K with their openings L are of usual form and construction with the exception of their extensions N which abut against the shorter arms O of the lever tumblers P mounted upon the post Q. The novel features of the lock refer particularly to the lever tumblers P operating in conjunction with the tumblers K to adapt the lock for use in connection with either of two keys, one being the master key and the other the minor or guest key.

In the drawings I illustrate a series of tumblers K and a series of tumblers P, but I desire it to be understood that I do not limit myself to any special number of either the tumblers K or P since, as is well known, this is a matter which may be regulated at will without departing from the spirit of the invention. The inner ends of the tumblers K extend above the keyhole B and the inner end of the tumblers P extend below the keyhole B, and hence the one key-hole constructed as above described may be utilized for the reception of keys which will operate either set of tumblers. The inner ends of the tumblers K pass over the contact notch R cut in the bolt D and the inner ends of the tumblers P pass over the contact notch S cut in said bolt as illustrated more clearly in Figs. 1 and 5, the purpose of these contact notches being to afford a surface against which the bit of the key may act after the tumblers have been set to permit the shooting of the bolt. The tumblers K are adapted for use in connection with the key T, illustrated in Fig. 6, which key may be termed the minor or guest key and is inserted through the larger end of the key-hole B, whereupon, upon being turned in the usual manner it will set the tumblers K and engage the notch R for the purpose of moving the bolt D outward, as illustrated in Figs. 2 and 3. It will be observed that the key T has nothing to do with the tumblers P but that its sole office is to actuate the tumblers K preparatory to moving the bolt D outward. The tumblers P are moved by the key W, which may be called the master-key, and is inserted through the lower end of the key hole B, its bit being turned upward to pass through the slot connecting the eyes of the key hole. Upon the key W being turned, its bit will pass downward against the tumblers P and cause them to have a definite movement upon the pivot Q, whereby their shorter arms O are caused to act upon the tumblers K and elevate them sufficiently to permit the passage of the racking post M through their openings

L, at which time the movement of the key W being continued its bit will engage the notch S and move the bolt D outward. In Fig. 4 I illustrate the position of the key W after it has been inserted into the key-hole and turned downward. The key T will operate the tumblers K but not the tumblers P, and the key W will operate the tumblers P but not the tumblers K, and hence the tumblers may be so arranged that each tenant may have a key T which will operate his own particular lock but no others, while the proprietor of the building could have a single key W which would operate all of the locks of the building.

The essential point of novelty in the construction resides in the tumblers P whose addition to the ordinary lock creates it into a master-key lock. I do not limit the invention to the exact form or number of the auxiliary lever tumblers P since their arrangement, form and number will depend largely upon the will of the manufacturer.

I have termed the tumblers P auxiliary tumblers since they are subsidiary to the main tumblers K of the ordinary lock. The tumblers K will of course be provided with the usual springs V, while the tumblers P when arranged as illustrated in the drawings do not require springs.

What I claim is—

1. In a lock the combination of main tumblers and secondary tumblers pivoted independently of and engaging with the main tumblers, said main tumblers and said secondary tumblers being set to keys of different bittings, so that either will set only its own tumblers, but the secondary tumblers being so made that when set by their own key they will in turn set the main tumblers, so that continued revolution of the key will actuate the bolt, substantially as described.

2. A series or set of locks, each of which is provided with main tumblers and lifters, or secondary tumblers, pivoted independently of and engaging with said main tumblers, the main tumblers of the different locks being set to keys of different bittings, while the secondary tumblers are set to one master key and so made that when set by said master key they will, in every lock, set the main tumblers, so that continued revolution of the master key will actuate the bolt of every lock in the series, substantially as described.

In testimony of all which I have hereunto subscribed my name.

ANDREW O'KEEFE.

Witnesses:

CHARLES C. GILL,  
WM. H. MORRISON.