

W. J. CARROLL.

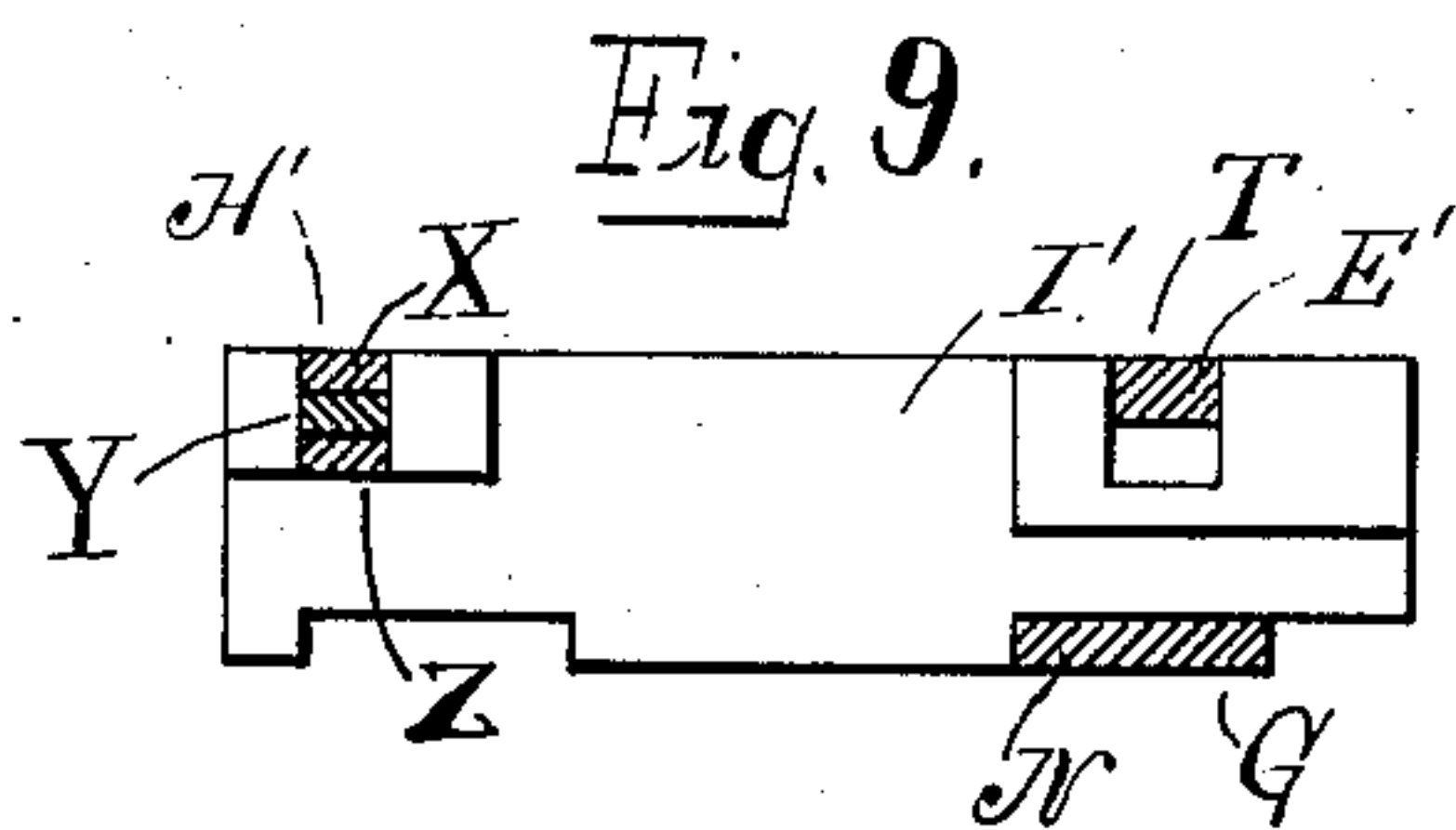
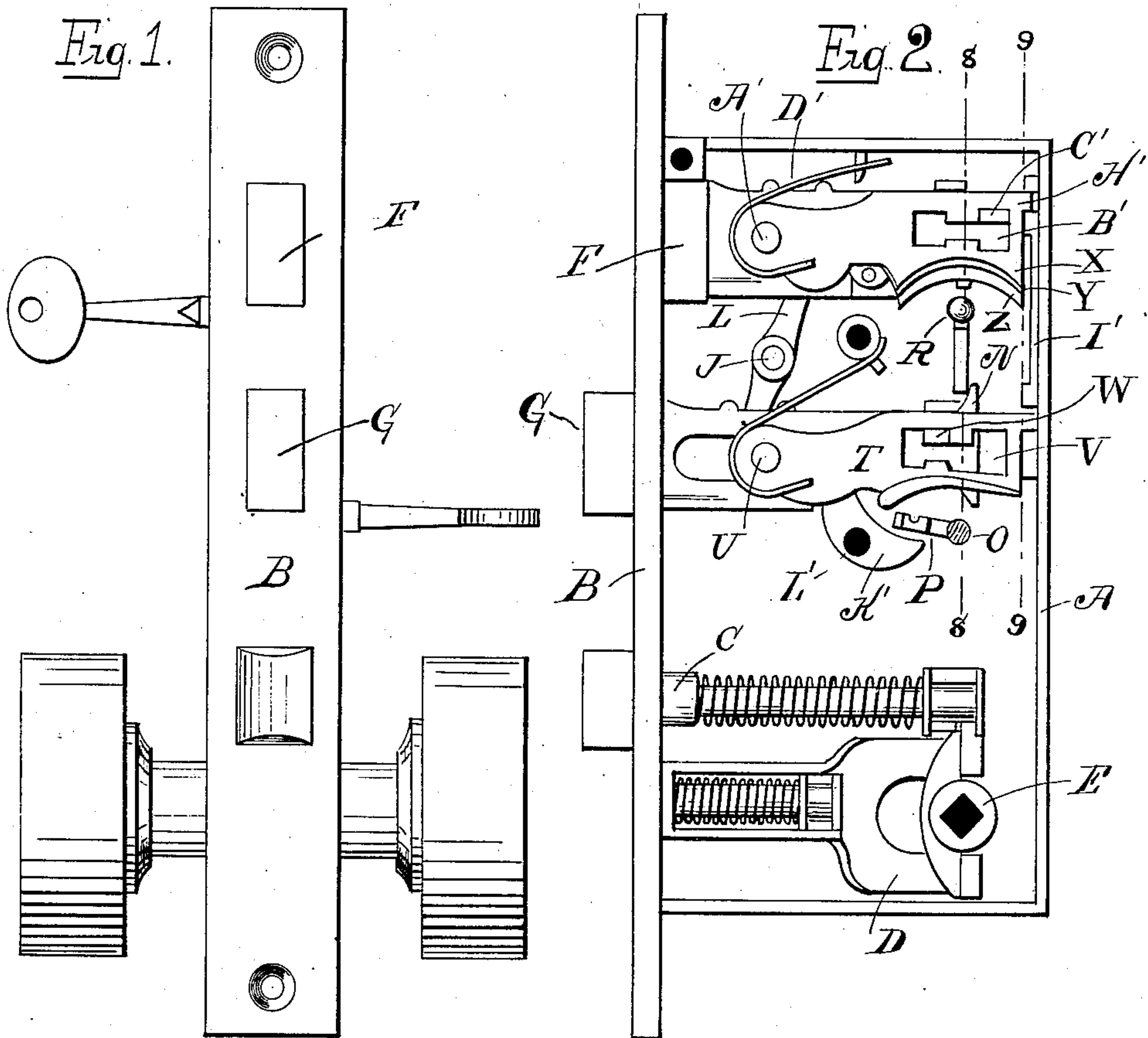
LOCK.

APPLICATION FILED SEPT. 12, 1904.

898,434.

Patented Sept. 15, 1908.

3 SHEETS—SHEET 1.



Witnesses

J. S. Coleman  
M. Olive Williams

Inventor  
William J. Carroll  
by Beach & Fisher

Attorney

W. J. CARROLL.

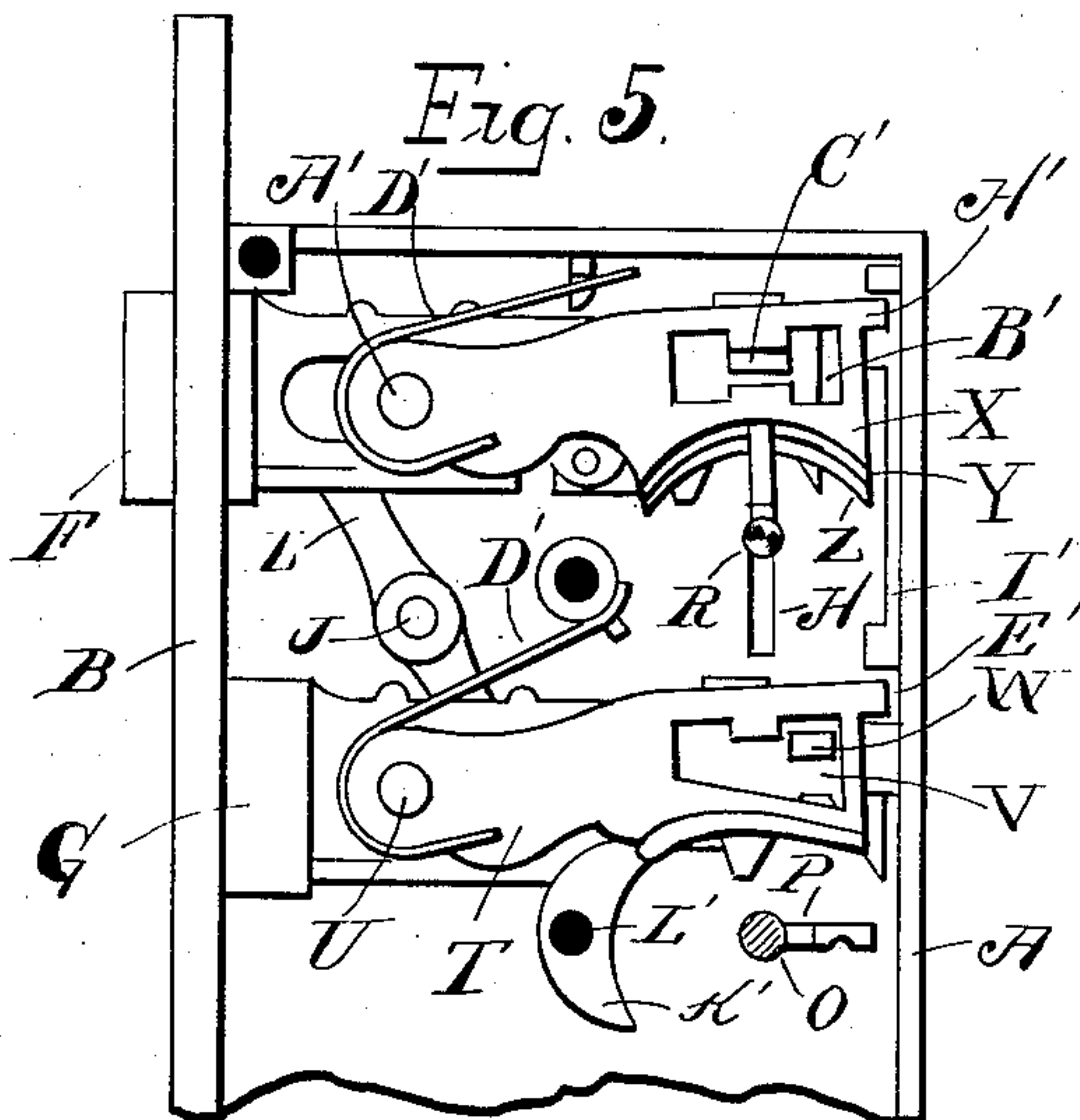
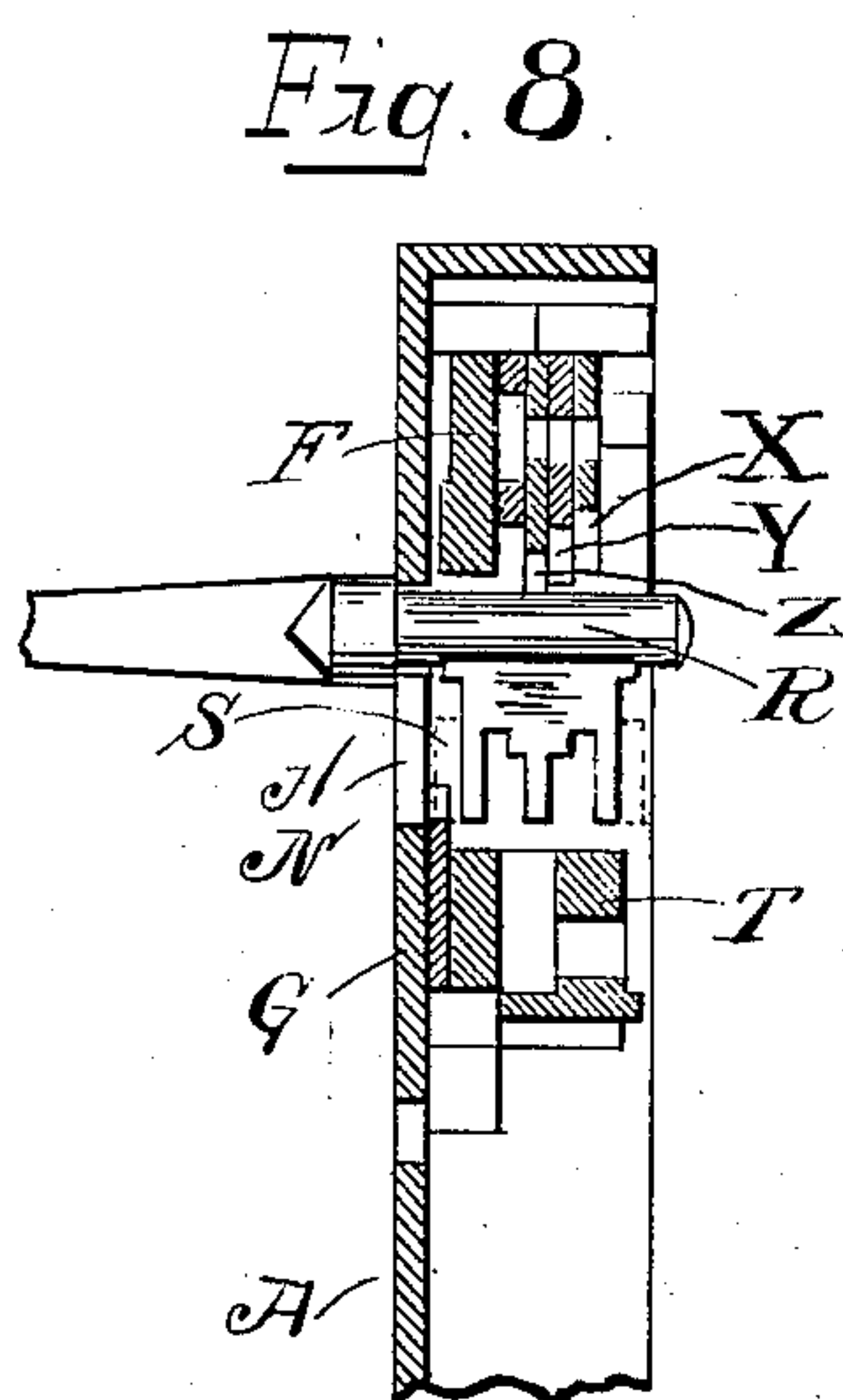
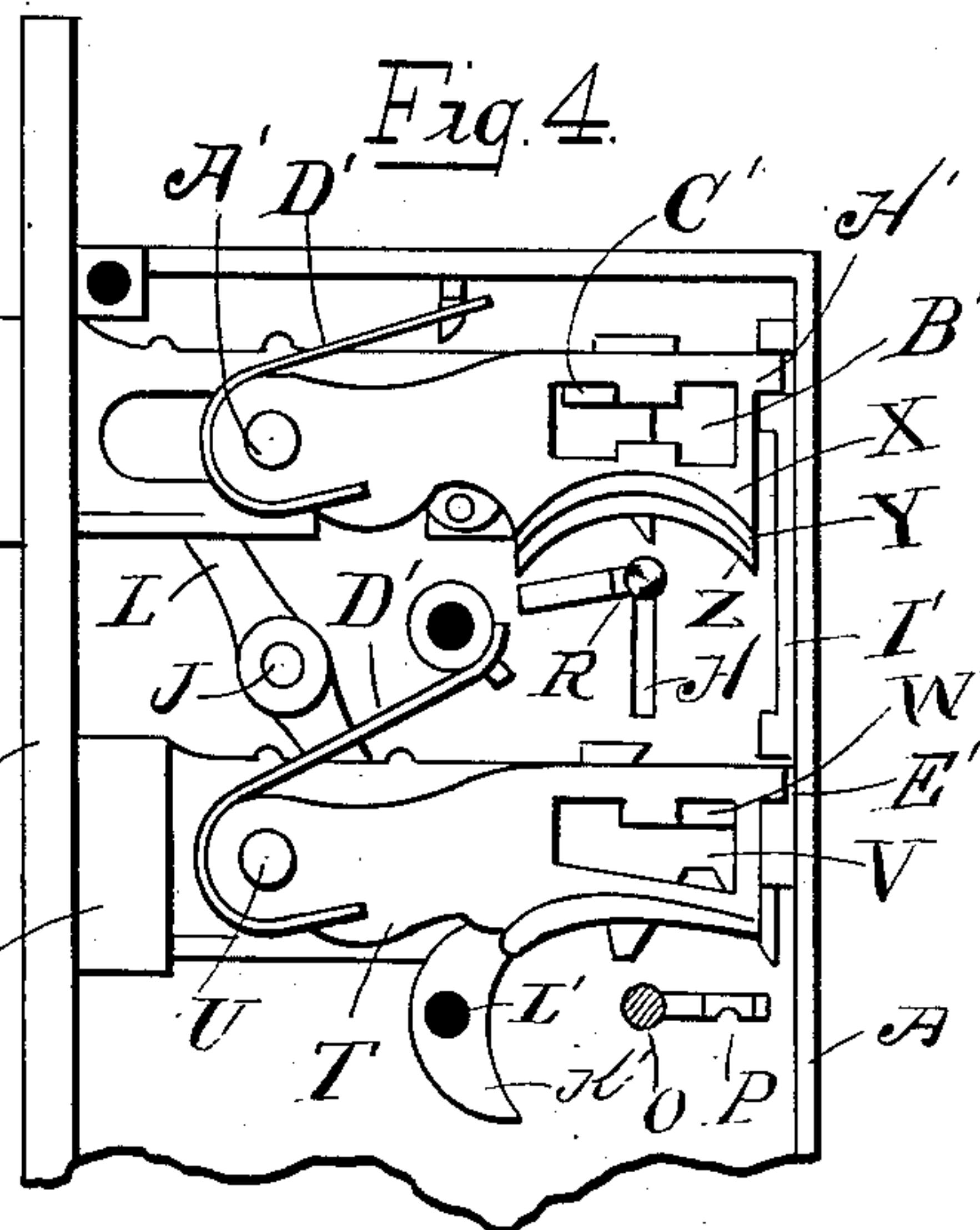
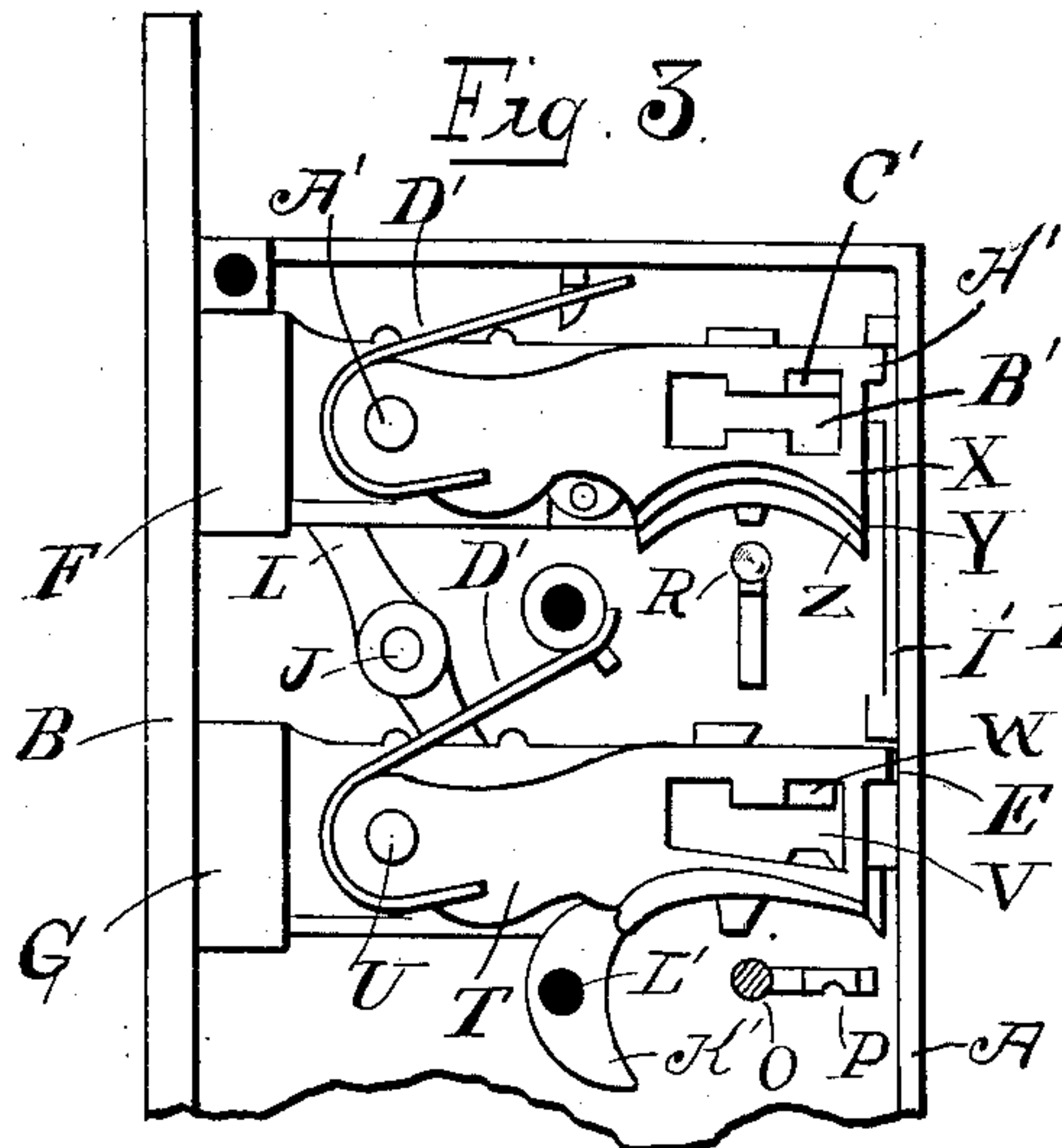
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3 SHEETS—SHEET 2.



Witnesses

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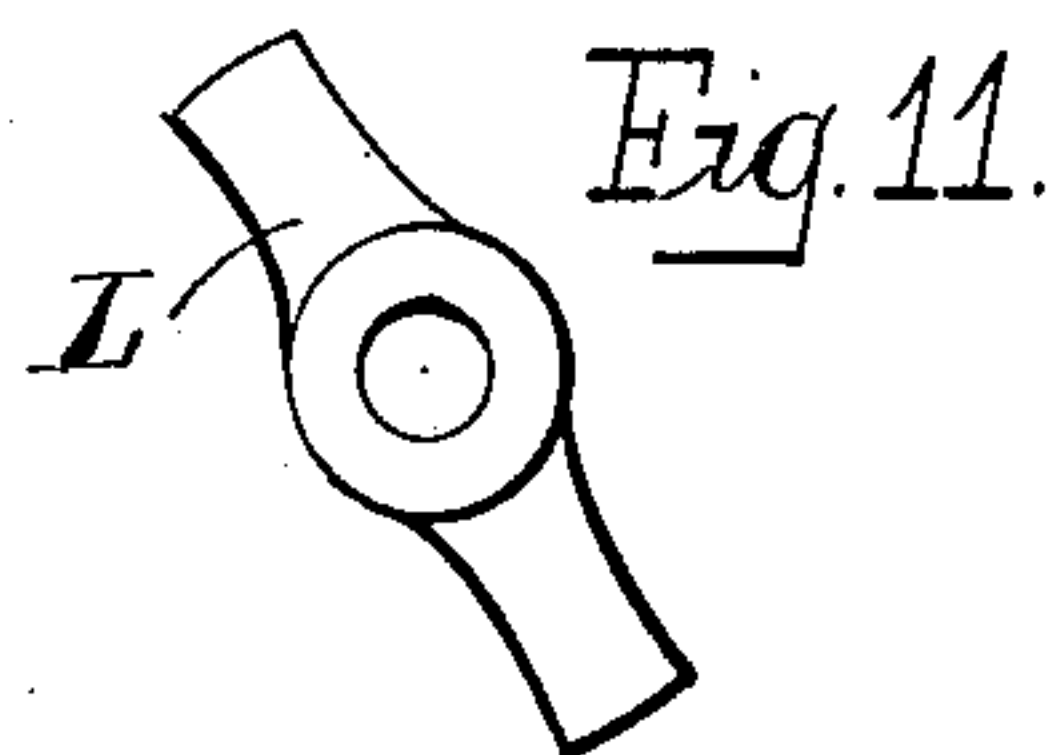
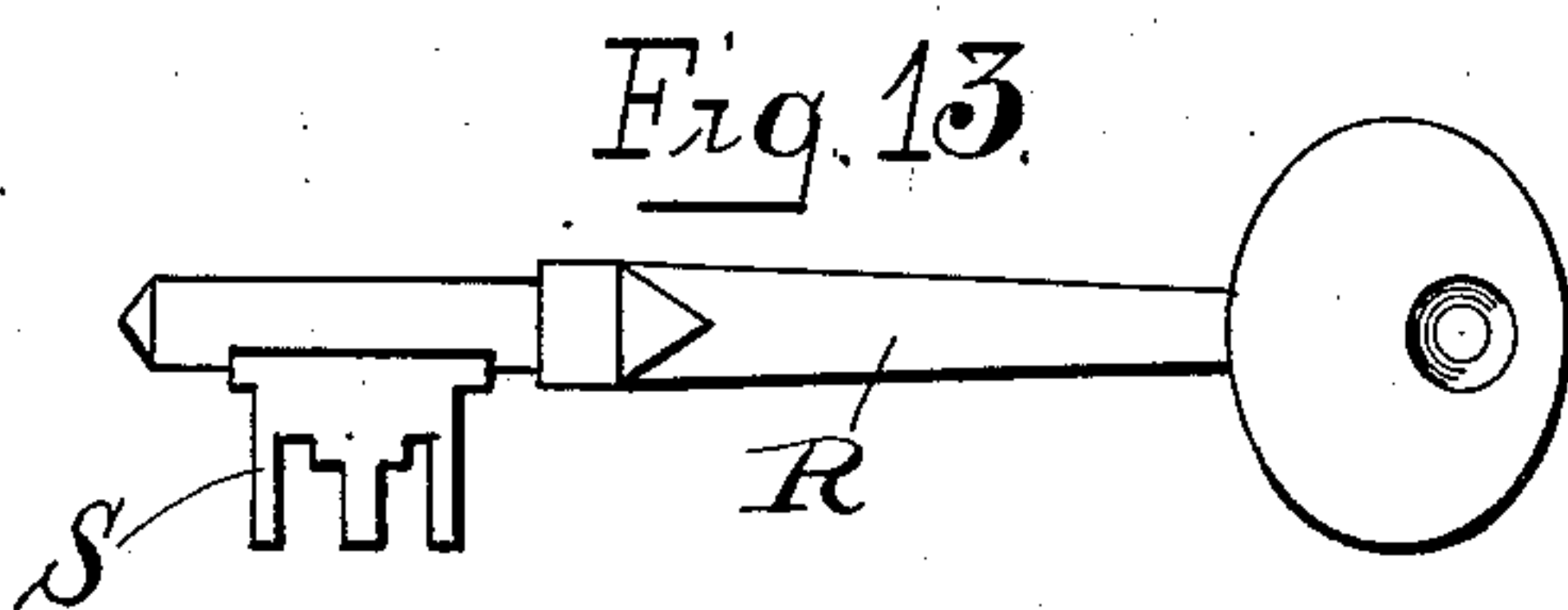
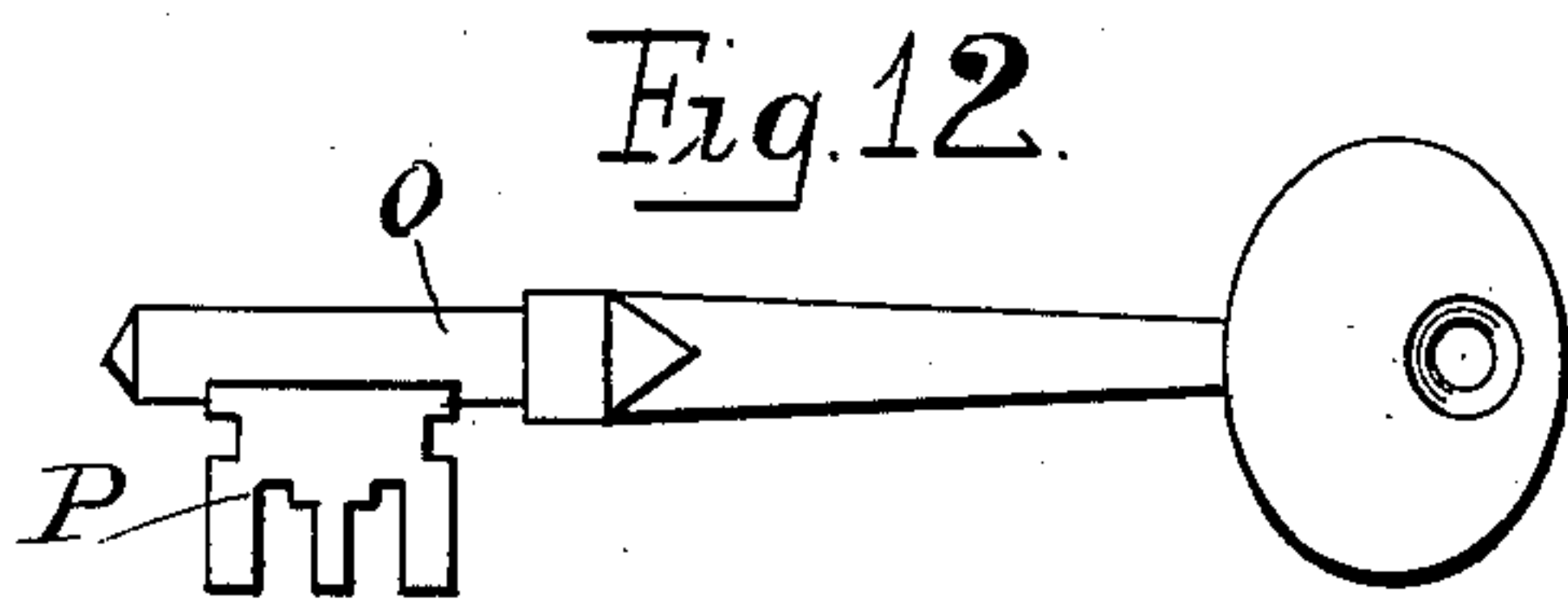
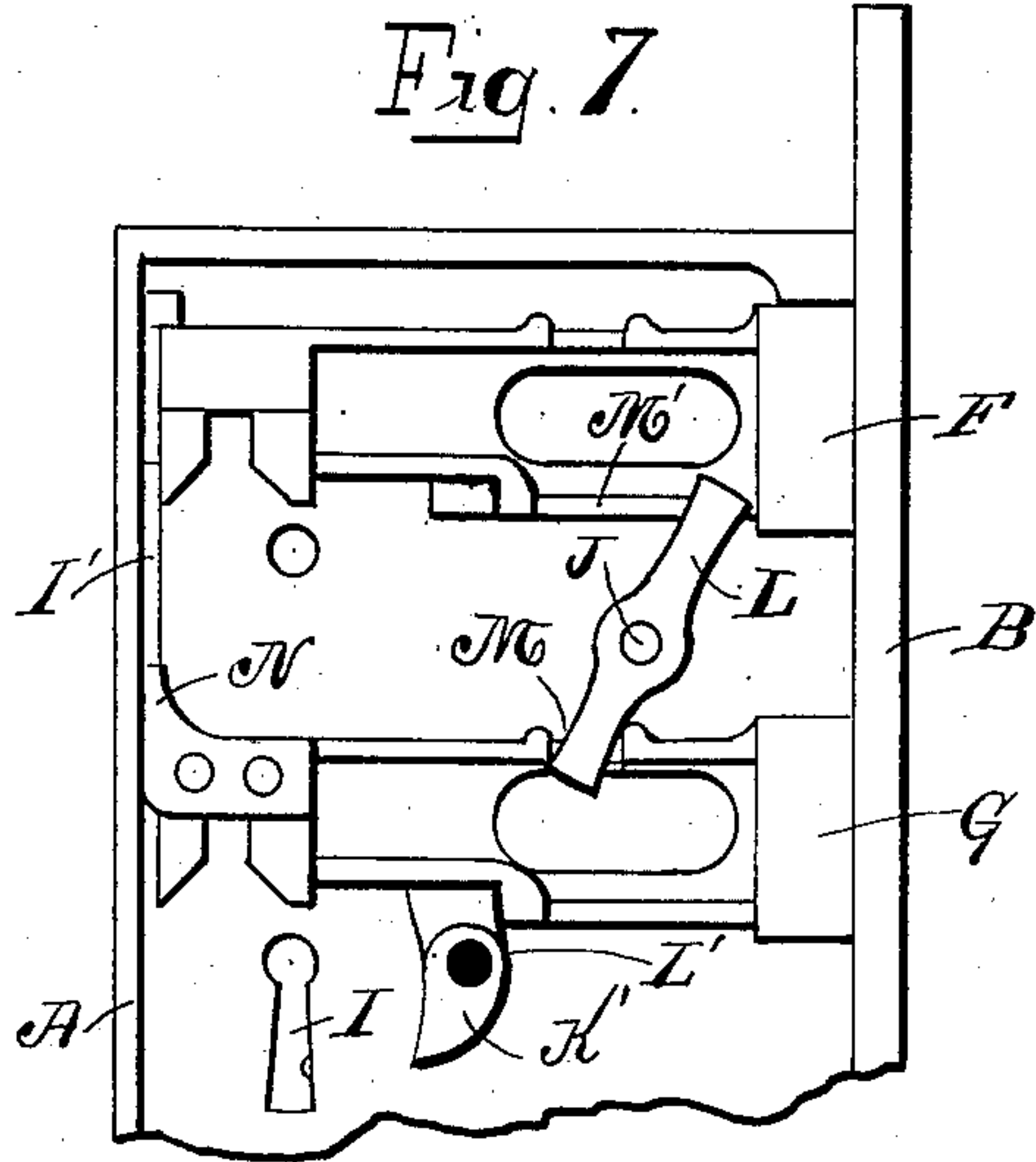
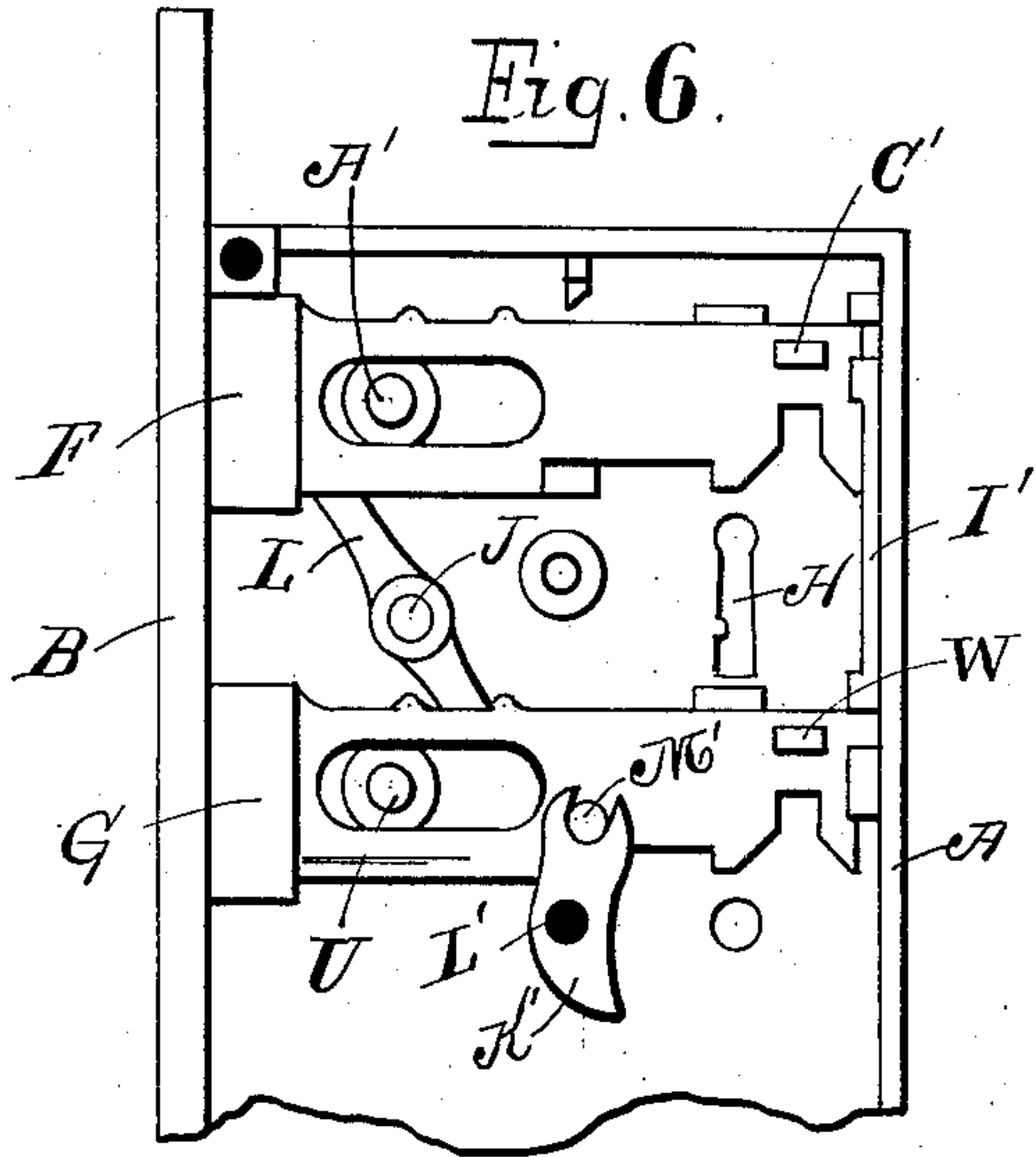
Attorneys.

W. J. CARROLL.  
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3 SHEETS—SHEET 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM J. CARROLL, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY,  
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## LOCK.

No. 898,434.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed September 12, 1904. Serial No. 224,099.

*To all whom it may concern:*

Be it known that I, WILLIAM J. CARROLL, of the city and county of New Haven, State of Connecticut, have invented new and useful  
5 Improvements in Locks, of which the following is a full, clear, and exact description, when taken in connection with the accompanying drawings, which form a part thereof, and in which  
10 Figure 1 represents an end elevation of a lock embodying my invention, Fig. 2, a side elevation of the same, the cap plate having been removed, Figs. 3, 4 and 5 are similar views of the upper portion of the lock, the  
15 bolts being shown in various positions, Fig. 6, a similar view with the tumblers removed, Fig. 7, a reverse view of the parts shown in Fig. 6, Figs. 8 and 9 are transverse vertical sections on lines 8—8 and 9—9, respectively,  
20 of Fig. 2, Fig. 10, an enlarged detail view of the checking dog, Fig. 11, a detail view of the connecting lever, and Figs. 12 and 13, detail views of two of the keys adapted for use in the lock.

25 In all figures, similar letters of reference represent like parts.

This invention relates to locks, and more particularly to that class adapted for use on the doors of hotels, or other public buildings,  
30 where a number of keys for the same lock are in the hands of different individuals. For use in such buildings, locks are often so constructed that a person on the inside of the door, as, for example, the guest, may lock  
35 the door and by leaving his key in the lock prevent the door from being unlocked by any person, such as a chambermaid, porter, or other guest, having a key to the same lock. At the same time, in case of accident it is  
40 often desirable that the door may be unlocked from the outside, even while the guest key is in its place in the lock.

One of the objects of this invention is to produce a novel and efficient lock, which will  
45 have the advantage suggested above, and to this and other ends, the invention consists of the several improvements and combinations of parts set forth and claimed hereinafter.

Referring to the drawings for a more particular description, the part designated by the letter A represents the case of the lock (herein shown in the form of a mortise lock) and B the face plate. C designates the latch bolt, D the yoke, and E the hub of the knob

shank; all of which parts may be of any suitable construction and, therefore, are not described in detail.

The lock is provided with two key bolts F and G, shown situated one above the other. For one of the bolts F, as shown more particularly in Figs. 4 and 5, a key hole H is located in one side (as, the outside) of the lock case, while for the other bolt G, a key hole, as shown at I in Fig. 7, is located on the other side, or inside, of the lock case.

Between the key bolts F and G is pivoted on a post J in the case a connecting lever L, one end of which projects into a slot or recess M (Fig. 7) of the key bolt G (hereinafter called for convenience the inside bolt). The other end of the lever L extends into a groove M' on the under side of the key bolt F (hereinafter called the outside bolt), where it is capable of a limited movement independent of the key bolt F (Fig. 7). This movement of the end of the connecting lever L in respect to the bolt F is so proportioned that when either bolt is in its retracted position, the other bolt may be thrown in either direction (Figs. 2, 3, 4 and 5) without affecting the retracted bolt. But when the out side bolt F is in its protracted position (Fig. 4), by throwing the inside bolt G outward the connecting lever L will retract the outside bolt F, or, on the other hand, when the inside bolt G is in its protracted position (Fig. 2), by throwing the outside bolt F outward, the connecting lever L will retract the inside bolt G (Fig. 4). By this means, when either of the bolts is in its protracted position, and the other bolt is protracted the connecting lever will retract the former, but either bolt may be protracted separately without movement of the other bolt, provided this latter bolt is in its retracted position.

At the rear of the inside bolt G is a laterally projecting stud or flange N, which when the bolt G is in its protracted position (Fig. 2) lies at one side of the key hole H of the outside bolt (Figs. 2 and 8), and acts as a ward to a key inserted in this key hole, so that if a key, as O, (Fig. 12) be inserted in the key hole H and turned therein, its bit or web P, will strike against the lug N, which thus forms a movable ward to prevent the rotation of the key O in the key hole H when the inside bolt is in its protracted position. The retraction of the bolt G moves the lug or



movable ward N away from the key hole (Figs. 3, 4 and 7), so that the key may be rotated in the key hole H.

The key R (shown in Fig. 13) is of a master key pattern, the bit of which is cut away at S, so that it will avoid the stud or movable ward N. The key R can, therefore, be inserted in the key hole H and rotated even when the inside bolt is protracted. Upon the rotation of the key R in the key hole H, the outside key bolt F may be protracted, and this movement will retract the inside key bolt G (Fig. 4). The outside key bolt F may then be retracted without moving the inside bolt G, and the door will be unlocked.

The inside bolt G is shown provided with a tumbler T, pivoted on a post U in the case A, and having an opening V for a stump W on the bolt. The outside bolt F is shown provided with a series of tumblers X, Y and Z, which are pivoted on a common post A' in the case, and have openings B' for the reception of a stump C' on the bolt. Springs D' hold the several tumblers in their normal position, in well known manner. The tumbler T has projecting from its rear end a lug E', and the tumblers X, Y and Z have similar lugs H', which are adapted to engage with a tumbler bar I'. The tumbler bar I' acts to raise the tumblers of one bolt when the tumbler or tumblers of the other bolt are raised by the key (Fig. 5), so both bolts are released from engagement with their respective tumblers synchronously, and are free to be thrown in one direction or the other by the key and connecting lever. A dog K' is pivoted on a post L' in the case A, and has one end adapted to engage a post or lug M' on the inside bolt G (Fig. 6). When the bolt G is protracted, the post M' rotates the dog K' into the position shown in Fig. 2, where its free end projects into the path of the bit of a key in the inside key hole I. In this position (see Fig. 2), the key in the inside key hole cannot be rotated, so that it cannot be withdrawn from the key hole except by retracting the key bolt G. The key which operates through the inside key hole must, therefore, remain in the lock when the inside key bolt G is protracted.

The operation of this lock is as follows. A person, such as a guest, on the inside of the door, may throw the inside bolt G by means of his key inserted in the inside key hole I. The parts are then in the position shown in Fig. 2, and the key is retained in the lock by means of the checking dog K'. When the parts are in this position, any one inserting a key, such as O, (Fig. 12), through the outside key hole H, will find it impossible to turn the key to operate the outside bolt, because the bit will strike against the stud or movable ward N on the inside bolt (Fig. 2). As the inside bolt can be retracted by a key in the outside key hole only by protracting the out-

side bolt F, it is impossible, therefore, to unlock the inside bolt G when the parts are in the position shown in Fig. 2, by means of the key O. When, however, it is desired to unlock the door from the outside, as when a guest is taken ill after having locked himself on the inside of the door (Fig. 2), a master key, such as R (Fig. 13) may be inserted in the outside key hole H, the bit of which avoids the flange or movable ward N on the inside bolt G (see Fig. 8), and this key will protract the outside bolt F. As explained above, the raising of the tumblers X, Y and Z in protracting the outside bolt F raises the tumbler T of the inside bolt by means of the tumbler bar I' (Fig. 5), and the protraction of the outside bolt F by means of the connecting link L retracts the inside bolt G (Fig. 4). To unlock a door, it is then merely necessary to turn the key in the outside key hole in the reverse direction, and the outside bolt F will be retracted without changing the position of the inside bolt (Fig. 3). On the other hand, should any one lock the outside bolt F when a guest is on the inside of the room (Fig. 4), it is only necessary for a guest to insert his key in the inside key hole and protract the inside bolt, for, as already explained, the protraction of the inside bolt will retract the outside bolt by means of the connecting link L when the tumblers of the outside bolt are raised by means of the tumbler bar I' (Fig. 2). When the outside bolt is retracted and the inside bolt protracted, it is only necessary to retract the inside bolt by means of the key on the inside of the lock to unlock the door (Fig. 3).

Having now described my invention (which may vary in its details without departing from the spirit thereof), what I claim and desire to secure by Letters Patent, is:—

1. In a lock, the combination with a case; of a bolt movable in said case; a key hole in said case; a movable ward adapted to be moved into operative position with said key hole; a plurality of keys, each of which is capable of being inserted in said key hole when said ward is in its operative position, the rotation of one of said keys being permitted by said ward when the key is inserted in said key hole, and the rotation of another key being prevented when so inserted; and means for moving said ward to and from its operative position, substantially as described.

2. In a lock, the combination with a case; of a plurality of bolts movable in said case; a key hole in said case corresponding to one of said bolts; a movable ward adapted to be brought into operative position with said key hole upon the movement of the other bolt; and a plurality of keys, each of which is capable of being inserted in said key hole when said ward is in its operative position, the rotation of one of said keys when so in-



serted being permitted by said ward, and the rotation of another key when so inserted being prevented, substantially as described.

3. In a lock, the combination with a case; of a plurality of bolts movable in said case; a key hole in said case corresponding to one of said bolts; a plurality of keys; a movable ward adapted to be brought into operative position with said key hole upon the movement of the other bolt, said ward permitting the rotation of one key when inserted in said key hole, and preventing the rotation of another key when so inserted; and mechanism for retracting one bolt upon the protraction of the other, substantially as described.

4. In a lock, the combination with a case; of a bolt movable in said case; a key hole in said case corresponding to said bolt; a second bolt having a device connected thereto adapted to come into position to act as a ward for said key hole when said bolt is in one position and a plurality of keys, each of which is capable of being inserted in said key hole when said device is acting as said ward, the rotation of one of said keys when so inserted being prevented by said ward, and the rotation of another key when so inserted being permitted, substantially as described.

5. In a lock, the combination with a case; of a plurality of bolts movable in said case; a key for operating one bolt from one side of said case and another bolt from another side of said case; a checking device connected to one bolt to prevent the protraction of another bolt when said checking - device - carrying - bolt is protracted, means for preventing the withdrawal of said key when on the corresponding side of said case, after it has protracted said checking - device - carrying - bolt and while said bolt is protracted and means for retracting said checking - device - carrying bolt when so protracted, substantially as described.

6. In a lock, the combination with a case; of a plurality of bolts movable in said case; a key hole for one of said bolts; a key adapted to be inserted in said key hole to operate said bolt; a device for preventing the operation of said bolt by said key through its key hole brought into operative position when another bolt is in its protracted position; and mechanism for retracting one of said bolts by the protraction of the other, substantially as described.

7. In a lock, the combination with a case; of a plurality of bolts movable in said case; a key hole for one of said bolts; a movable ward adapted to be brought into operative position with said key hole when the other bolt is in its protracted position; and mechanism for retracting one bolt by the protraction of the other, substantially as described.

8. In a lock, the combination with a case; of a plurality of bolts movable in said case;

a device for protracting one of said bolts; means adapted to prevent the operation of said device adapted to be brought into operation upon the protraction of the other bolt; and means for retracting one of said bolts by the protraction of the other, substantially as described.

9. In a lock, the combination with a case; of a plurality of bolts movable in said case; tumblers adapted to engage the respective bolts; and mechanism for operating all of said tumblers in the same direction to release them from engagement with the several bolts synchronously upon the operation of a tumbler of either bolt, substantially as described.

10. In a lock, the combination with a case; of a plurality of bolts movable in said case; tumblers adapted to engage the respective bolts; a tumbler bar having connection with said tumblers to operate them in the same direction synchronously upon the operation of a tumbler of either bolt, substantially as described.

11. In a lock, the combination with a case; of a plurality of bolts movable in said case; tumblers adapted to engage the respective bolts; mechanism for releasing all of said tumblers from engagement with the several bolts synchronously; and means for retracting either bolt upon the protraction of another, substantially as described.

12. In a lock, the combination with a case; of a plurality of bolts movable in said case; means for operating one bolt from one side of said case and the other bolt from a different side of said case; a connection between said bolts for retracting either bolt upon the protraction of the other bolt, said latter bolt being retractable independently of the other bolt by its own operating means, substantially as described.

13. In a lock, the combination with a case; of a plurality of bolts movable in said case, each of said bolts having separate operating mechanism; a connection between said bolts for retracting either bolt upon the protraction of the other bolt, said latter bolt being retractable independently of the other bolt by its own operating mechanism, substantially as described.

14. In a lock, the combination with a case; of a plurality of bolts movable in said case; tumblers adapted to engage the respective bolts; a device for protracting one of said bolts; mechanism adapted to prevent the operation of said device adapted to be brought into operation upon the protraction of another bolt; and means for releasing all of said tumblers from engagement with the several bolts synchronously upon the operation of a tumbler of either bolt, substantially as described.

15. In a lock, the combination with a case; of a plurality of bolts movable in said



case; tumblers adapted to engage the respective bolts; a key hole in said case corresponding to one bolt; a movable ward; mechanism for bringing said ward into operative relation with said key hole upon the movement of another bolt; and means for releasing all of the tumblers from engagement with the several bolts synchronously, substantially as described.

16. In a lock, the combination with a case; of a plurality of bolts movable in said case; tumblers adapted to engage the respective bolts; a key hole in said case corresponding to one bolt; a movable ward; mechanism for bringing said ward into operation with said key hole upon the movement of another bolt; a tumbler bar having connection with said tumblers to operate them synchronously; and means for retracting one bolt upon the protraction of the other, substantially as described.

17. In a lock, the combination with a case; of a bolt movable in said case; a key hole in said case; a key for insertion in said hole adapted to operate said bolt; and a dog pivoted in said case adapted to be rotated by said bolt on its protraction into the path of said key to prevent the further rotation of said key, substantially as described.

18. In a lock mechanism, the combination of a bolt operable by a key inserted through the outer side of the lock and also operable by a key inserted from the inner side of the lock, means for preventing the withdrawal of a key inserted at the inner side of the lock after said bolt is extended thereby and while the bolt is extended, means for permitting the retraction of the bolt by another key inserted from the outer side of the lock at such time.

19. In a lock mechanism, the combination with a case; of a bolt movable in said case, operable by a key inserted in one side of said case; a device for the prevention of the operation of such key, operable by a key from the other side of said case; means for preventing the withdrawal of the key after it has operated said device and while said device is in its operative position; and means for permitting the withdrawal of said device from the other side of said case at such time, substantially as described.

20. In a lock mechanism, the combination with a case; of a bolt operable by a key inserted from one side of said case; another bolt operable by a key inserted from the other side of said case; means for preventing the withdrawal of a key inserted at one side of said case after its corresponding bolt is protracted thereby and while so protracted; and mechanism for retracting said bolt upon the protraction of the other bolt, substantially as described.

21. In a lock in combination, a lock case, two lock bolts therein, a keyhole in each side

of said lock case, said keyholes being out of line, and means by which each of said bolts may be operated from both sides of the door.

22. In a lock, the combination with a casing; of a bolt movable in said casing; a key hole on each side of said casing; differently bitted keys adapted to operate said bolt; and a device carried by said bolt to prevent its retraction through one key-hole by one of said keys, and permitting its retraction by another of said keys in said key-hole, substantially as described.

23. In a lock, the combination with a casing; of a bolt movable in said casing; a key-hole in each side of said casing; keys adapted to operate said bolt through either key-hole; and mechanism for preventing the retraction of said bolt through the key-hole on one side by a certain key or keys when the bolt is in its protracted position, substantially as described.

24. In a lock, the combination with a casing; of a bolt operable from either side of said casing; differently bitted keys for operating said bolt from one side of said casing; and mechanism for preventing the operation of said bolt by one of said keys operated from the other side of said casing, substantially as described.

25. In a lock, the combination with a casing; of a bolt movable in said casing; a key hole in each side of said casing; and a plurality of keys capable of insertion in said key holes, one of said keys being adapted to retract said bolt from either side of said casing and another being adapted to retract said bolt from one side only, substantially as described.

26. In a lock, the combination with a casing; of a plurality of bolts movable in said casing; mechanism for retracting one bolt upon the protraction of the other; a plurality of keys adapted to protract either of said bolts; and means for preventing the protraction of one bolt by one of said keys when the other bolt is in its protracted position, said means permitting the protraction of said bolt by another key, substantially as described.

27. In a lock, the combination with a casing; of a plurality of bolts movable therein; a key-hole in each side of said casing; and means whereby all of said bolts may be operated from either key-hole, substantially as described.

28. In a lock, the combination with a casing; of a bolt movable therein; a key-hole in said casing; a key for insertion in said key-hole adapted to operate said bolt; and means brought into operation by said bolt for preventing the withdrawal of the key when so inserted in said key-hole after said bolt is protracted thereby, and while it is so protracted, but permitting said key to retract said bolt, substantially as described.

29. In a lock, the combination with a cas-



ing; of a plurality of bolts movable therein; a key-hole in each side of said casing; means by which each of said bolts may be operated from either key-hole; and a device for preventing the withdrawal of the key when inserted in one key-hole after its bolt is protracted thereby, and while it is so protracted, substantially as described.

30. In a lock, the combination with a casing; of a plurality of bolts movable therein; a key-hole in each side of said casing; means by which each of said bolts may be operated from either key-hole; and a device preventing the operation of a key in one key-hole brought into operation when one bolt is in one of its positions, substantially as described.

31. In a lock, the combination with two

bolts and tumbler mechanism therefor; of two keys insertible from the outer side of said lock for releasing said tumbler mechanism and operating said bolt; a third key insertible from the inner side of the lock; mechanism operable thereby for simultaneously releasing both sets of tumblers; and means of connection between said bolts whereby the protraction of each bolt causes the retraction of the other bolt, substantially as described.

In witness whereof I have hereunto set my hand on the 30th day of August, 1904.

WILLIAM J. CARROLL.

Witnesses:

ELIZABETH R. CURRAN,  
KATHERYN WALPOL.