

G. C. STANLEY.

LOCK.

(Application filed Mar. 16, 1898.)

(No Model.)

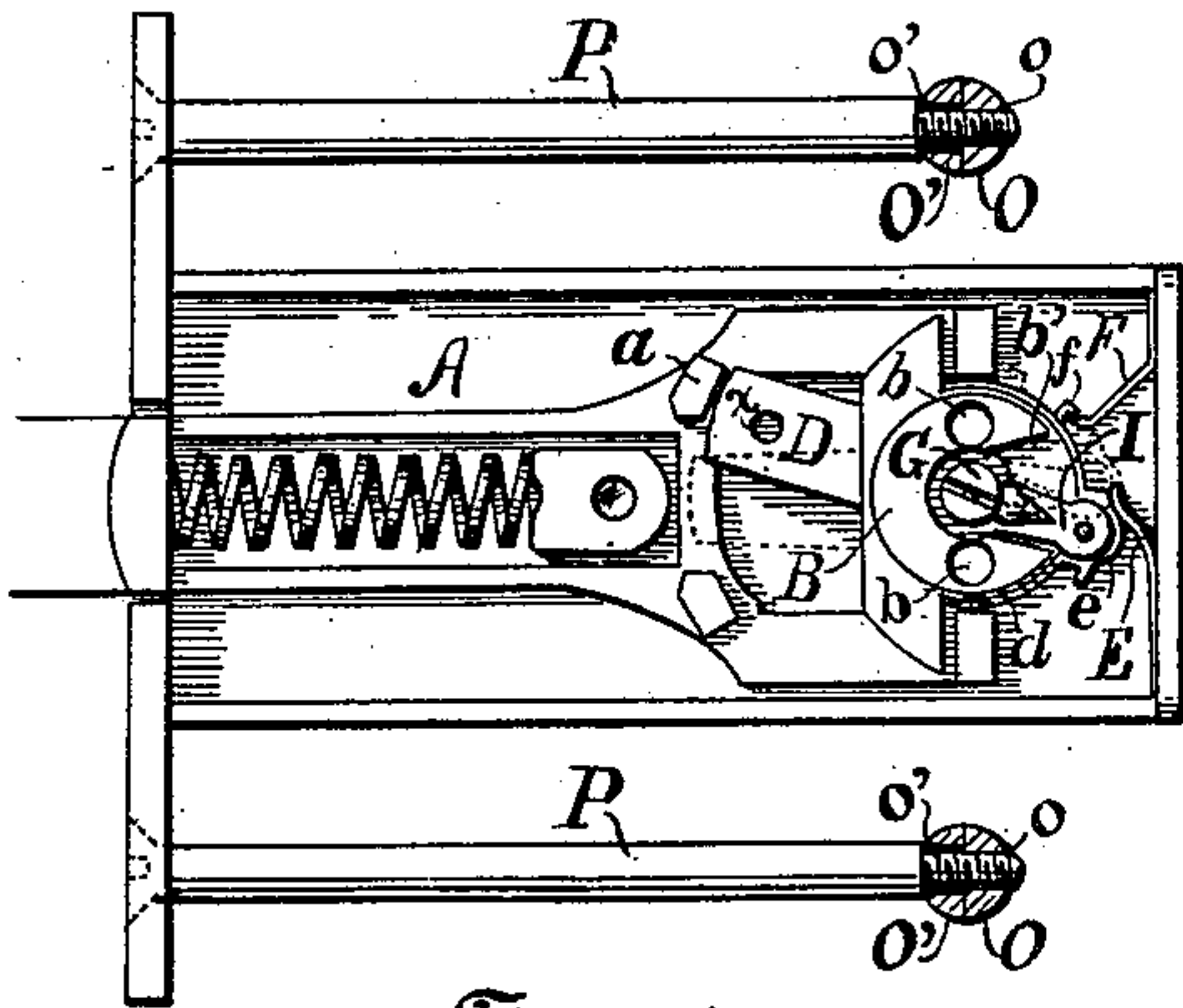


Fig. 1.

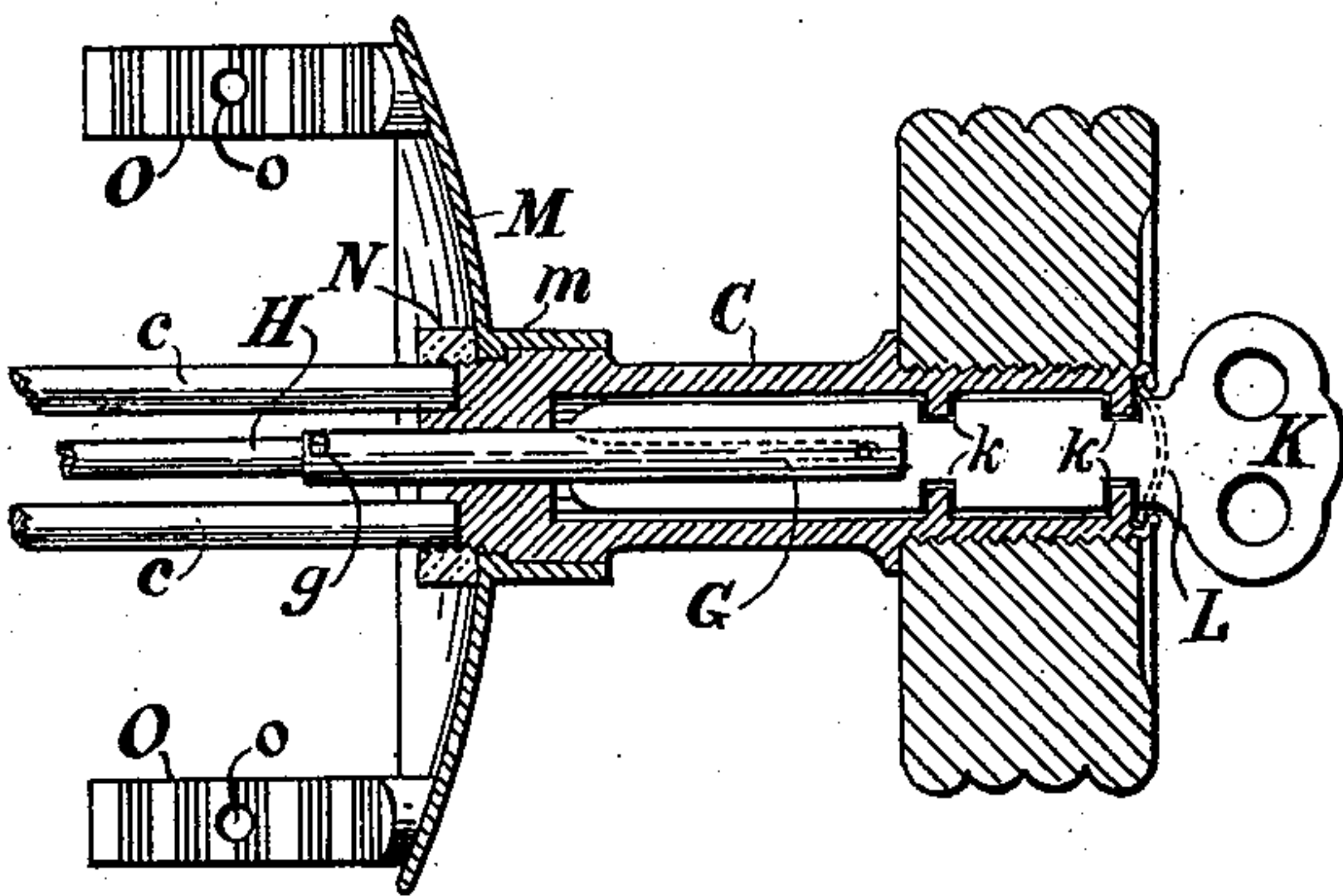


Fig. 2.

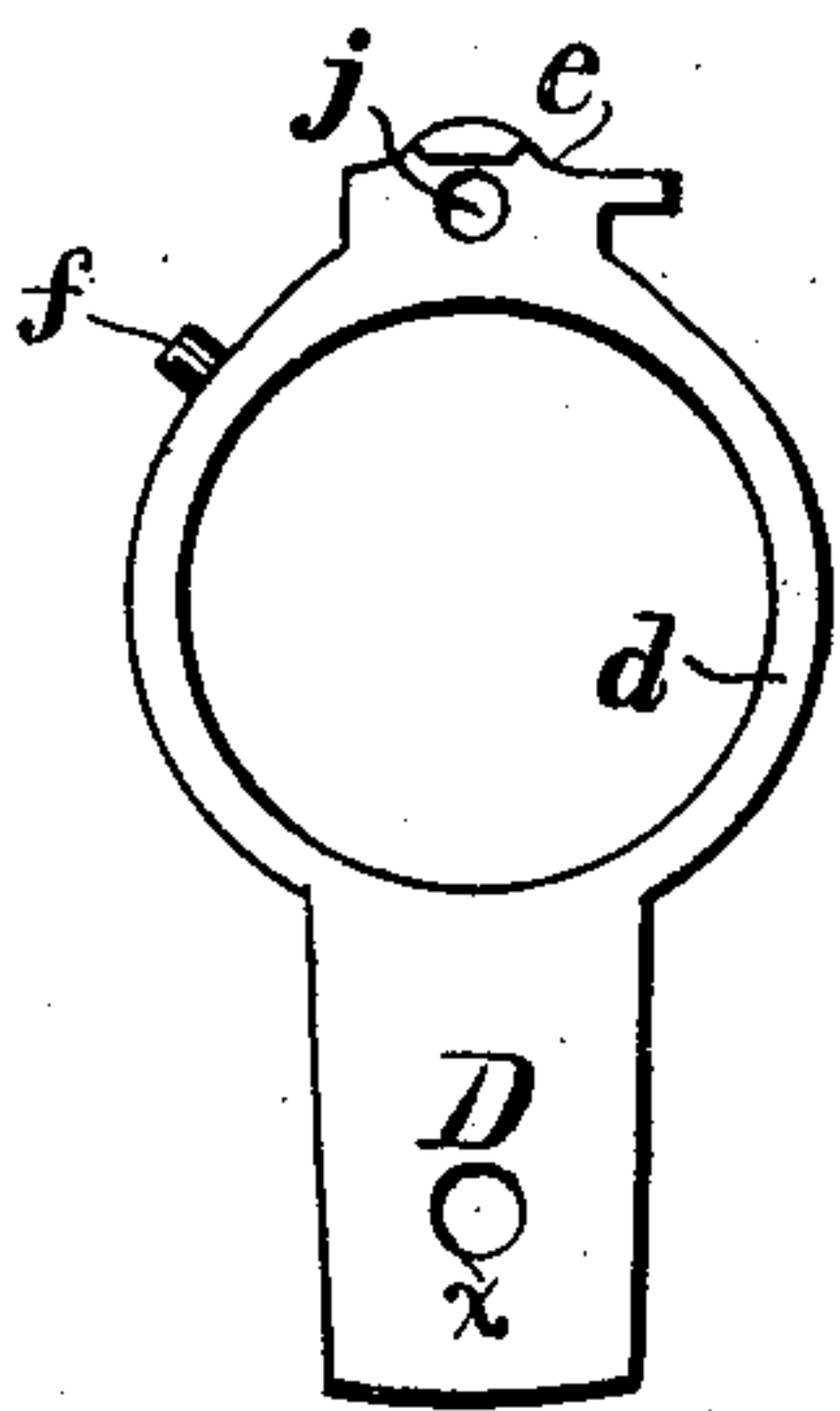


Fig. 3.



Fig. 4.

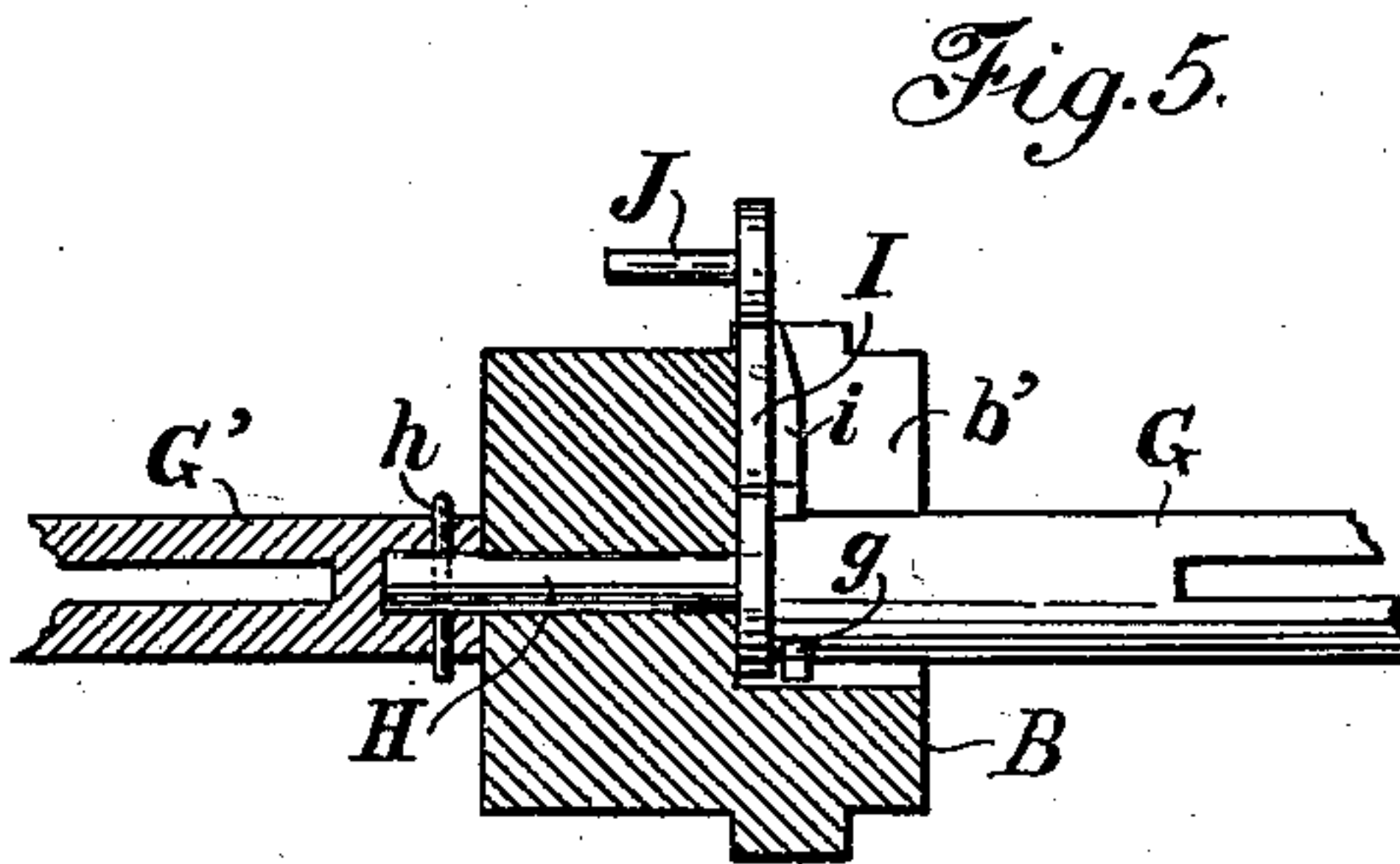


Fig. 5.

Fig. 7.

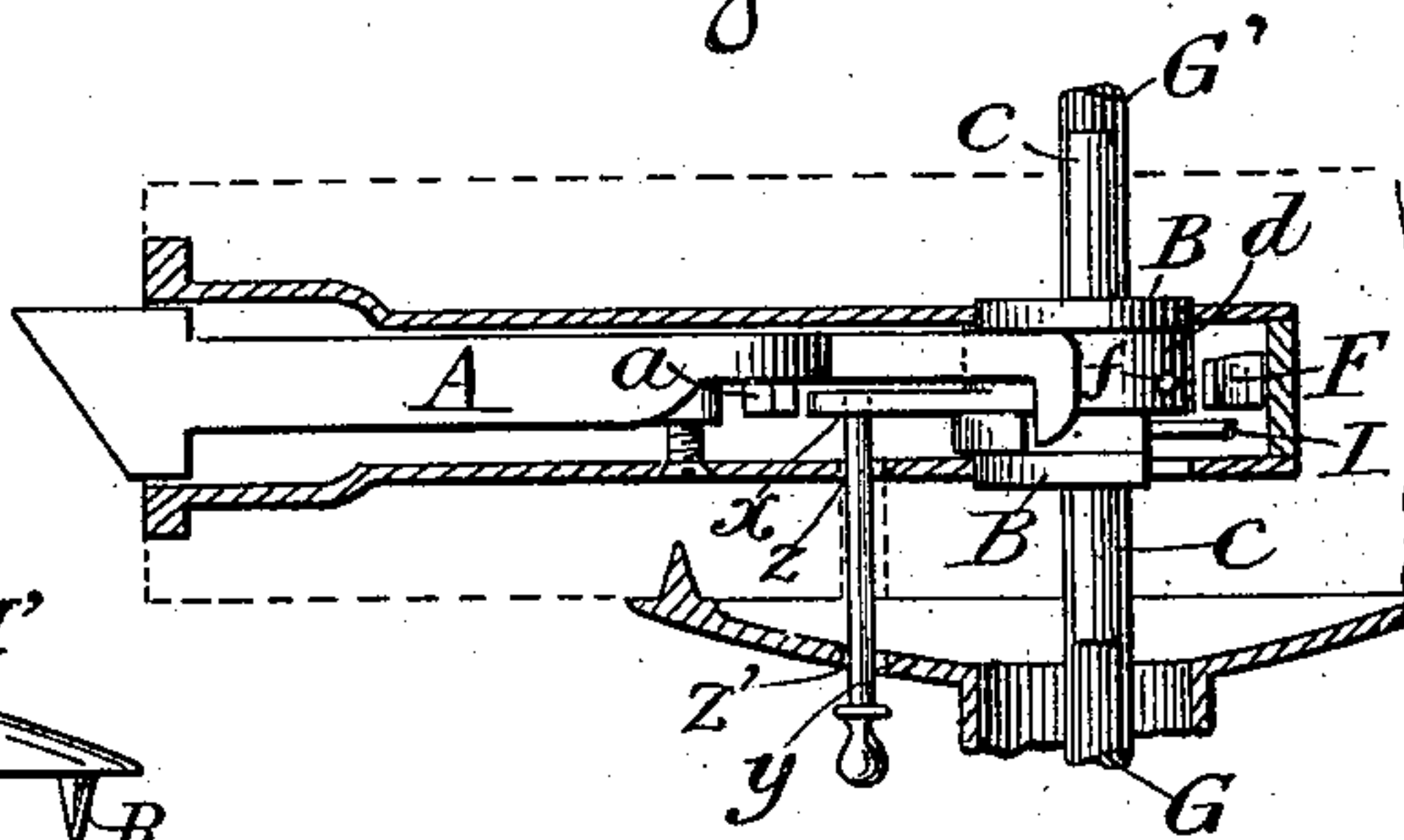
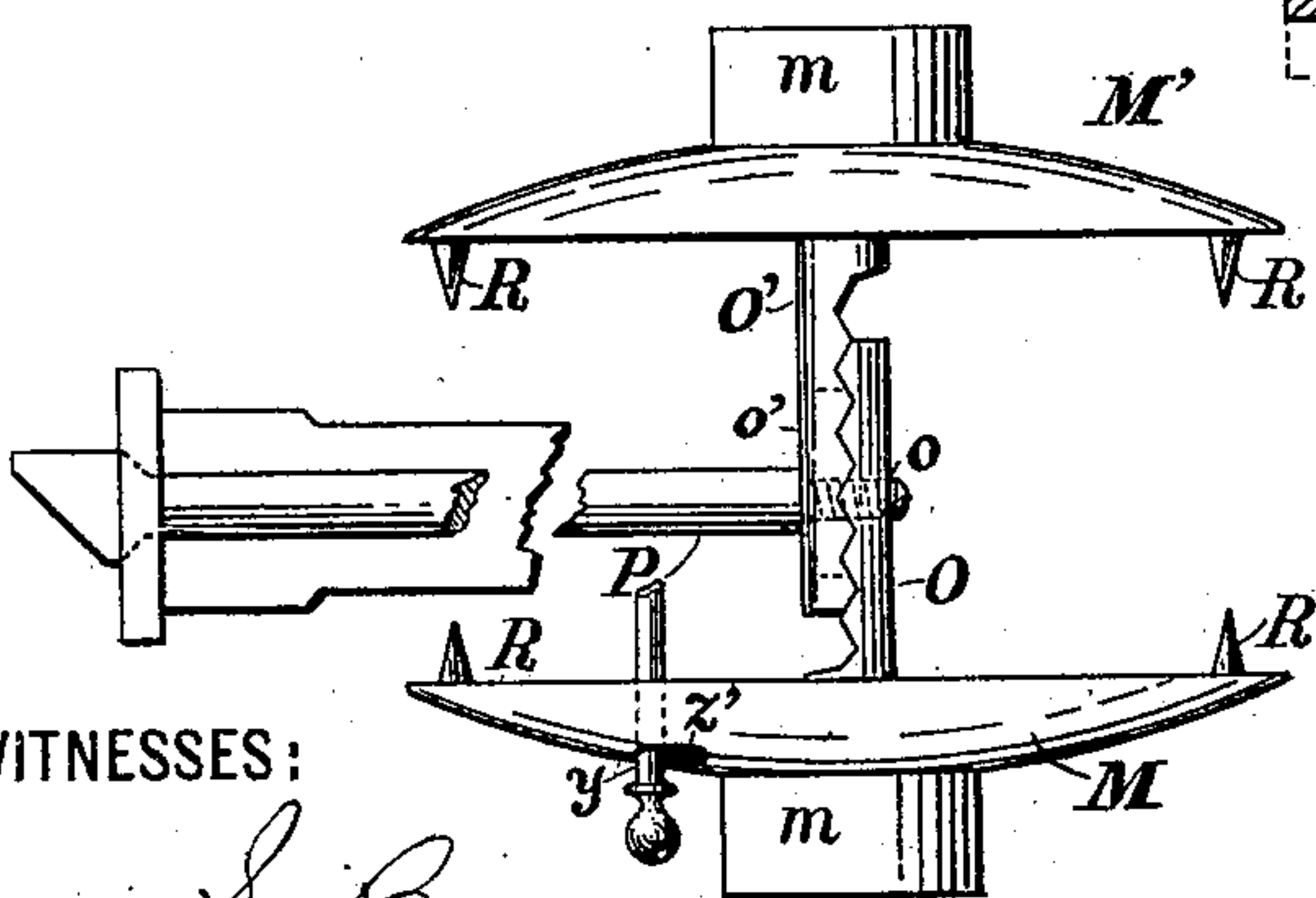


Fig. 6.



WITNESSES:

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GEORGE CHAMBERLIN STANLEY, OF ITHACA, NEW YORK, ASSIGNOR OF ONE-HALF TO DOW S. BARNES, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 618,486, dated January 31, 1899.

Application filed March 16, 1898. Serial No. 674,012. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CHAMBERLIN STANLEY, a citizen of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented a new and useful Improvement in Latch-Locks, of which the following is a specification.

My invention relates to improvements in latch-locks wherein the latch-bolt is locked by the insertion of a key in the shank of the door-knob; and the objects of my invention are, first, to provide a simple and effective lock of this nature, and, second, to provide improved means for securely fastening the knob-shanks to the door in order to prevent the lock from being tampered with.

I attain the objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the lock with the covering-plate removed; Fig. 2, a sectional view of one of the knob-shanks and its rose; Figs. 3, 4, and 5, details of the lock mechanism; Fig. 6, a plan view showing the manner of fastening the knob-roses to the door; and Fig. 7, a plan view of the lock mechanism, showing the lock-case in section and inserted in a door.

Similar letters refer to similar parts throughout the several views.

A represents the latch-bolt, which is operated in the usual manner by wings on hub B engaging lugs on the arms of the latch-bolt. The hub B is provided with three holes in a diametrical line, the two outside holes *b b* receiving the rods *c c*, which run from the knob-shank C on one side of the door to the shank on the other side, these rods forming the knob-spindle, and operating, when the knob on either side of the door is turned, to rotate the hub B and retract the latch-bolt A. Between the wings on hub B and the latch-bolt is a tumbler D, pivoted on hub B by means of the collar *d*. This tumbler, when thrown up into the position shown in Fig. 1, engages the lug *a* on the latch-bolt and prevents it from being retracted. The normal position of the tumbler is indicated by the broken lines. On the rear portion of the collar *d* is a shoulder *e*, curved, as shown in Figs. 1 and

3, to form notches which are engaged by a curved spring E to retain the tumbler in place when it has been turned into either one of its two positions—that is, to hold it in locking position or in releasing position. A stop F above the spring E is made to engage the shoulder *e* and a pin *f* on the collar to limit the throw of the tumbler D. The hub B is provided with a longitudinal recess at *b'* of triangular shape. Through the center of the hub passes the key-spindle H. This spindle has an enlarged shank G, which extends out into the hollow knob-shank C and is split to receive the flat key K. An arm I is pivoted on the key-spindle at the bottom of recess *b'*, being held in position by the shoulder formed by the enlarged shank G. A pin *g*, projecting from the shank G, engages a boss *i* on the arm I and causes the arm to be turned in one direction or the other, according to the way in which the key is turned. The pin *g* and boss *i* are so located and proportioned that the key K may be given a half-rotation in one direction or the other when the door is to be locked or unlocked in order that the clefts *k k* in the key may be brought opposite the slits in the annular wards, which project inwardly from the hollow knob-shank C.

L is an escutcheon provided with a slit adapted to receive the key and is held rotatively in the end of the knob-shank. The arm I is provided with a pin J, which enters a hole *j* in the shoulder *e* on collar *d*, and thus when the arm I is given a partial rotation in one direction or the other by the turning of the key the collar *d* is made to rotate to a corresponding degree, and the tumbler D is thrown up into locking position or down to normal position, as the case may be. On the opposite side of key-spindle H from shank G is attached a second crank G' by means of the pin *h*, this shank G' entering the knob-shank on the opposite side of the door and being operated upon by the key K from that side of the door in the same manner as already described. The rods *c c* are fast to the knob-shank C, and when the lock is assembled in the door the free ends of the rods *c c* enter corresponding holes in the knob-shank on the opposite side of the door. The door can there-

fore be opened by turning the knob on either side and can be locked or unlocked by the insertion of the key from either side.

In order to prevent the knob-shanks from being removed and the lock tampered with, the knob-roses M and M' are not fastened to the door by exterior screws in the usual manner, but are secured by means of the screws P P, which fasten the rim of the lock to the edge of the door. Each rose is fastened to the knob-shank by a swiveled collar *m*, held in place by a threaded collar N, and at diametrically opposite points near the periphery of each rose are inwardly-projecting studs O O and O' O', half-round in shape and having their flat sides serrated. The studs O are provided with tapped holes *o*, and the studs O' are provided with slots *o'*.

In assembling the parts of this lock in a door a mortise is first made for the lock-case, the mortise being cut so as to have its center line at a distance from one side of the door equal to the distance from the rose M to the center of the tapped holes *o* on studs O O. Holes are then bored inwardly for the screws P P and transversely for the studs O and O'. The lock-case is then placed in the mortise, the knob-shank carrying the rods *c c* is placed in position with the rods through holes *b b*, and the rose M is brought up against the side of the door, the pins R R being driven into the door and securing the rose, with the studs O O, in vertical alinement. The opposite rose M', carrying its knob-shank, is then placed in position, the rods *c c* entering the holes provided therefor in the knob-shank, the studs O' O' coming up against the studs O O and the pins R R being driven into the door. Screws P P are then inserted through the slots *o' o'* and screwed into holes *o o*, the shoulders of the screws coming up against the studs O' O' and securely fastening the studs O and O' together, the serrations on the sides of the studs preventing them from being pulled apart. These serrations for purpose of illustration are shown exaggerated in Fig. 6. The slots *o' o'* allow for the adjustment of the studs O O' according to the thickness of the door.

I may also provide the tumbler D with a pin *y*, secured in the hole *x* and projecting through a suitable slot *z* in the latch-case and door and a similar slot *z'* in one of the knob-

roses, by which the tumbler may be operated without the use of a key. This pin or snap *y* would be placed on the inside of the door to form a night-latch, the outside knob only being provided with the keyhole.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. In a latch-lock, the combination, with the latch-bolt, of a tumbler pivoted on the latch-hub, a key-spindle passing through the hub, hollow knob-shanks to receive the ends of the key-spindle and the key which operates the spindle, and a connection between the spindle and the tumbler whereby the latter is operated by the key to lock or unlock the latch-bolt, substantially as described.

2. In a latch-lock, the combination, with the latch-bolt, of a tumbler pivoted on the latch-hub, a key-spindle passing through the hub, hollow knob-shanks to receive the ends of the key-spindle and the key which operates the spindle, rods uniting the knob-shanks through the hub, an arm pivoted on the key-spindle in a recess in the hub, a pin on the arm passing through a hole in a shoulder on the tumbler-collar, a spring and stop to limit and control the motion of the tumbler, and a pin on the key-spindle to engage a boss on the arm, whereby the tumbler is operated by the key to lock or unlock the latch-bolt substantially as described.

3. In a latch-lock, the combination, with the latch-bolt, of a tumbler pivoted on the latch-hub, a spring and stop engaging the collar on the tumbler to limit and control its motion, and a pin *y* projecting from the tumbler at one side of the door through a suitable slot, whereby the tumbler may be actuated by hand to lock or unlock the latch, substantially as described.

4. The combination, with a mortise-latch, of a pair of knob-roses swiveled on the knob-shanks, studs projecting inwardly from said roses and lapping one another when in position, and a screw passing through the latch-rim and engaging the lapped studs to fasten them together substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GEORGE CHAMBERLIN STANLEY.

Witnesses:

DOW S. BARNES,
DE WITT C. BOUTON.