

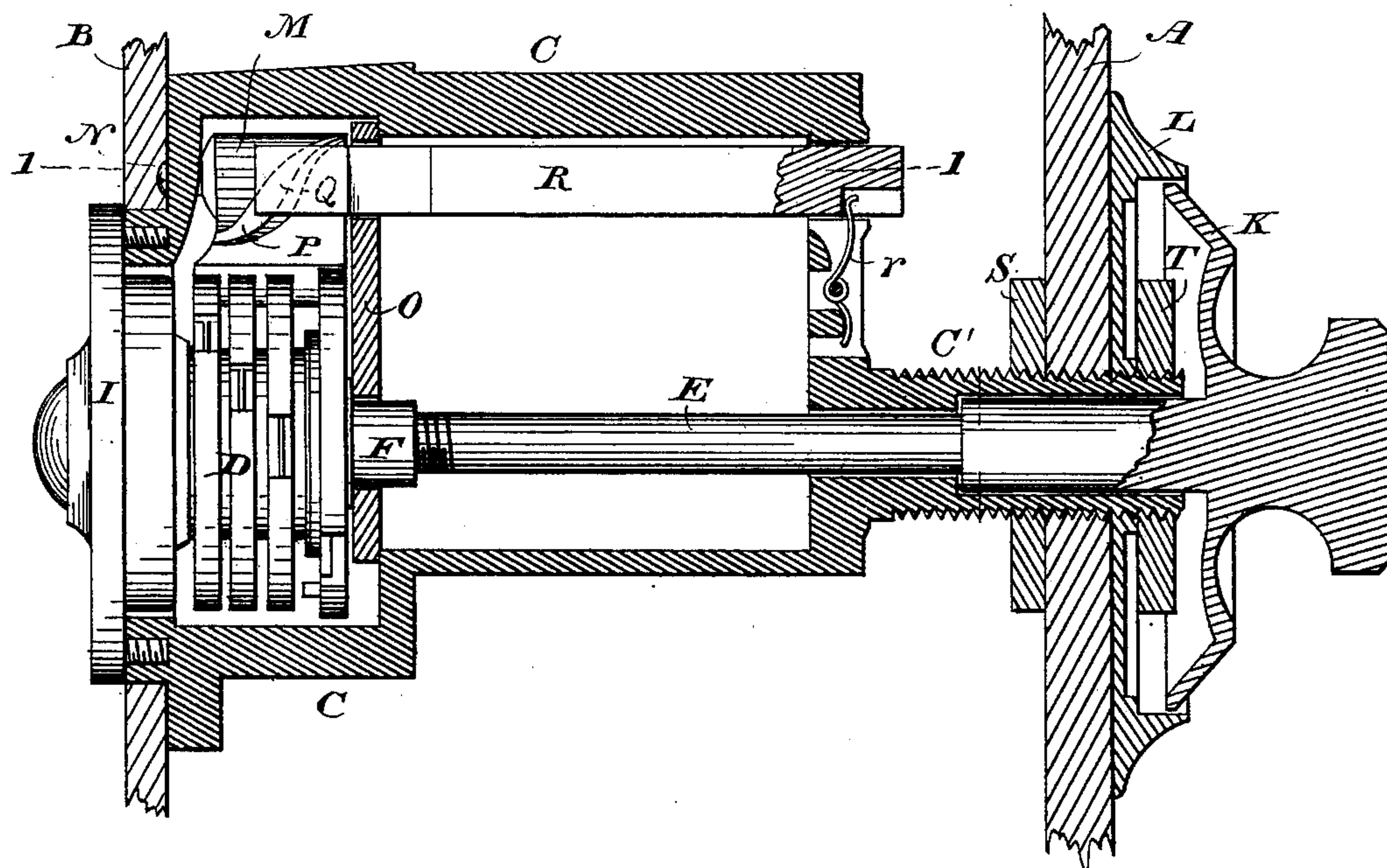
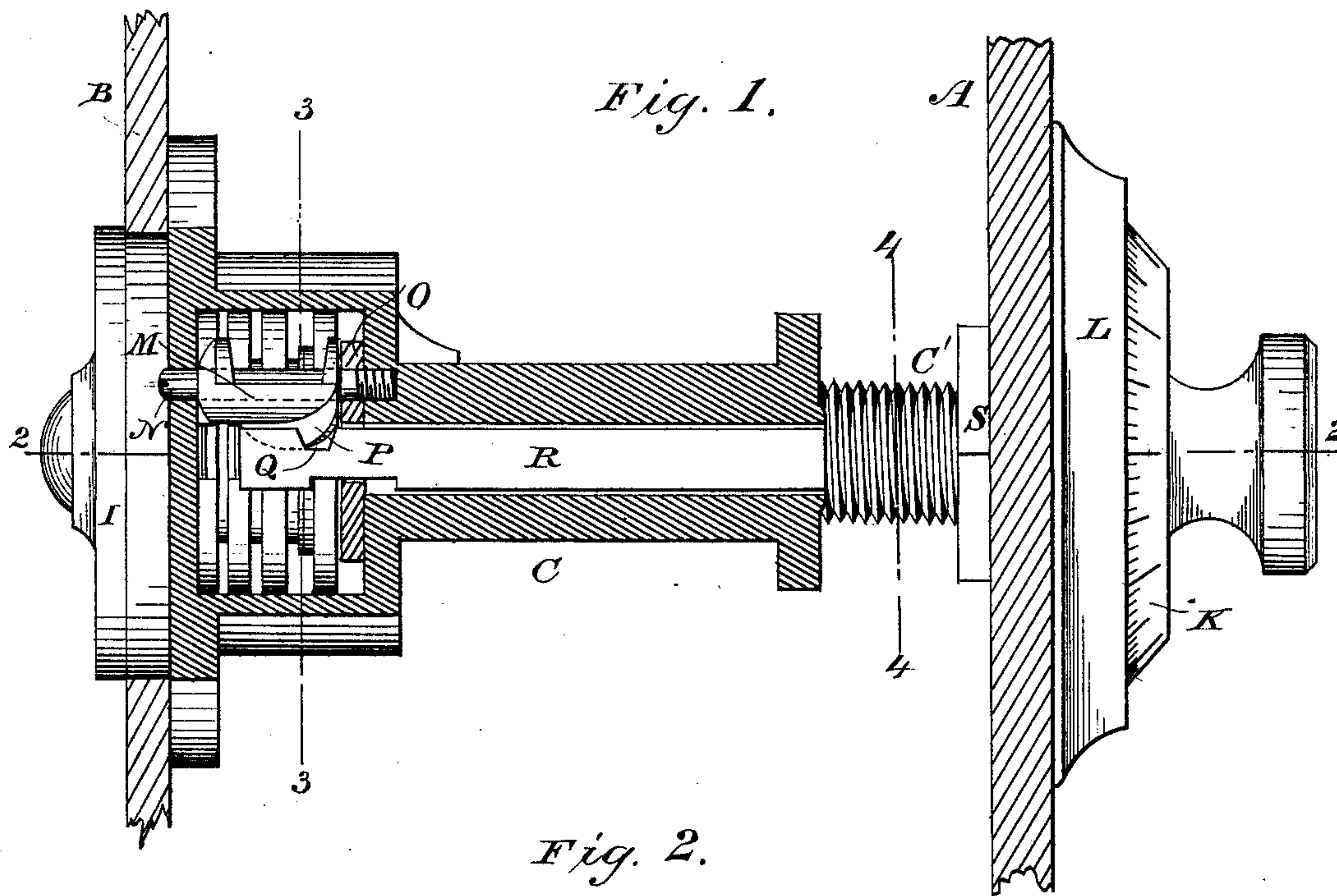
(Model.)

2 Sheets—Sheet 1.

H. W. COVERT.
Permutation Lock.

No. 233,922.

Patented Nov. 2, 1880.



WITNESSES

Wm. A. Skink.
Robertdean Buchanan.

By his Attorneys

Baldwin, Hopkins, & Peyton.

INVENTOR

Henry W. Covert.

(Model.)

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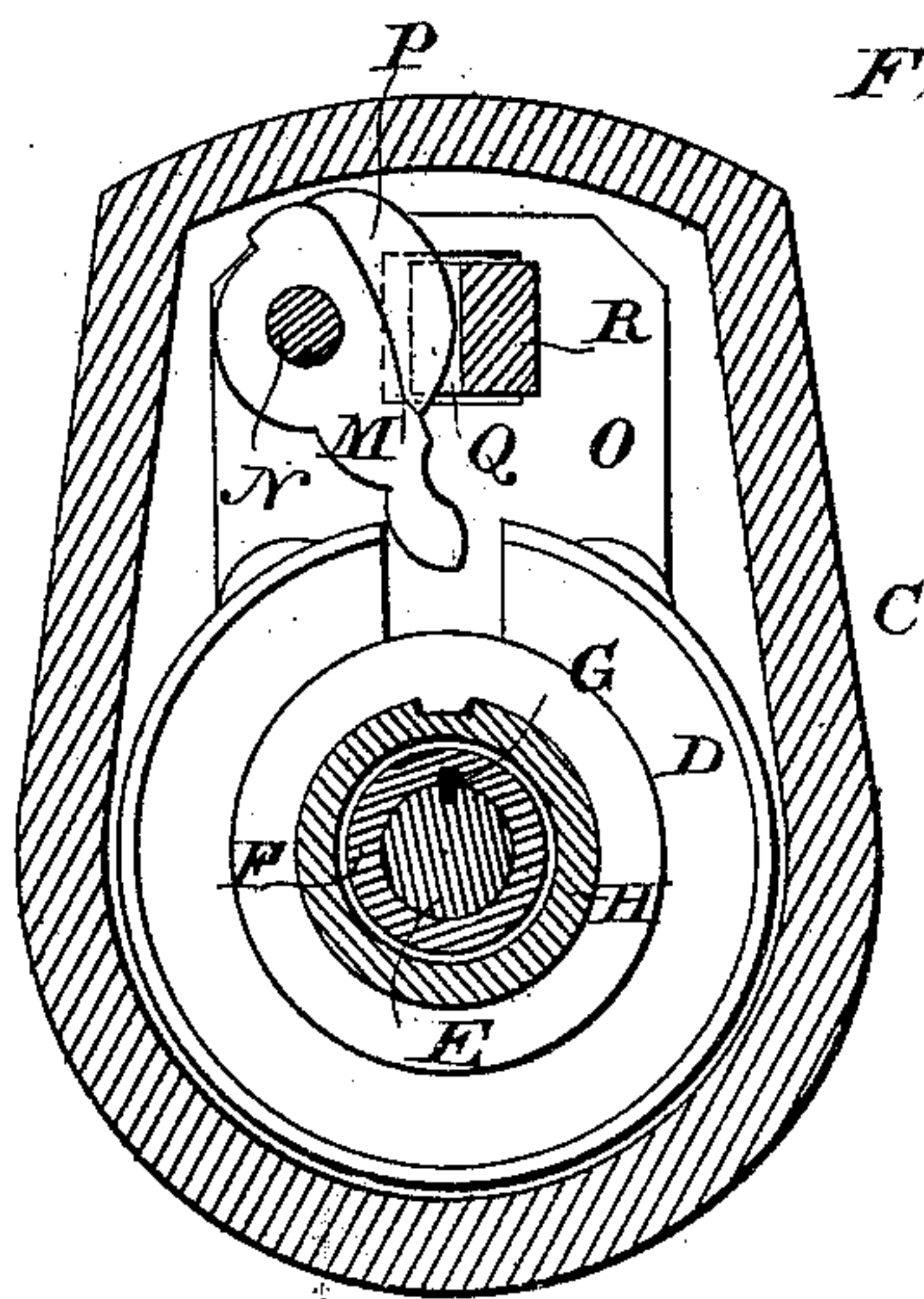


Fig. 3.

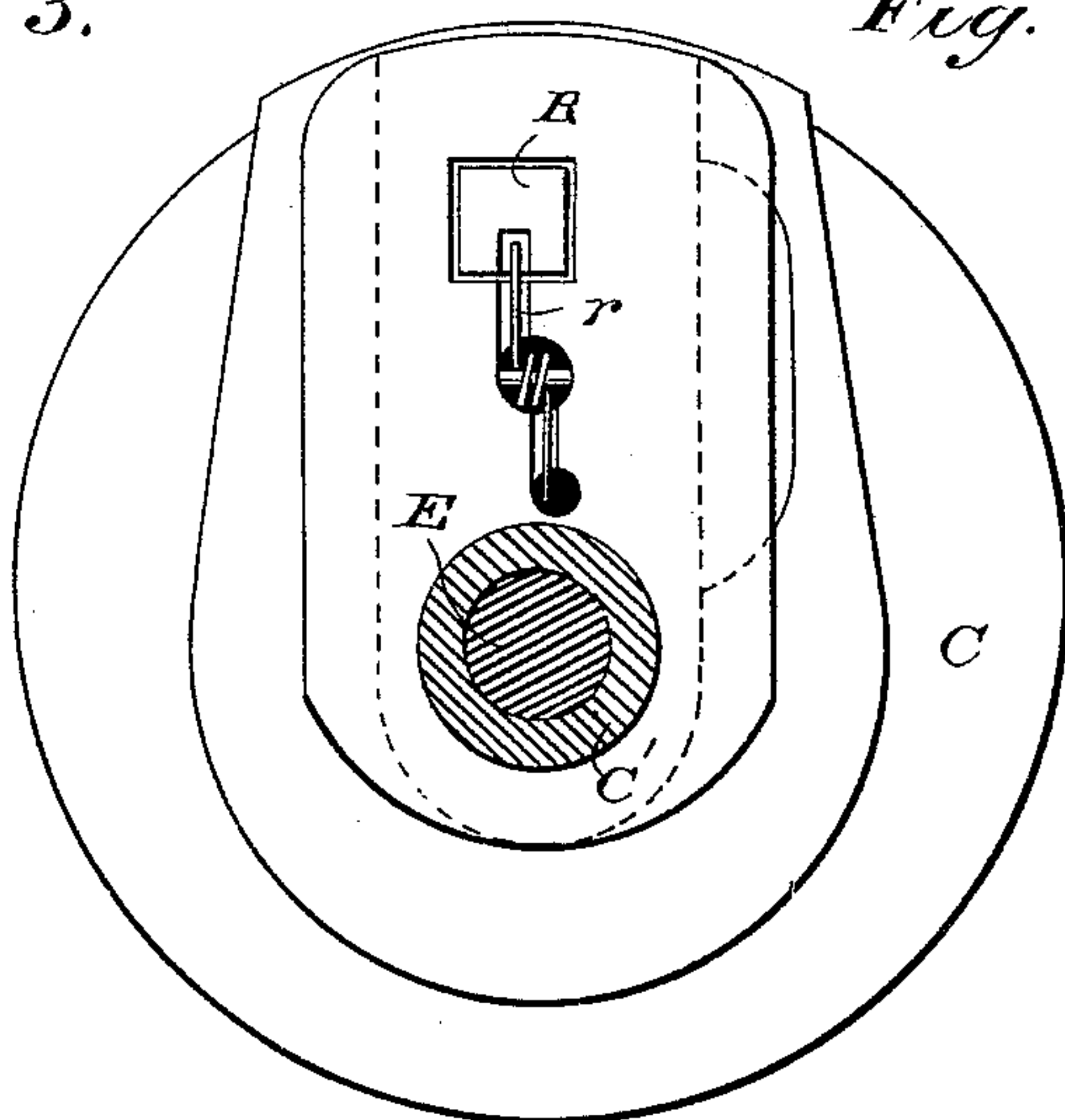


Fig. 4.

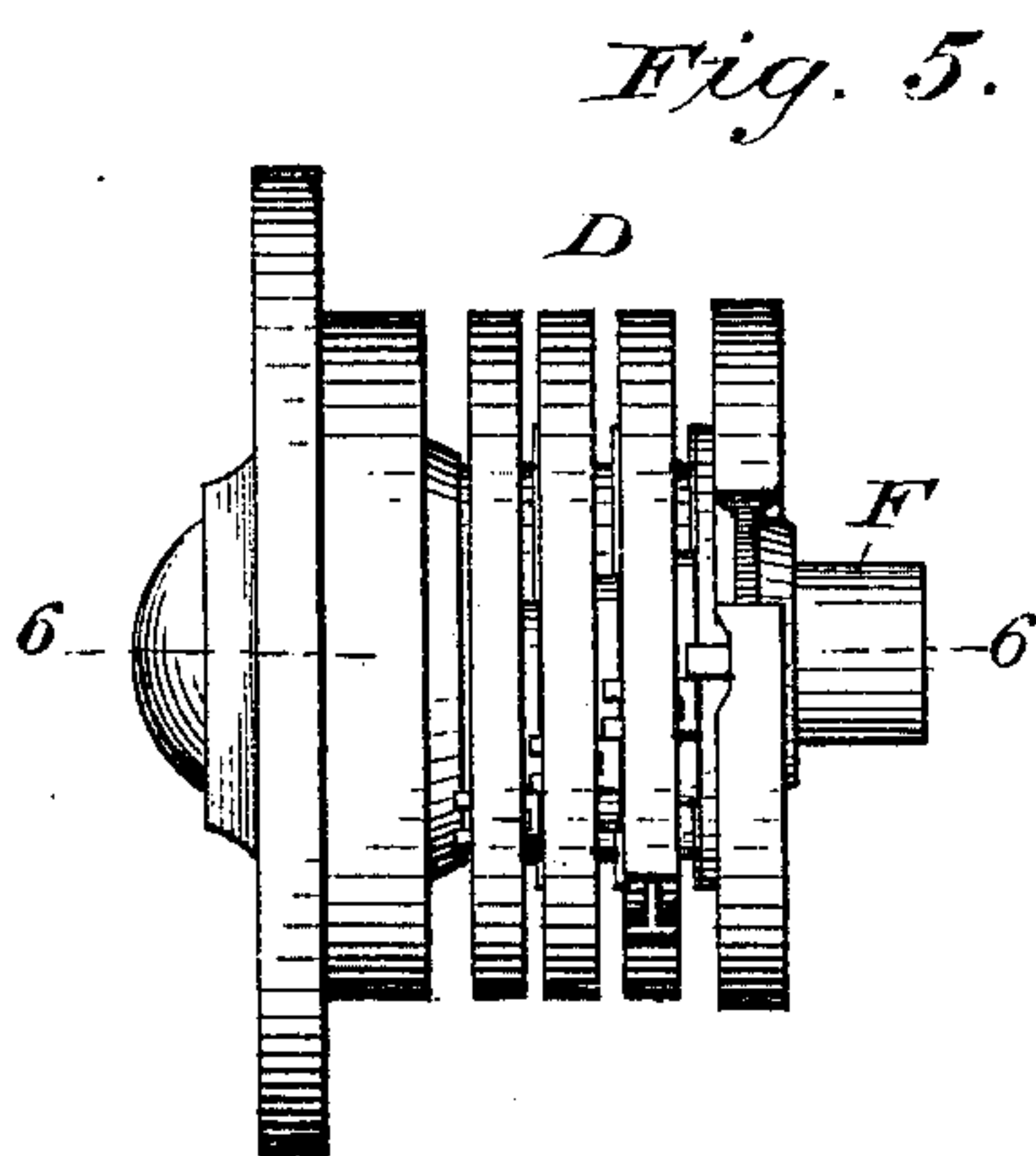


Fig. 5.

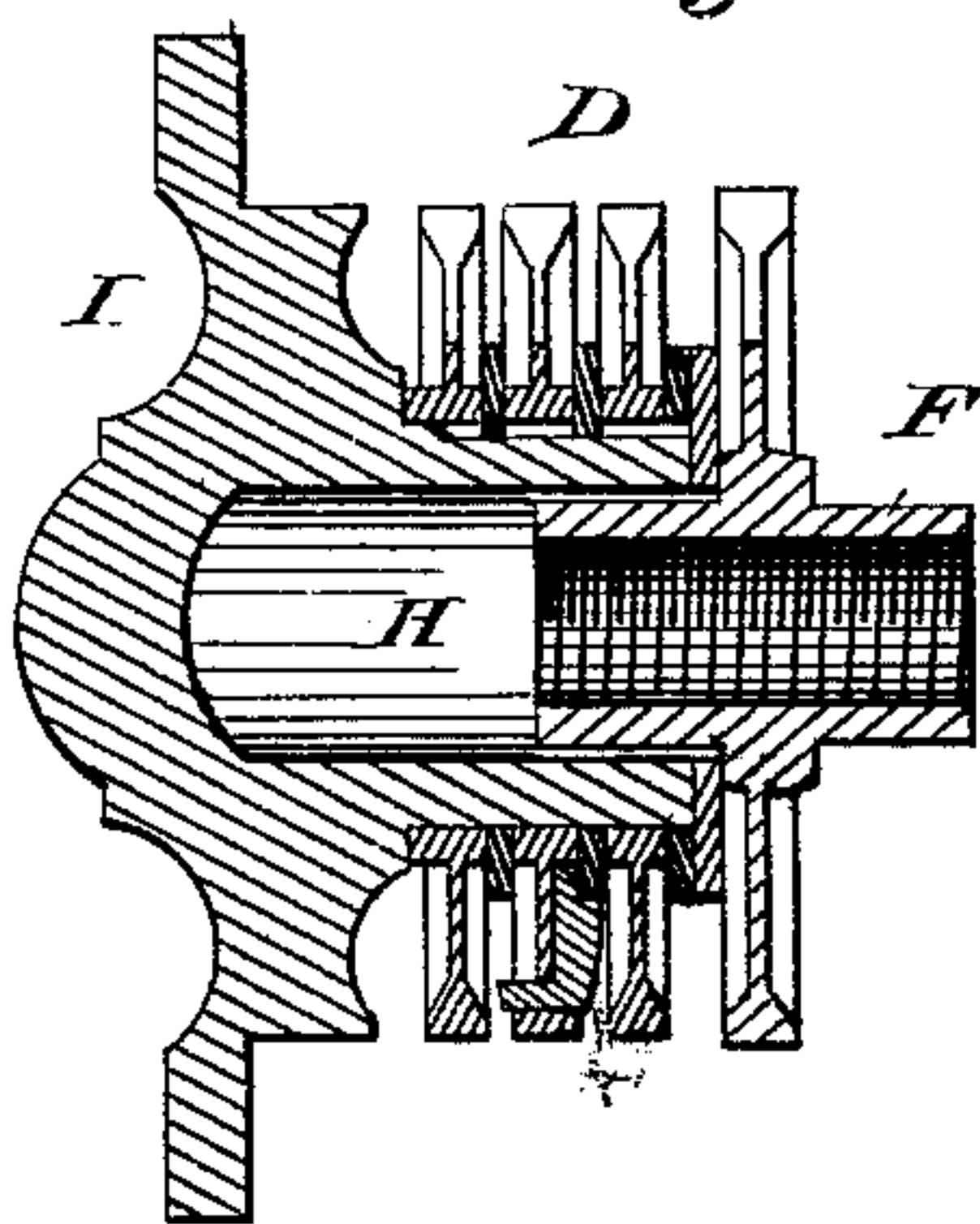


Fig. 6.

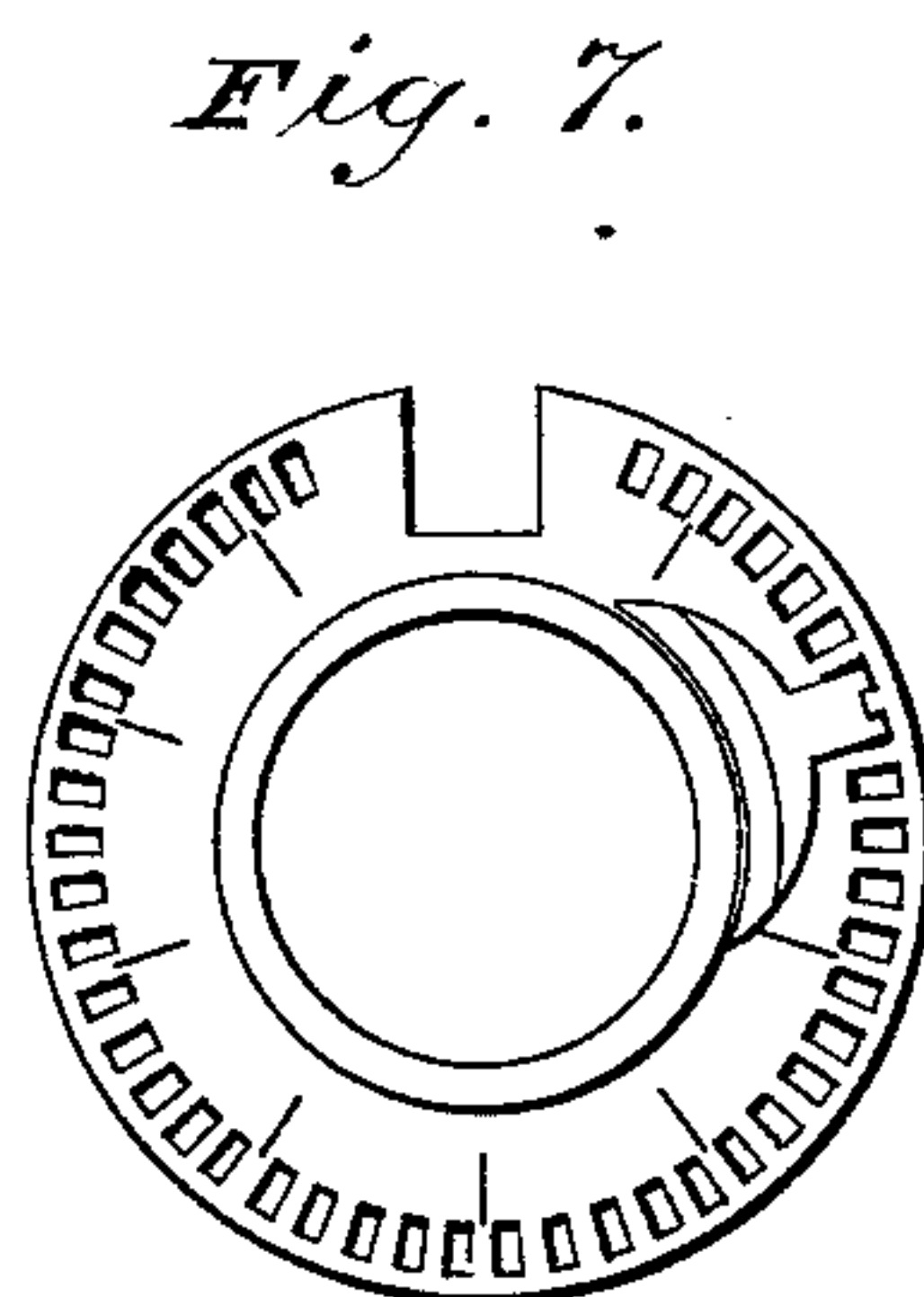


Fig. 7.

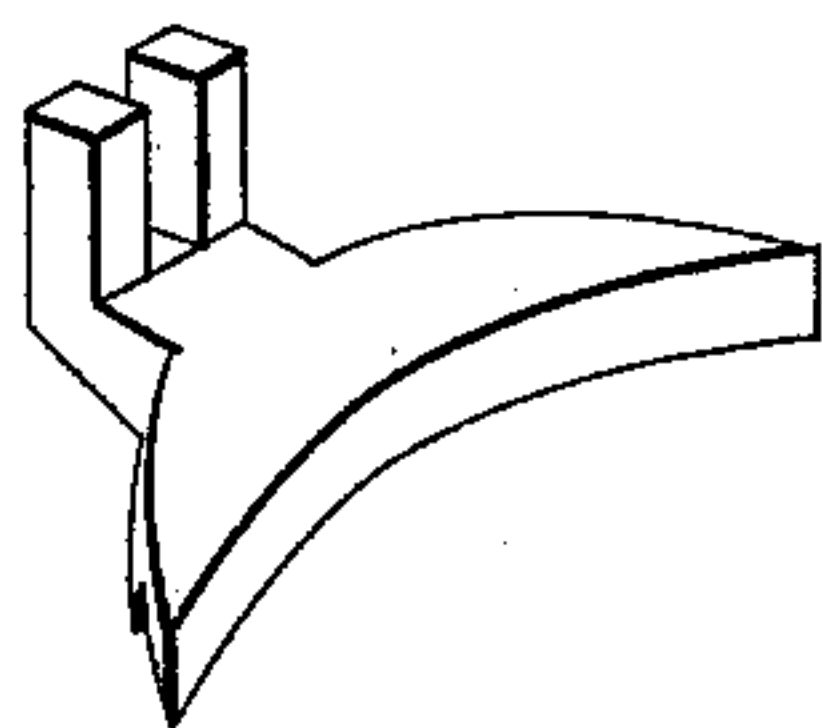


Fig. 8.

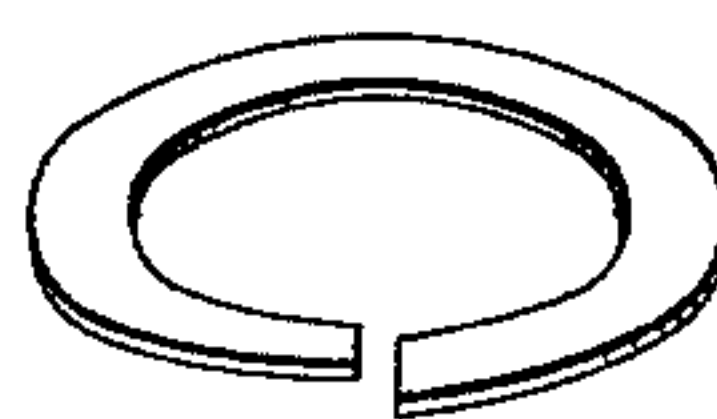


Fig. 9.

WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

HENRY W. COVERT, OF NEW YORK, N. Y., ASSIGNOR TO MARVIN SAFE AND SCALE COMPANY, OF SAME PLACE.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 233,922, dated November 2, 1880.

Application filed May 22, 1880. (Model.)

To all whom it may concern:

Be it known that I, HENRY W. COVERT, of New York city, have invented certain new and useful Improvements in Combination-Locks, of which the following is a specification.

My invention relates to improvements in the construction of combination-locks for safes in which a thick lining of plaster or other non-conductor of heat is employed to render them fire-proof.

My invention relates particularly to improvements in the kind of combination-lock described and illustrated in the patent of W. K. Marvin, dated July 28, 1874, No. 153,588. In that lock the dogging appliances project inward from the lock-case, and are necessarily more or less exposed to contact with the fire-proof filling.

My improvements consist, first, in an improved construction whereby a sliding locking bar or dog is moved at right angles to the line of motion of the bolt-work, (not illustrated,) so as to effectually dog or check the latter; second, in an improved construction whereby the lock-case and the dial-ring are securely attached to the door without the use of the ordinary screw-bolts or rivets; third, in an improved tumbler-fence so constructed and applied as to serve for transmitting motion to the dogging bar or bolt.

The nature of my improvements and the manner in which I prefer to embody them are illustrated in the accompanying drawings, in which—

Figure 1 is a plan view, partly in section, on the line 1 1 of Fig. 2. Fig. 2 is a vertical longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a transverse section on the line 4 4 of Fig. 1; and Figs. 5, 6, 7, 8, and 9 are detail views of the tumblers and their fittings, with respect to which I claim nothing.

In Figs. 1 and 2, A indicates a section of the outer metallic plate of a fire-proof safe or vault door, and B indicates a section of the inner plate of the same. The lock-case C is shown in position between these plates, extending the whole distance from one to the other, so as to dispense with a well, and it is to be surrounded by suitable fire-proof filling. The front end or tubular nosing, C', of this case is represented as screw-threaded and projecting through the outer plate of the door, while the rear end passes through the inner plate and rests flush with its surface. The case is preferably cast in one piece, with a hollow interior of suitable shape to accommodate the lock mechanism, and of substantially corresponding external outline.

D indicates ordinary rotary tumbler mechanism, operated by the spindle E. The inner end of the spindle enters the tubular axis F of the first tumbler, and is secured therein by means of its screw-threads and a spline, G, or in any other convenient manner. This tubular axis has its bearing in the hollow circular projection H of the cap-plate I. All the tumblers except the first are mounted loosely upon the circular projection H, and are so connected with the first tumbler as to be successively picked up and rotated and their gatings brought into line in the usual manner of combination dial-locks of this character.

K indicates the graduated dial and its knob, attached to the outer end of the spindle, and working in the usual way in the dial-ring L. A fence, M, swings loosely upon a pivot, N, which passes through the inner end of the case and enters a supporting-plate, O. This fence is provided upon one side with a cam, P, which enters an inclined groove, Q, in the sliding dogging-bolt R, for securing the bolt-work of the door. This bolt-work is supposed to be mounted next the inner face of the outer door-plate, and to be provided with a suitable recess, into which the dogging-bolt can enter when the bolt-work is thrown forward into the fastening position. A spring, r, (which is not indispensable,) tends to retract the dogging-bolt, and, through the cam P, to swing the fence down into the tumbler-gatings wherever they are brought into line under the fence.

In setting up my lock the nosing carrying the nut S is screwed a short distance (controlled by the position of the nut) through the outer plate of the door. The dial-ring is then placed in position upon the nosing and a nut, T, screwed down, so as to firmly clamp the ring and outer plate between the two nuts. The spindle, carrying the dial and its knob, is

then inserted and secured from the inside. The tumblers are then mounted and the cap-plate secured in place, as indicated in the drawings, so that the joint between the lock-case and the inner door-plate is covered. It
5 will thus be seen that I effect a secure tight-fitting attachment of the lock and the dial-ring to the door entirely without the use of the holes, screws, or rivets ordinarily employed.

10 In locks as heretofore constructed it has been customary to employ three or four tap-bolts for securing the lock-case to the door, two or three screws for fastening the dial-ring to the front of the door, and from four to twelve
15 screws or rivets for attaching and securing in place the well-hole in the door, and the cap for covering the same on the interior. Most, if not all, of these holes required not only to be drilled, but tapped or screw-threaded, so that
20 the cost of drilling and tapping, and of furnishing the necessary screws and rivets to be used, has constituted a very large addition to the cost of locks of this class. By means of my invention a proper attachment of the parts is
25 secured, while all of this expense is saved, a single small hole only being required in each of the two plates of the door.

In operating my lock the dial rotates the tumblers, as usual, and the vibrating fence
30 rests against the periphery of the tumblers, so that when their gatings are in proper position it can fall into them and be farther swung to one side, which will result in actuating the cam, so as to retract the dogging-bolt. The
35 reverse motion of the dial, when the lock is

unlocked, throws the dogging-bolt forward into position to check or prevent the motion of the bolt-work, and continued motion of the dial in the same direction will derange the tumblers of the lock, so that the fence cannot
40 again fall or the lock be opened until the tumblers are set in their proper position by a person knowing the combination on which they are arranged.

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

1. The combination of the case C, with a screw-threaded tap or nosing, and the clamp-
50 ing-nuts S and T, for holding in place on the door the lock-case, and the dial-ring, as set forth.

2. In combination with a lock-case, C, the sliding dogging-bolt, moving in a direction
55 parallel with the lock-case and its spindle, and its operating mechanism, substantially as and for the purposes described.

3. The combination of the lock-case, the vibrating fence, the cam or inclined projection thereon, and the sliding dogging-bolt, which
60 is operated by said cam and moves in a direction parallel with the case and spindle of the lock, substantially as described.

In testimony whereof I have hereunto subscribed my name.

HENRY W. COVERT.

Witnesses:

EDWARD C. GRAVES,
SCHUYLER MERRITT.