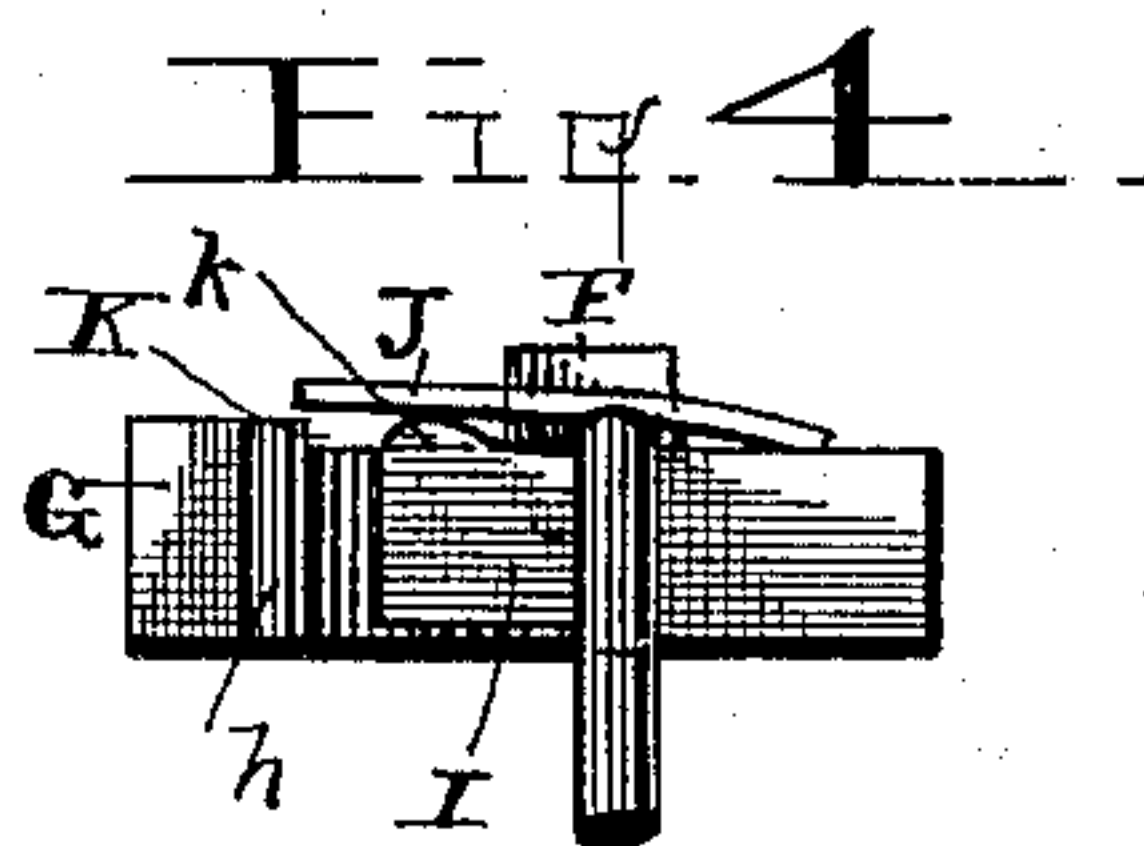
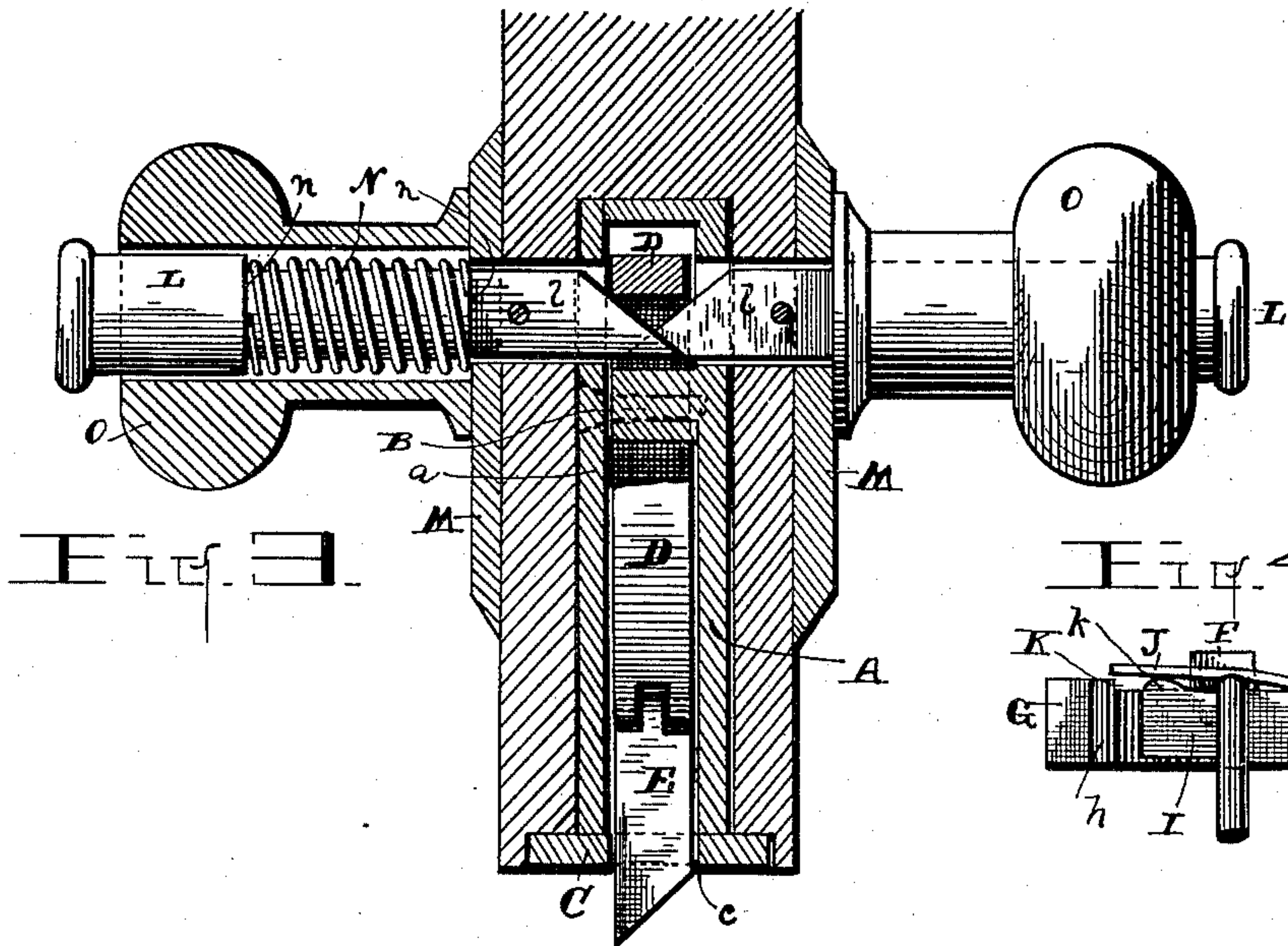
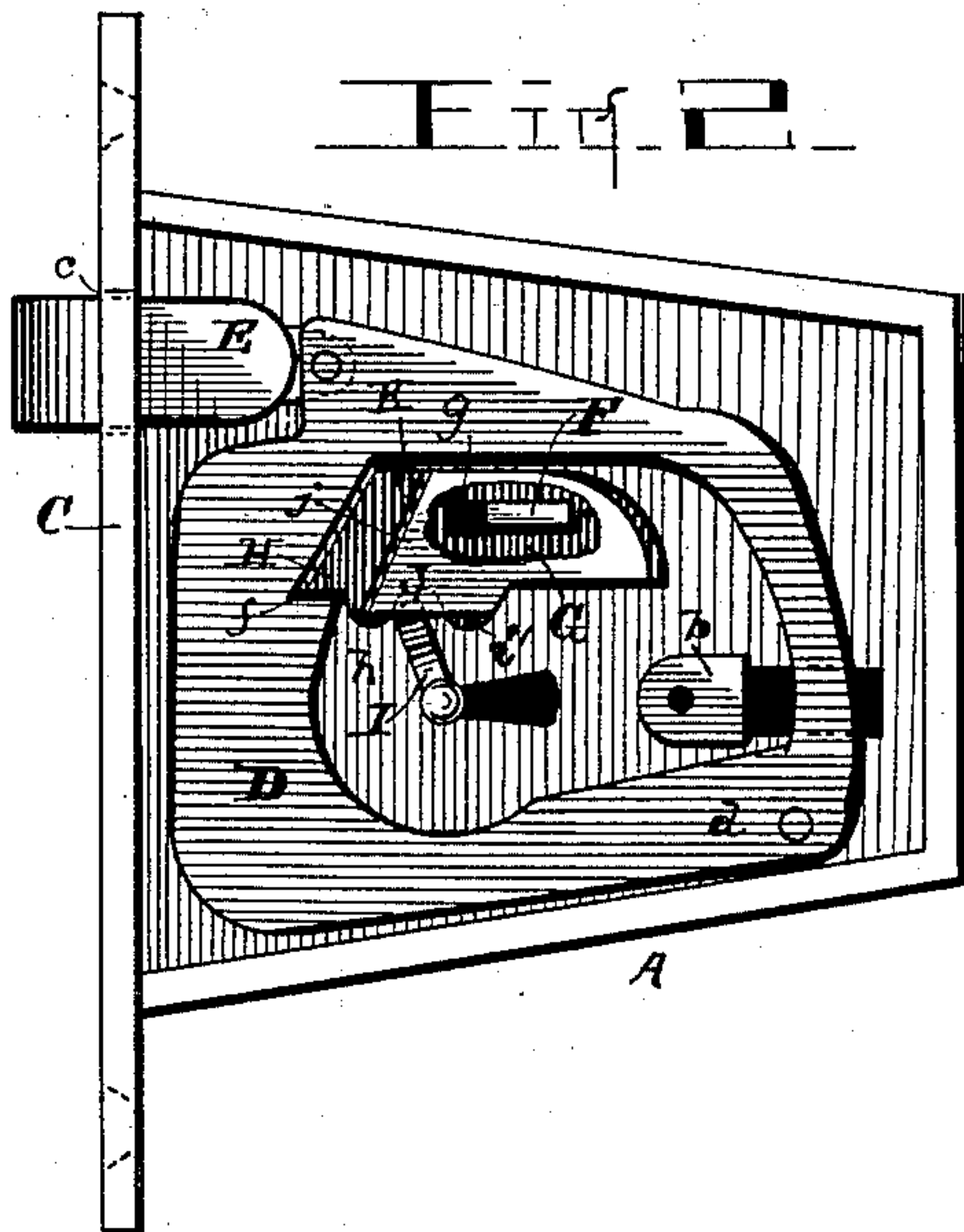
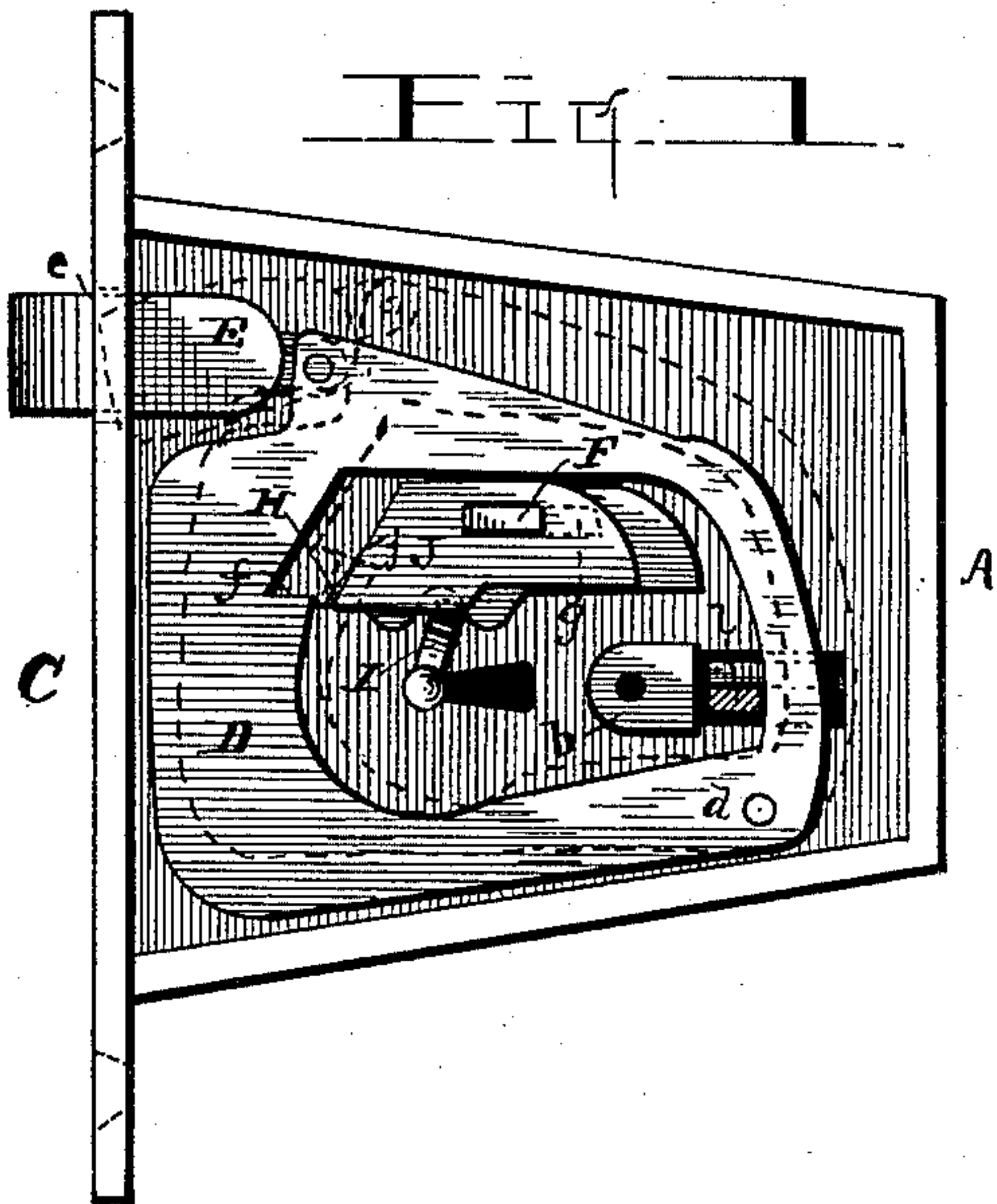


(No Model.)

J. A. CAMPBELL.
LATCH AND LOCK COMBINED.

No. 401,540.

Patented Apr. 16, 1889.



Witnesses.

A. E. Towell.

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UNITED STATES PATENT OFFICE.

JOHN ARCHIE CAMPBELL, OF ELLIS, KANSAS, ASSIGNOR TO HIMSELF AND
F. J. BEST, OF SAME PLACE.

LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 401,540, dated April 16, 1889.

Application filed April 7, 1888. Serial No. 269,932. (No model.)

To all whom it may concern:

Be it known that I, JOHN ARCHIE CAMPBELL, of Ellis, in the county of Ellis and State of Kansas, have invented certain new and useful Improvements in Latches and Locks Combined; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of the lock with one side plate removed, showing the tumblers disengaged. Fig. 2 is a similar view, showing the tumblers engaged. Fig. 3 is a horizontal sectional view showing the knob attachments. Fig. 4 is a detail.

This invention is an improvement in locks; and its objects are to provide a gravitating catch, to improve the knob attachments and the manner of operating the catch from the handles, and, further, to provide devices for locking the catch, all of which will be evident from the following description, in connection with the drawings, and is concisely stated in the claims hereto annexed.

In the drawings, A represents the case of the lock, which, as represented, is a mortise-lock, having the removable side *a* secured in position by a screw, B, engaging a threaded socket in a lug, *b*, of case A, as shown.

C is the face-strip of the case, provided with perforations for the passage of retaining-screws and with the latch-opening *c*, as shown.

D represents the main tumbler, which occupies nearly the entire casing, having just sufficient room therein to move on its pivot *d*, near the lower inner end of the case, as shown. The interior of this tumbler is cut out to accommodate lug *b* and a locking-tumbler, G, and the key-head, hereinafter described.

At the upper outer corner of tumbler D is the latch-head E, which plays through opening *c* as the tumbler is shifted on its pivot. The part of the tumbler below latch E is enlarged, as shown, to weight the tumbler and cause it to drop by gravity when lifted and released, so that the latch will be held normally projected out of the case in position to engage the keeper. The latch-head is preferably made separate from tumbler D and pivoted thereto, as shown, so that it can be se-

cured to the tumbler to face right or left, according to the swing of the door. When the latch-head engages the keeper, its beveled face causes the head to move inward, thereby oscillating tumbler D on its pivot; but as soon as the latch-head disengages the head of the keeper the weighted tumbler projects it out of the casing, as before. It will be seen that the tumbler is shouldered at *e* below latch E to accommodate the oscillation of the latter, and this shoulder supports the head when it is forced back into the casing.

F is a lug, preferably rectangular in cross-section, secured in the casing within the opening of tumbler D and in front of and above lug *b*.

G is a locking-tumbler placed on lug F and having a slot, *g*, which permits it to have a degree of longitudinal play thereon, one end of said locking-tumbler projecting over lug *b*, and the other end is beveled into a tooth, H, which is adapted to be engaged with a corresponding notch, *f*, formed in the adjoining inner edge of tumbler D, as shown.

Below tumbler G is formed the key-opening, and the edge of the tumbler G adjoining this opening is formed with teeth *h i'*, which the head of the key I engages to shift the tumbler G.

J is a spring-plate placed on lug F outside tumbler G, and which when side *a* is secured in place prevents tumbler G from jarring into or out of engagement with tumbler D. This plate has an edge, *j*, which engages a corresponding shoulder, K, of tumbler G, when the latter is thrown into engagement with the tumbler D, as shown, and prevents the casual disengagement of tumbler G therefrom.

The operation of these parts is, briefly, as follows: The parts being in proper position and locked, as shown in Fig. 2, the key is inserted and turned, so that its head I will engage the tooth *i'* of tumbler G. This head is provided with a rounded shoulder, *k*, which is adapted to engage and raise the end of plate J until the latter is clear of shoulder K previous to the contact of head I and tooth *i'*. The further turning of the key forces tumbler G back until it disengages tumbler D, leaving the latter free to operate, as described. Then when it is desired to engage the tumblers the key is inserted and turned in the op-

posite direction, engaging tooth *h* of tumbler G, forcing the latter outward into engagement with tumbler D, as shown, and letting plate J automatically engage shoulder K.

5 This shoulder on the tumbler G is not absolutely necessary, as the tumblers would be securely engaged without the use of plate J; but this plate prevents casual shifting of tumbler G on its lug, and the plate engaging the

10 shoulder requires a key to be used that will lift the plate before moving the tumbler. Only one tumbler, G, is shown; but in practice two or more may be employed having irregular teeth, so that different-headed keys

15 will be required for each lock; but all of these modifications act upon the principle described, and would not depart from the essential features of my invention.

L L are knob-spindles having angular inner ends, *l l*, which pass through corresponding angular openings in plates M M, secured on opposite sides of the door and lock, as shown in Fig. 3, the spindles being keyed to prevent their escape from said plates, as

25 shown. The inner ends of these spindles are beveled and enter the lock-case through suitable openings in the side plates at points near and above the pivot of tumbler D, the said beveled ends entering the openings of said

30 tumbler and impinging against its inner edge by their beveled faces, while their plain faces rest against the side of lug *b*. Now, when either spindle is pushed inward its beveled end wedging between lug *b* and the adjoining

35 face of the tumbler D will force the latter to oscillate on its pivot, as is evident, thus throwing the latch-head inward and disengaging it from its keeper. When the spindles are retracted, the latch will be projected

40 from the lock, as before described. In order to retract the spindles, I employ coiled springs N, placed on a reduced portion of the spindles between shoulders *n* thereof and the plates M, whereby the spindles are forced outward.

45 O O are the knob-handles, which may, if desired, be loosely mounted on spindles L L, so that they can revolve thereon and the spindles play freely therethrough, or preferably the knobs are rigidly attached to plates M M, so that they support the spindles in proper

50 horizontal positions.

The spindles are independent of each other, and by omitting one the lock can be conveniently employed as a night-latch.

55 Having described my invention, I claim—

1. The combination of the gravitating tumbler D, pivoted at its lower inner corner and having a latch-head at its upper outer corner

and shouldered on its interior edge, substantially as described, with an adjustable locking-tumbler within the gravitating tumbler adapted to engage the shoulder thereof to lock the same, and a spindle for oscillating the gravitating tumbler, substantially as specified.

2. The combination of the pivoted tumbler D, with a knob-spindle having a beveled end engaging said tumbler and adapted to oscillate the tumbler when pushed inward, and the spring for retracting said spindle, substantially as described.

3. In a lock, the combination of the pivoted tumbler D and movable tumbler G, located inside said tumbler, with a sliding knob-spindle, L, engaging tumbler D, and the spring

75 controlling said spindle, all substantially as and for the purpose described.

4. The combination of the pivoted weighted tumbler D and its latch-head with the slotted sliding tumbler G, and the spring-plate J, mounted on and adapted to lock said tumbler G, all constructed and arranged substantially as described.

5. In a lock, the combination of the casing having lug F, the pivoted tumbler D, latch-head E, and the slotted tumbler G, mounted on lug F, and its spring-plate J, with the knob-plates M M, the spring-controlled knob-spindles L L, and knobs O, all constructed and arranged to operate substantially in the manner and for the purpose described.

6. The combination of the casing having a lug, *b*, and the pivoted hollow tumbler D therein, with the knob-spindles L L, having flattened and beveled inner ends bearing against the lug *b* and engaging tumbler D when pushed inward, and the springs controlling said spindles, all substantially as and for the purpose described.

7. The combination of the casing having a lug, F, and a tumbler, D, pivoted at its lower inner corner in the casing and having a latch at its upper outer corner and shouldered on its interior near said latch, with the sliding toothed locking-tumbler G, mounted on lug F, and the spring-plate J on lug F, adapted to lock tumbler G, and the spindles for oscillating tumbler D, all substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

J. ARCHIE CAMPBELL.

Witnesses:

L. C. ROSS,

W. P. HAMILTON.