

W. H. TAYLOR.
Lock.

No. 208,863.

Patented Oct. 8, 1878.

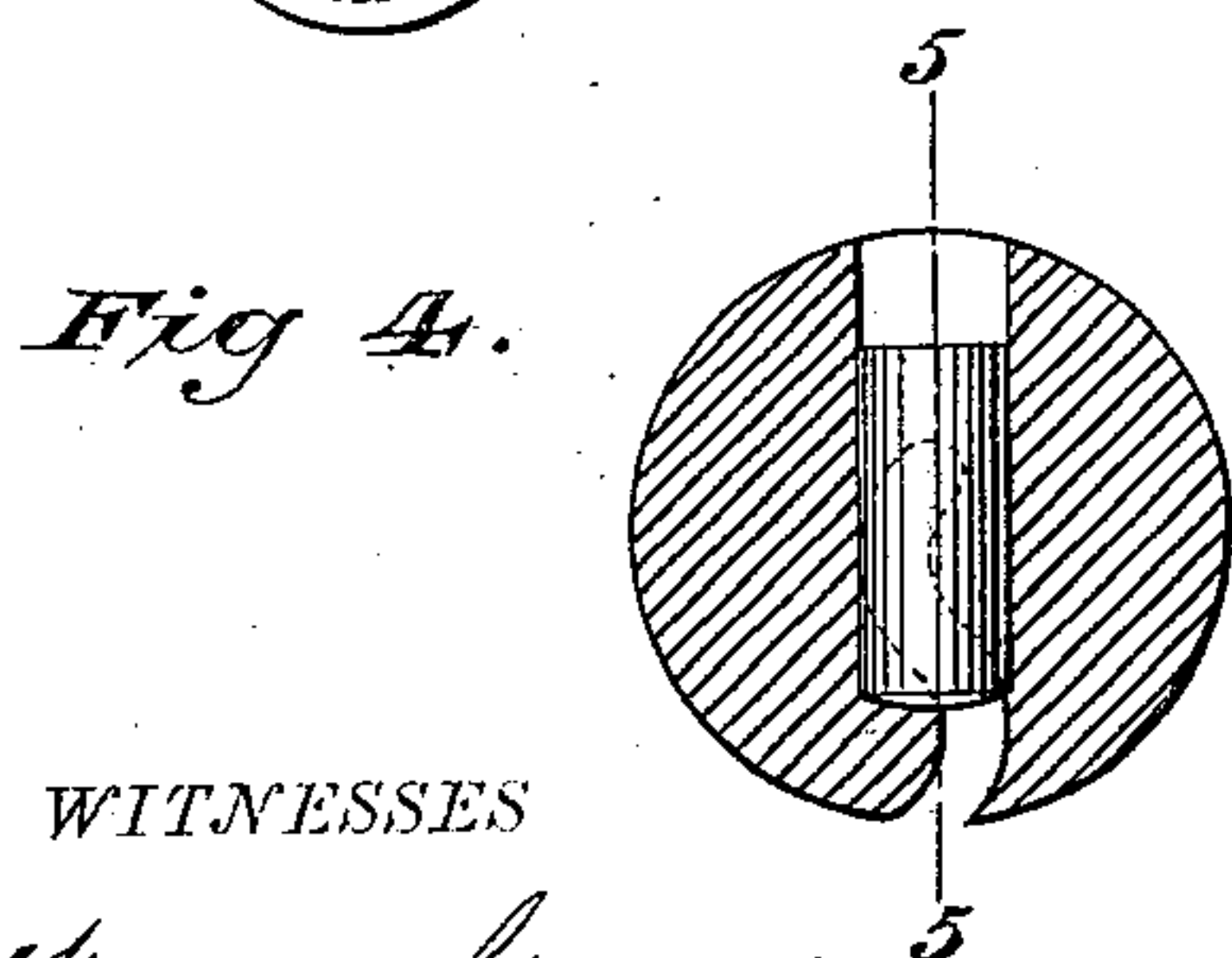
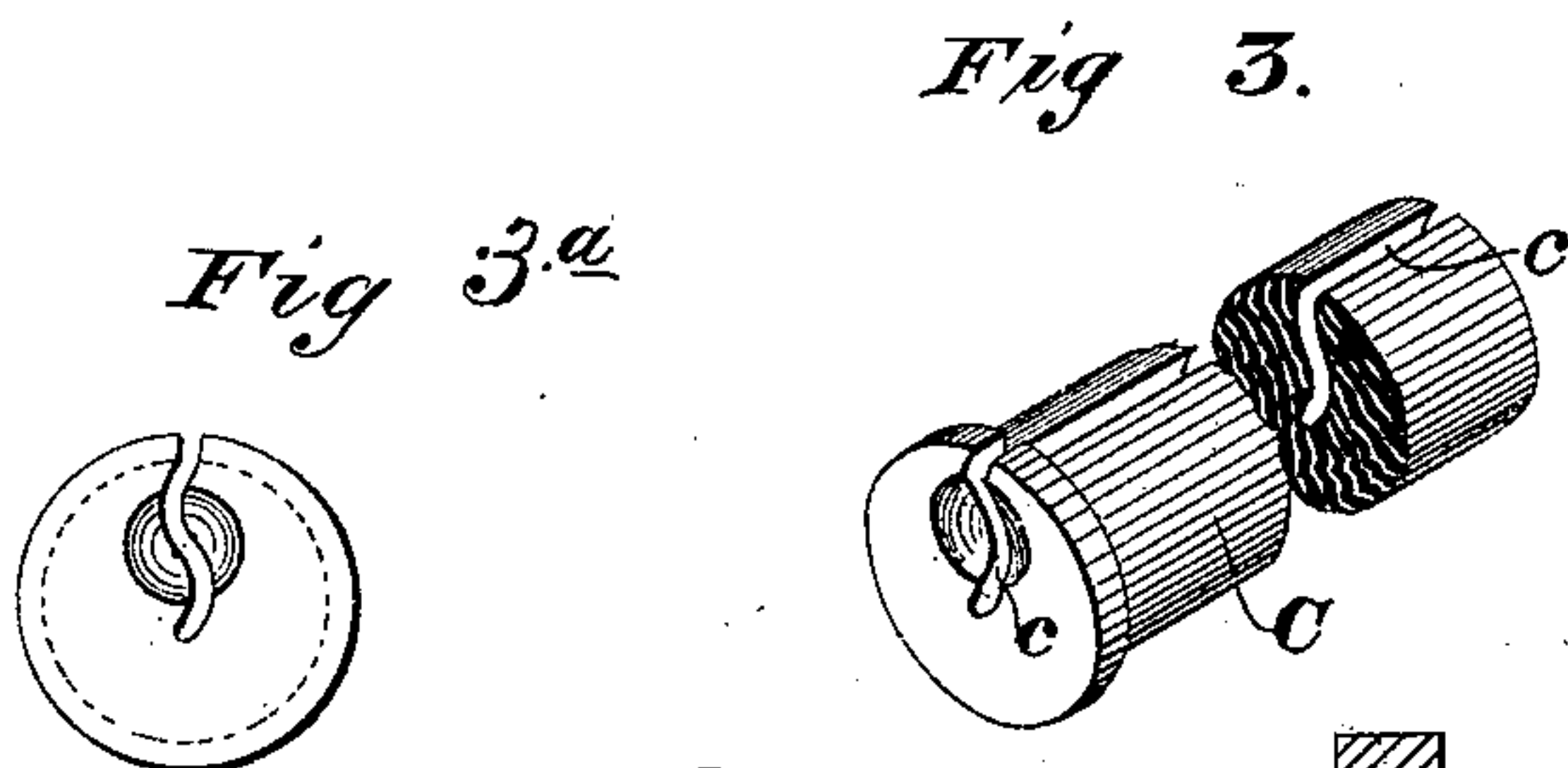
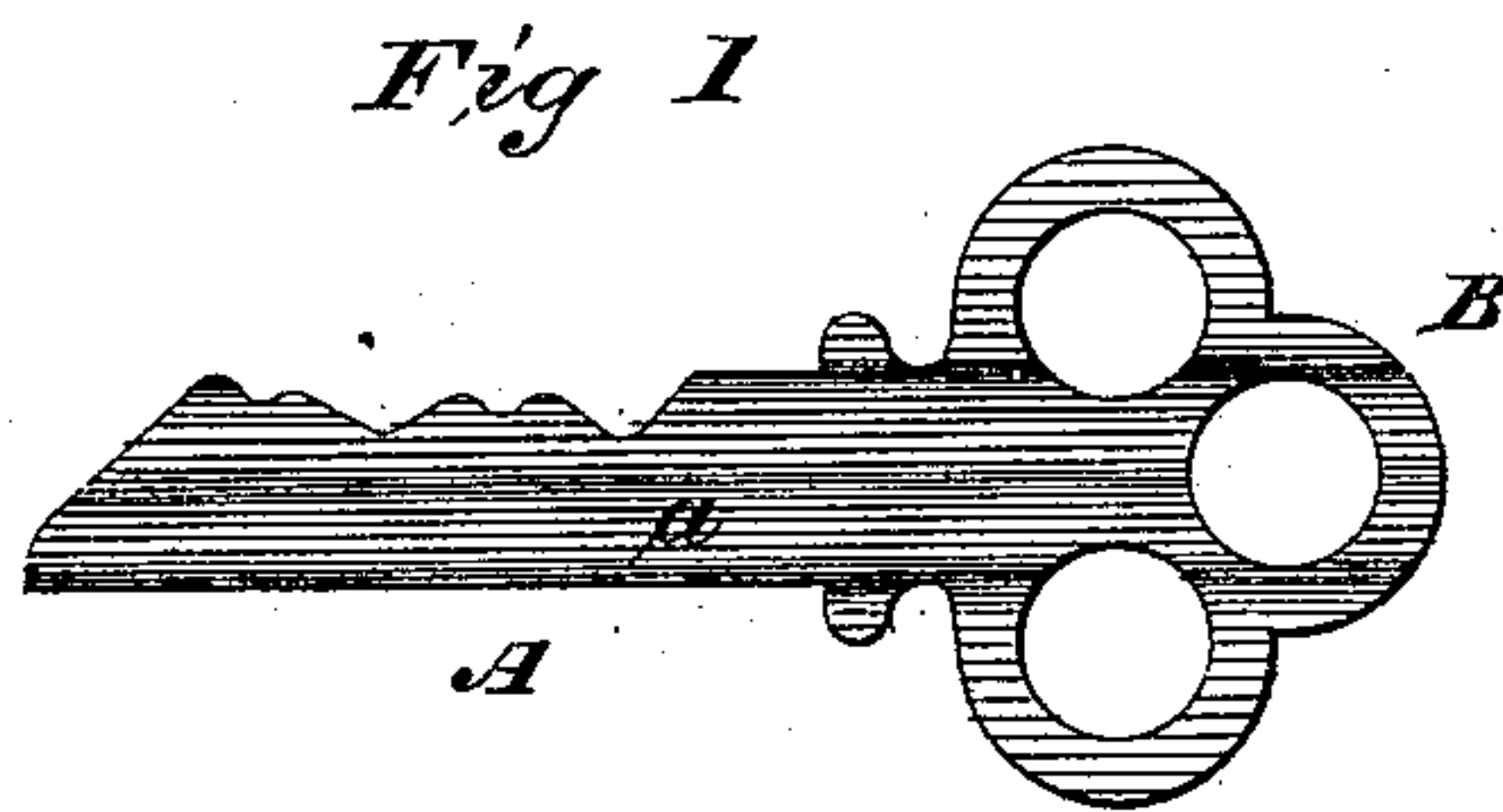
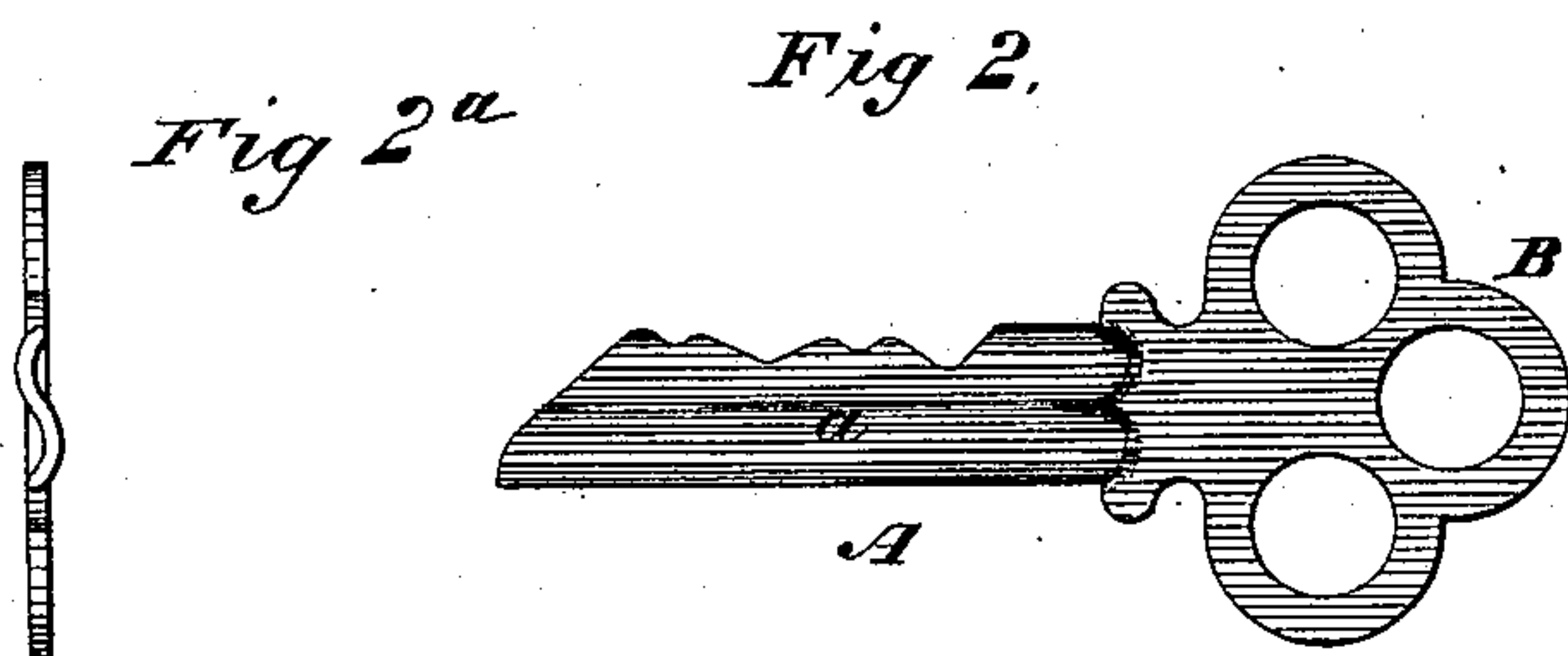
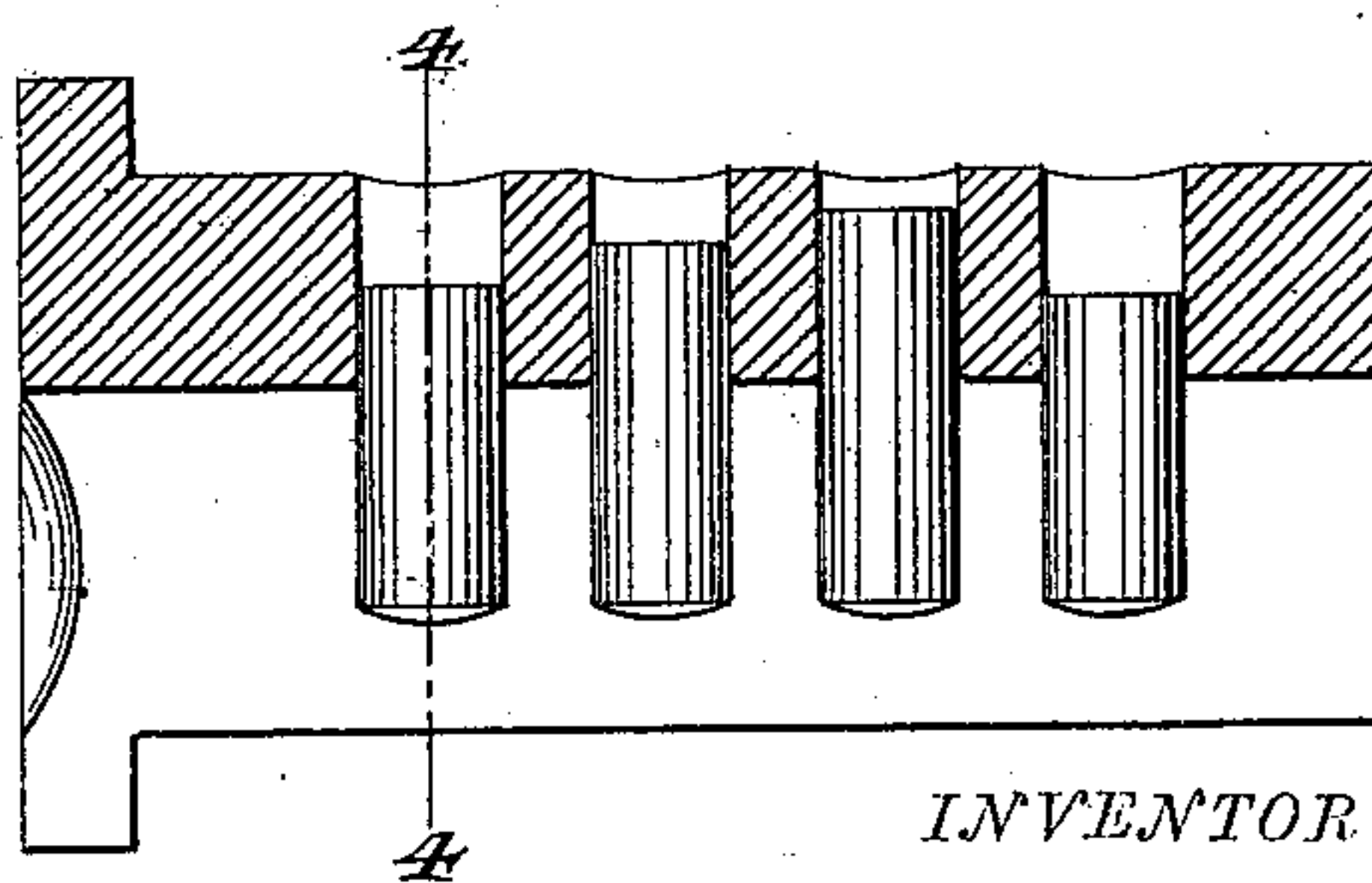


Fig 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

WARREN H. TAYLOR, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE
YALE LOCK MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. **208,863**, dated October 8, 1878; application filed
June 26, 1877.

To all whom it may concern:

Be it known that I, WARREN H. TAYLOR, of Stamford, in the county of Fairfield and State of Connecticut, have invented an Improvement in Sheet-Metal Keys, of which the following is a specification, that will enable persons skilled in the art to which my invention relates to make and use the same, reference being had to the accompanying drawings.

My invention relates to that class of locks wherein a sheet-metal key is used in combination with a key-hub or roll-back, which receives and supports the key during its rotation to operate the lock, and which also either wholly or partly contains the tumblers that are set by the key.

It consists in forming the key with longitudinal grooves or corrugations, into which the key-bits penetrate transversely, and in forming the key-slot in the hub of a shape corresponding to the particular form of key used; and in providing the hub with tumbler-recesses which enter the slot in lines not parallel with its sides.

In the drawings, Figure 1 represents a key corrugated its entire length; Fig. 2, a key with the blade and not the bow corrugated; Fig. 2^a, an end view of the key; Fig. 3, a roll-back of a "Yale night-latch," with a slot in it in outline like the key; Fig. 3^a, an end view of the same; Fig. 4, a transverse section of the same on the line 4 4 of Fig. 5, and Fig. 5 a longitudinal section on the line 5 5 of Fig. 4.

A indicates the blade, *a* the corrugations, and B the bow, of the key. C indicates the plug or roll-back, ordinarily carrying that portion of the tumblers acted on by the key, as is well understood; and *c*, its curved sinuous key-slot suitable for my corrugated plate-key.

I form my key of a single piece of sheet metal stamped or rolled into shape.

I am aware that locks with longitudinal corrugated keys of certain kinds have heretofore been made by Holmes & Butler, and also by C. C. Dickerman. In my lock I retain all the advantages obtained in either of those mentioned from the use of grooved or corrugated keys, and gain additional ones which

are peculiar to my lock and those of its class, as will be apparent to those skilled in the art.

In the lock of Dickerman above referred to, while the shape of the key-hole will render the operation of a picking-tool more difficult, it will not absolutely prevent it, whereas in my lock, owing to the length of the key-slot, and because the tumblers are distributed along its entire length, each one being separate from all the others, it will be impossible to touch all the tumblers at once with a picking-tool, and consequently extremely difficult to pick the lock. It is also clear that, as my key-slot extends the whole length of the plug, all that portion of the key which enters the plug and sets the tumblers will be rigidly held in place, which is especially desirable in locks having sliding or pin tumblers, because it is essential to the proper working of these locks that the tumblers be exactly held in position by the insertion of the key, and not raised or lowered by its tilting.

Another practical advantage of great weight resulting from this construction is peculiar to locks having sliding tumblers which are set by the edge of the key. The tumblers of all locks of this description, as now made with ordinary flat keys, bitted on the edge, are subjected to a great amount of wear by the continual rubbing of the key over the same portions of the tumblers when the key is inserted and withdrawn. As soon as any tumbler becomes sufficiently worn off the insertion of the key will, of course, fail to raise it exactly to the proper point, so that the cylinder or key-hub may be revolved to unlock the lock, and the lock must then be repaired.

Now, in my lock, as the bittings extend across the corrugations, and are of different depths, it is clear that the bittings will not be on a line, and that, as the key is inserted and withdrawn, no two bits will bear against the same point on any one tumbler. The wear on the tumbler will therefore be diminished in proportion to the increase of bearing-surface, and if, as in the drawings and in practice, it is about twice that of a lock with a perfectly flat key, the tumblers will last twice as long. This in practice is found to be of great value,

not only on account of economy, but from the fact that the bittings, being on an irregular line, will be an additional security against picking.

It should be noted that my lock and key differ from that of Holmes & Butler, in that the key is of one piece, is bitted on its side, and rotates to operate the lock; and from that of Dickerman above referred to, because the tumblers in my lock are set by the mere insertion of the key; and it differs, further, from both of them in that the bittings of the key extend into the corrugations thereof in a line transverse to the direction of the corrugations and set tumblers, which afterward revolve with the key-hub and key.

It will thus be seen that the capacity for permutation of a lock constructed on this principle, due to combining longitudinal corrugations with edge key-bits or serrations and tumblers, which extend into the corresponding hub-corrugations, by far exceeds any lock now known, and is in fact almost infinite.

In view of the locks of Holmes & Butler and Dickerman above mentioned, I do not claim, broadly, a longitudinally grooved or corrugated sheet-metal key, nor such a key when bitted upon its side; but

What I do claim, and desire to secure by Letters Patent, is—

1. The combination of a rotary sheet-metal key having longitudinal grooves or corrugations and transverse bittings extending into said corrugations, a key-hub or roll-back which is provided with a sinuous key-slot of a form corresponding to the form of the key and tumblers contained within said cylinder, which are set by the insertion of the key, and then revolve with it and the key-cylinder, substantially as described.

2. A sheet-metal key longitudinally grooved or corrugated, and bitted transversely to said corrugations, the bittings extending into the corrugations, so that the points of the contact of the key with the tumblers are not on the same line, substantially as described.

3. In a key-cylinder or roll-back, the combination of a sinuous key-slot and tumbler-recesses which enter said key-slot in a line which is not parallel to the sides of the key-slot, substantially as described.

In testimony whereof I have hereunto subscribed my name.

WARREN H. TAYLOR.

Witnesses:

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CHAS. E. VAIL.