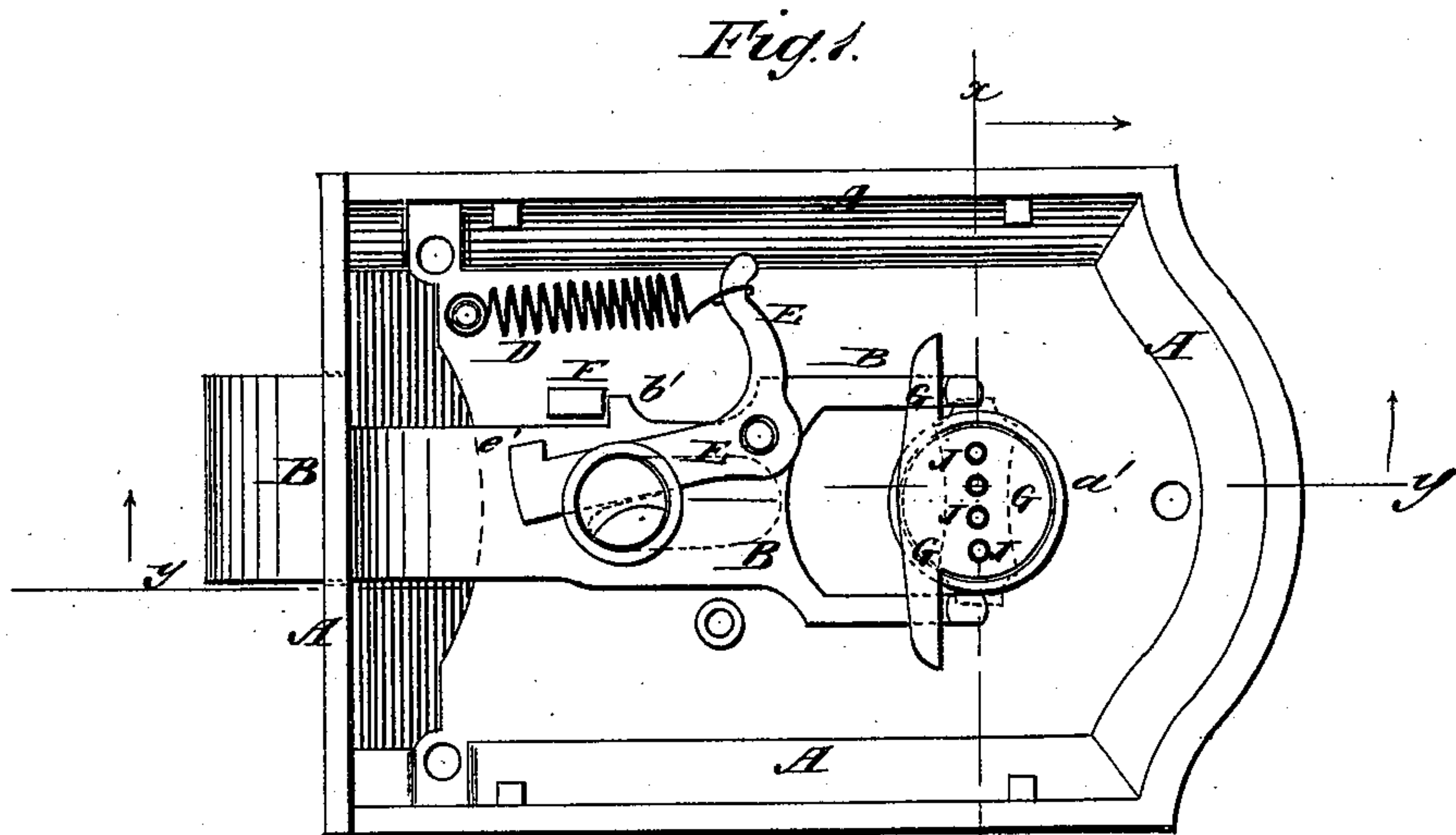


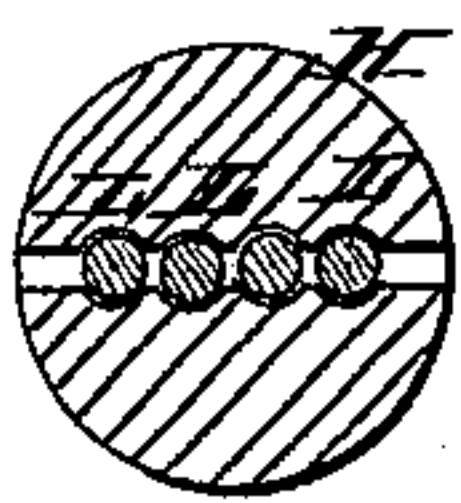
F. KEIL.  
Latch.

No. 209,815.

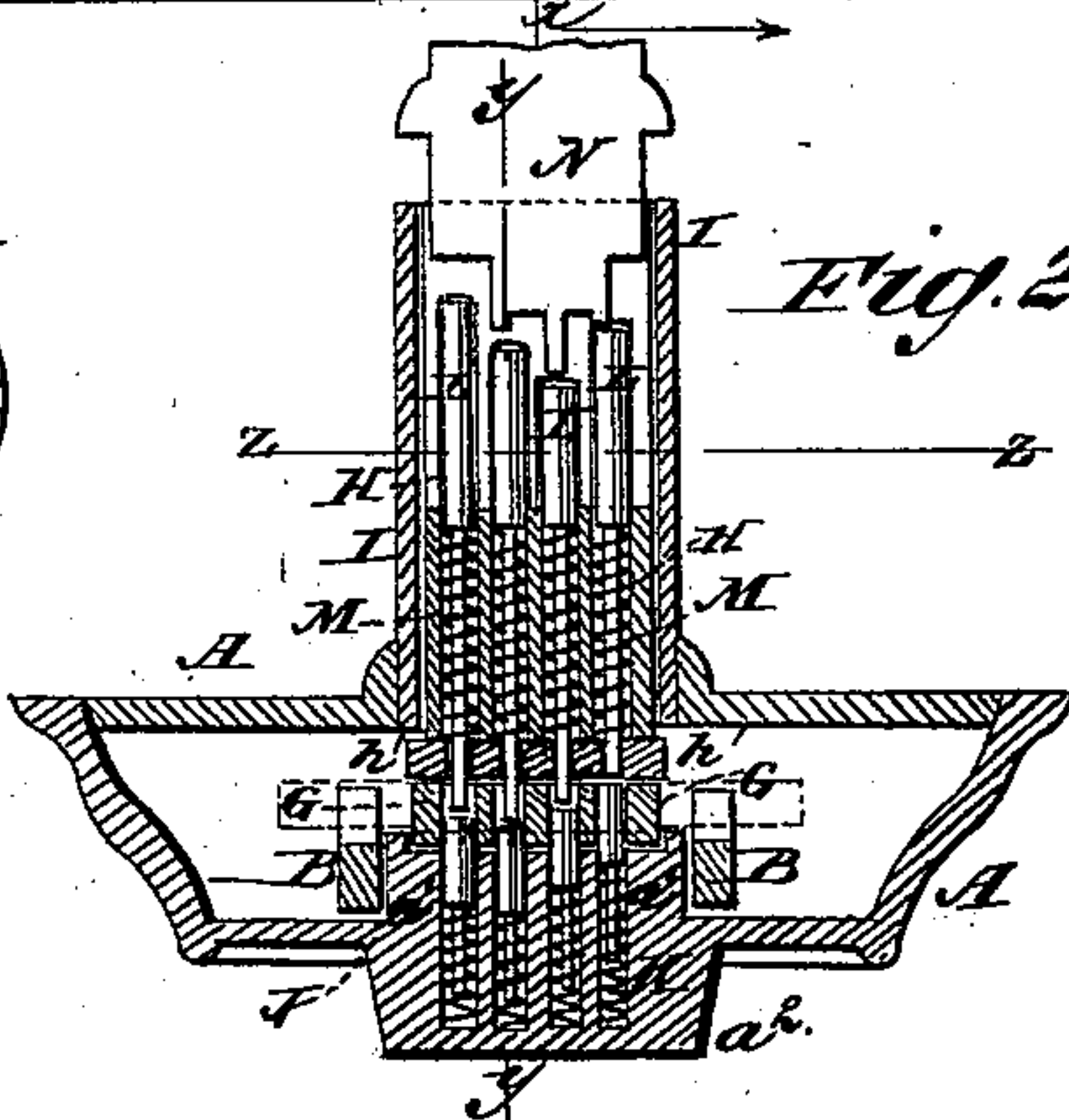
Patented Nov. 12, 1878.



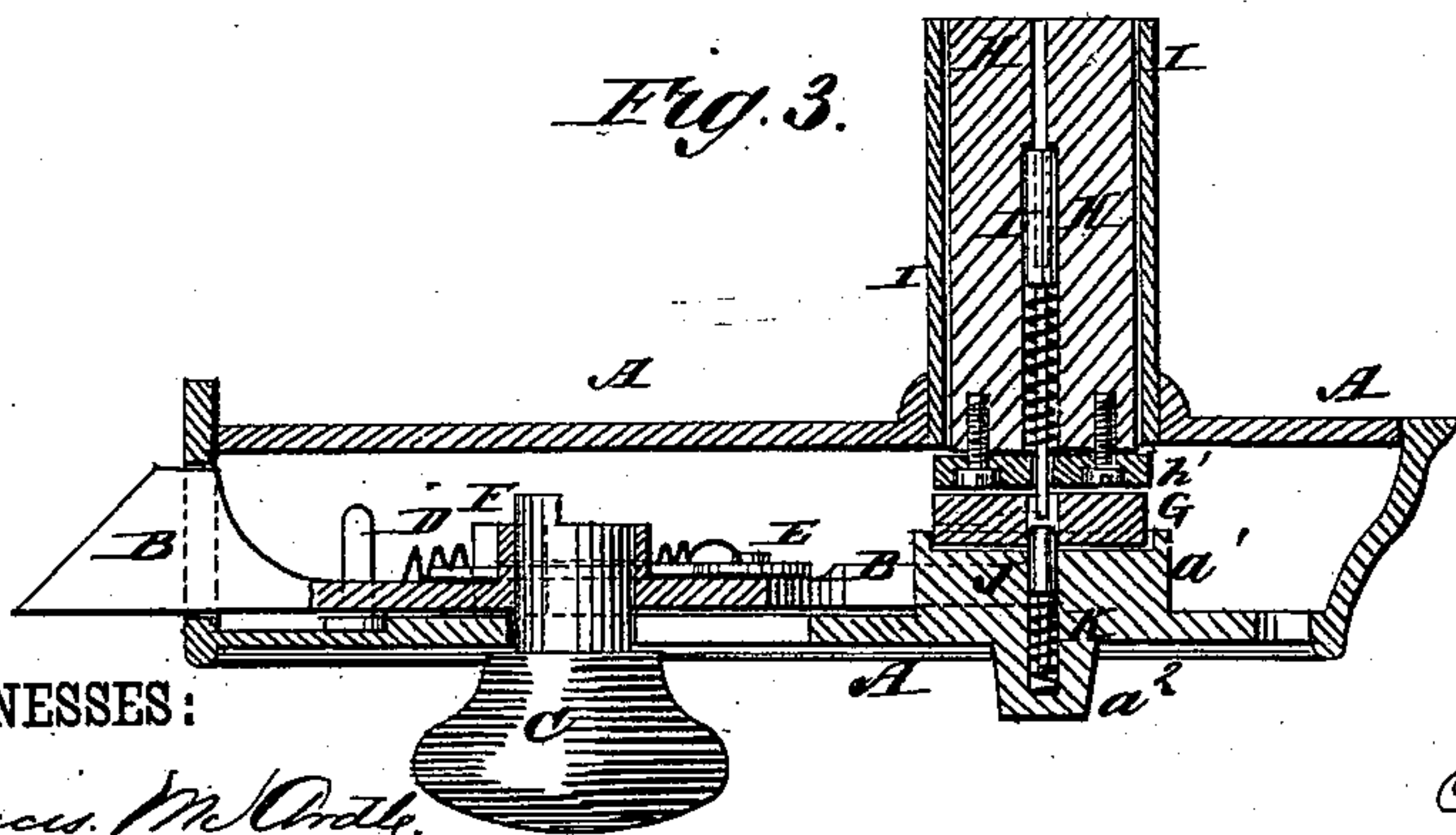
*Fig. 4.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

*Francis M. Ordly,*  
*C. Sedgwick*

INVENTOR:

*F. Keil*  
BY *Miner*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

FRANCIS KEIL, OF NEW YORK, N. Y.

## IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **209,815**, dated November 12, 1878; application filed September 7, 1878.

*To all whom it may concern:*

Be it known that I, FRANCIS KEIL, of the city, county, and State of New York, have invented a new and useful Improvement in Cylinder Latch-Locks, of which the following is a specification:

Figure 1 represents my improved lock with the inner plate and cylinder removed. Fig. 2 is a cross-section of the lock, taken through the line *x x*, Fig. 1. Fig. 3 is a longitudinal section of the lock, taken through the line *y y*, Figs. 1 and 2. Fig. 4 is a cross-section of the cylinder, taken through the line *z z*, Fig. 2.

The object of this invention is to furnish an improvement in that class of cylinder latch-locks which cannot be opened from the outside of the door without its own especial key, and which shall be simple in construction and not liable to get out of order.

The invention consists in the combination of the two sets of pins and springs, the perforated and slotted cylinder, and the key with the perforated tumbler, the latch, and the perforated case, and in the combination of the spring D, the bent lever E, provided with the projection, and the stop with the latch, the transversely-slotted stem of the knob, and the case, as hereinafter fully described.

A represents the case of the lock, which is constructed and secured to the door in the usual way. B is the latch, which works through a hole in the forward end of the case A in the usual way. The latch B is drawn back by the knob C, the stem of which passes through a slot in the case A and through a hole in the latch B. The latch B is thrown forward when the knob C is released by the spring D, one end of which is attached to the case A, and its other end is attached to the arm of the bent lever E. The lever E is pivoted at its angle to the latch B, and the edge of its other arm enters a cross-slot in the side of the stem of the knob C, so that by turning the knob C its stem will act as a cam to force the arm of the lever E outward against a stop, F, bringing a projection, *e'*, formed upon the outer side of the said arm, against the forward edge of the said stop F, and preventing the latch from being drawn back from the outside of the door, even with a key, until the knob C has been turned back.

The latch B is kept from being forced too far forward by the spring D by a projection, *b'*, formed upon it, and which strikes against the rear edge of the stop F. The inner end of the latch B is forked to pass around a cylindrical projection, *a'*, formed upon the case A, and has lugs formed upon the upper sides of the ends of its branches for the arms of the tumbler G to rest against, so that the said latch may be drawn back by turning the said tumbler G in either direction. The hub of the tumbler G rests and works in a circular recess formed in the top of the projection *a'*. Upon the top of the tumbler G rests a plate, *h'*, attached to the lower end of the cylinder H, and which is made a little larger than the said cylinder, so as to rest against the lower end of the tube I, secured in the hole in the plate of the case A through which the cylinder H passes.

J are loose pins which are placed in holes in the projection *a'* and in the projection *a''*, formed directly opposite the said projection *a'* upon the outer side of the case-plate. The inner parts of the pins J are made smaller than their outer parts, and upon the said smaller parts are placed spiral springs K, which hold the said pins up, so that their upper ends may enter corresponding holes in the tumbler G and prevent the said tumbler from being turned until all of the said pins J have been pushed down below the said tumbler G. The pins J are made of different lengths, so that they may project to different heights in the tumbler G.

In holes through the plate *h'* and in larger holes in the lower part of the cylinder H are placed pins L, the lower parts of which are made smaller to pass through the smaller holes in the plate *h'* and to receive the spiral springs M, by which the said pins are held up. The pins L are made of different lengths.

The cylinder H is slotted from its upper end in line with the holes that receive the pins L, to receive the key N, which is made with guards of different length to operate upon the pins L. With this construction, when the pins J and L and the guards of the key N all correspond in length and the said key is pressed into the slot of the cylinder H, the pins L will be forced down to such a point as to force all the pins J out of the tumbler G, so

that when the cylinder H is turned by the key N the pins L will turn the said tumbler G, drawing back the latch B and unfastening the door. With this construction the slightest variation in the lengths of the pins J or of the pins L or of the guards of the key N will make it impossible to unlock the latch, so that the latch cannot be unlocked with any other key than the one belonging to that particular lock. This construction also allows an unlimited number of locks to be made, none of which can be unlocked with any other key than the one made expressly for it.

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

1. The combination of the pins and springs J K, the pins and springs L M, the perforated and slotted cylinder H, and the key N with the perforated tumbler G, the latch B, and the perforated projection in the case A, substantially as herein shown and described.

2. The combination of the spring D, the bent lever E, provided with the projection *e'*, and the stop F with the latch B, the transversely-slotted stem of the knob C, and the case A, substantially as herein shown and described.

FRANCIS KEIL.

Witnesses:

JAMES T. GRAHAM,  
C. SEDGWICK.