

W. Denney,

Lock.

N^o 19,628.

Patented Mar. 16, 1858.

Fig: 3.

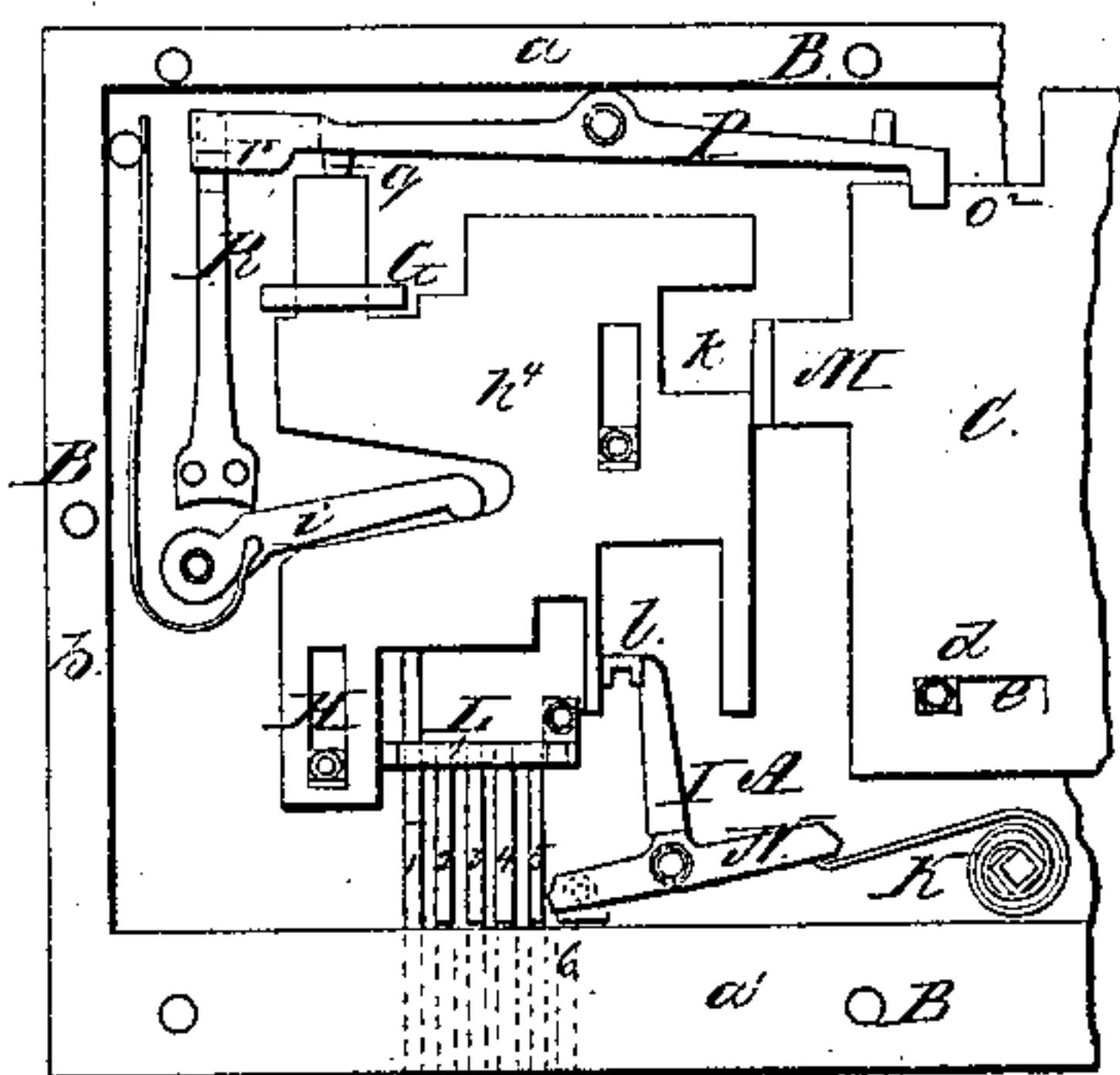


Fig: 6.

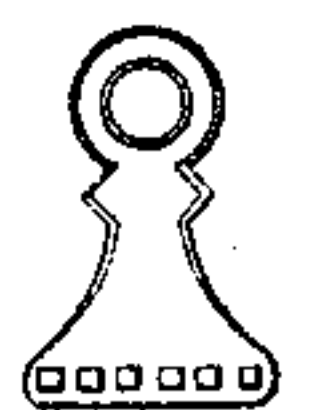


Fig: 7.



Fig: 8.



Fig: 9.



Fig: 4.

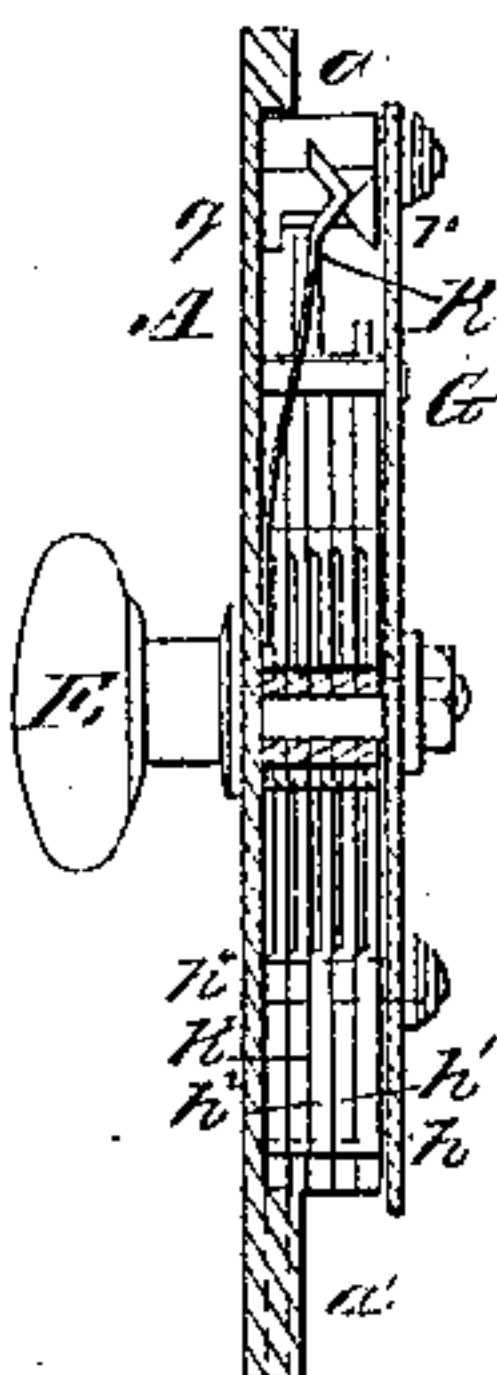


Fig: 1.

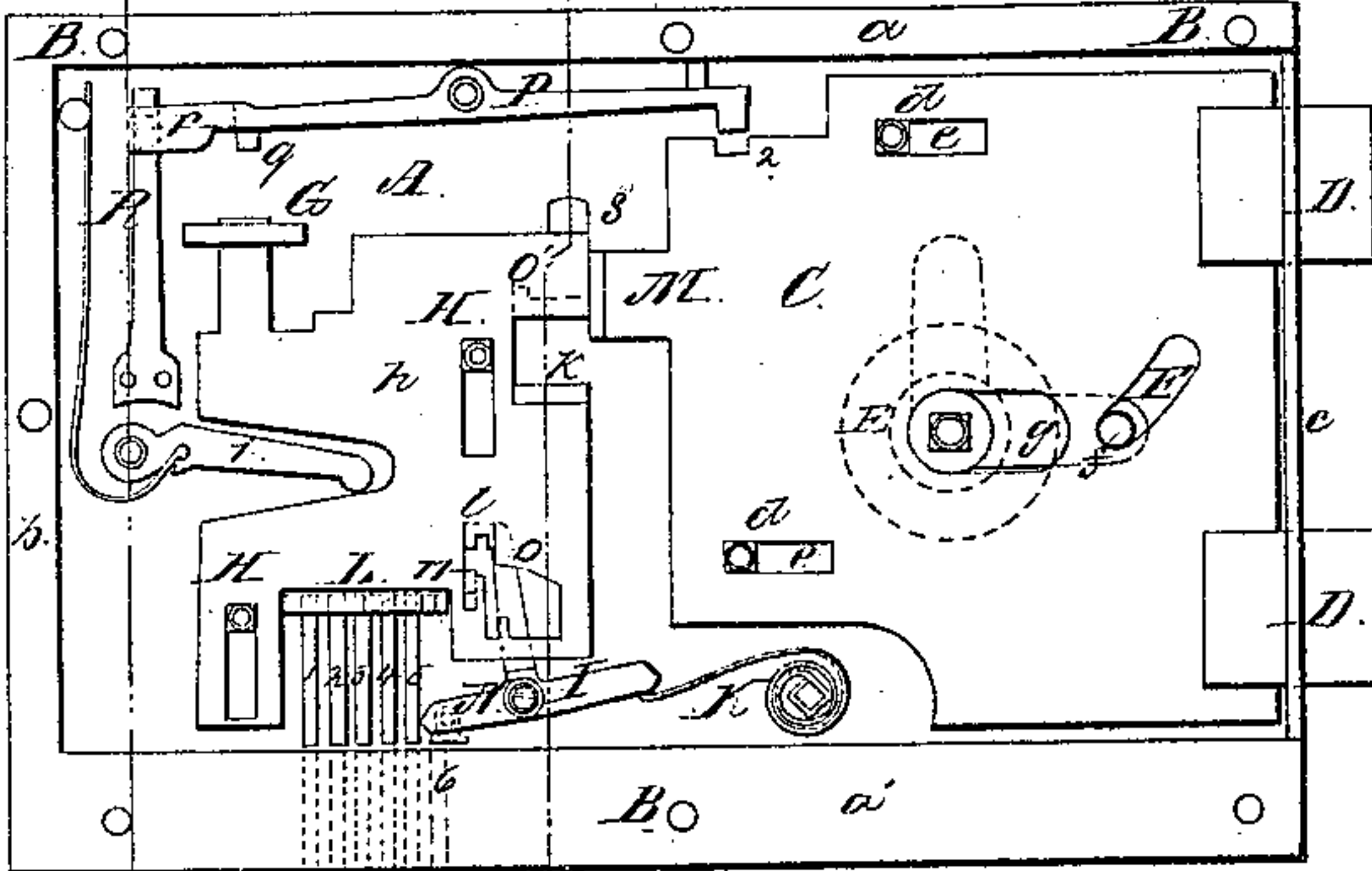


Fig: 2.

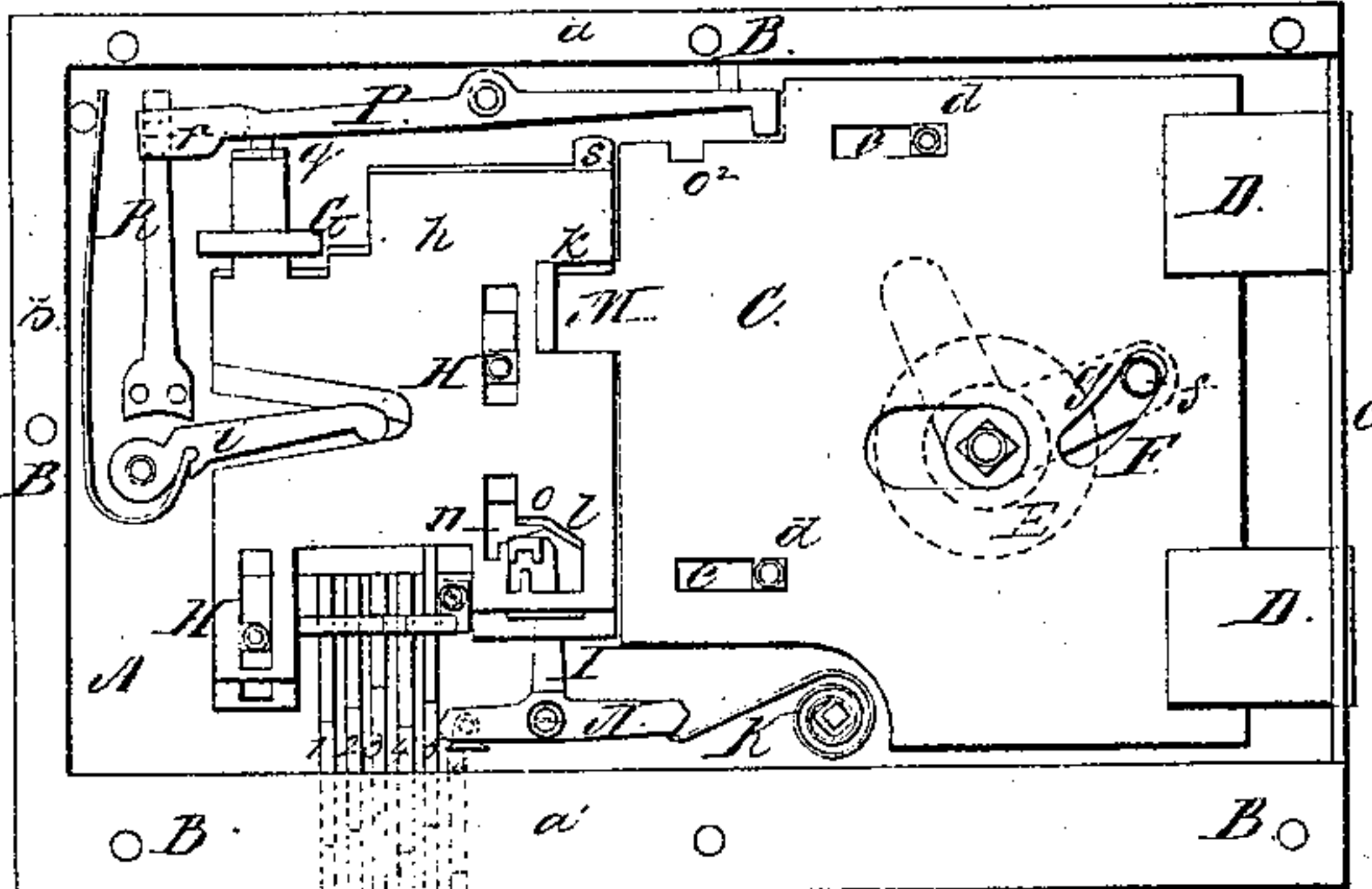
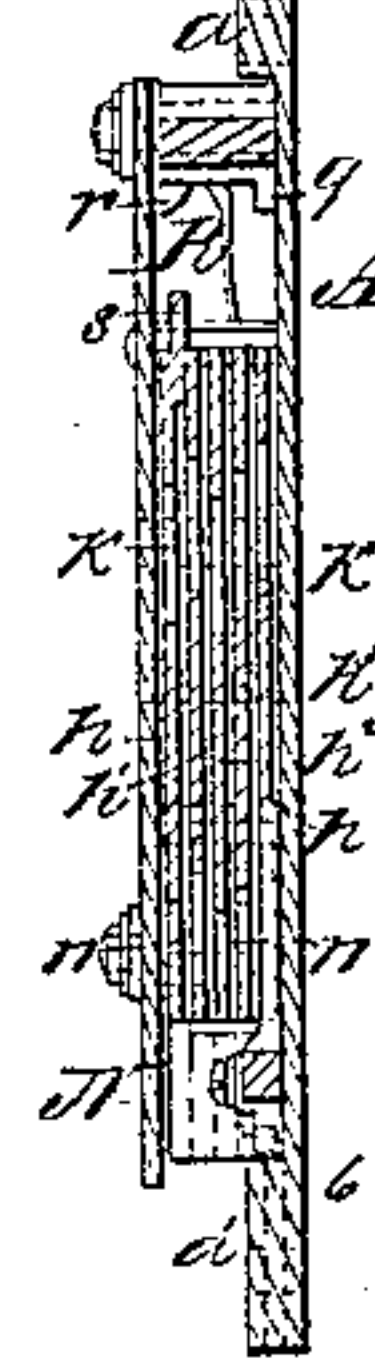


Fig: 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM DENNEY, OF PHILADELPHIA, PENNSYLVANIA.

LOCK.

Specification of Letters Patent No. 19,628, dated March 16, 1858.

To all whom it may concern:

Be it known that I, WILLIAM DENNEY, of the city of Philadelphia and State of Pennsylvania, have invented new and useful
5 Improvements in Powder and Burglar Proof Locks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this
10 specification, and in which the same letters of reference allude to similar parts throughout the several views.

Figure 1 is a plan of my improved lock,
15 with the back of the casing removed for the purpose of showing the positions of the interior parts in the locked state; Fig. 2 is a similar plan, representing the positions of the same parts in an unlocked condition; Fig. 3 is a partial plan of the lock, showing
20 the bottom tumbler in its connection with other parts; Fig. 4 is a sectional end view of the lock at the line 1—2, Fig. 1. Fig. 5 is also a sectional end view at the line 3—4,
25 Fig. 1. Figs. 6 and 7 show the key for my improved lock, and Figs. 8 and 9 are views of a supplementary key, the use of which will be hereafter described.

A is the front plate of the casing, to which
30 are attached the side pieces *a*, *a'*, and the end pieces *b*, *c*. The holes B, B serve for securing the lock to the door. The plate C is provided with two bolts D, D, sliding in the end piece *c*. It is further guided by the
35 stationary pins *d*, *d*, in corresponding oblong slots *e*, *e*, and receives its motion from the knob E by means of a pin *f* on the follower *g*, which pin works in a diagonal groove F, the sides of which form inclined
40 planes for the pin to act upon.

h, *h'*, *h*², *h*³, *h*⁴ are tumblers, which slide at right angles to the motion of bolts D, D, being guided by the guard G and the stationary pins H, H. These tumblers are operated upon and receive the impression of
45 the key by means of slides 1, 2, 3, 4, 5, which move in a guard L and are provided with square extensions, fitted closely to corresponding apertures in the bottom piece *a'*
50 of the casing. The slide 6, which is also actuated by the key, operates a T shaped lever I for a purpose hereafter described.

i, *i* are springs in connection with the tumblers, serving to hold the latter in the proper position for the key to act upon
55 them, when the lock is locked. The spring

K operates in a similar manner and for the same purpose the T shaped lever I and its slide 6.

The tumblers are provided with recesses
60 *h*, which are made to correspond in width and depth with the projection M on the bolt plate C, and occupy such relative positions, that the action of the key will bring them all in a line and to the exact point required
65 to allow the entrance of the projection M.

The lever I works on a pin N and bears on the inside of front-plate A of the casing. Its longest arm is provided with a grooved extension *l*, which plays in peculiarly shaped
70 openings in the tumblers *h*, *h'*, *h*², *h*³, and which, while at rest in the position shown at Fig. 1, prevents the taking of measurements for the proper length of square projections *m*, *m*, on the key. On reference to Fig. 1 it
75 will be seen, that, if a pointed instrument be brought to act upon anyone of the slides 2, 3, 4, 5, it can only move it with its respective tumbler so far, until the points *n*, *n*, strike the bottom of the groove in *l*, which
80 will be found to vary from the position required for the withdrawing of bolts D, D. The lever I is of further importance in its action in combination with the key, which will be easily understood from Fig. 2. In
85 this view the tumblers are shown in the position imparted to them by the introduction of the key while the grooved extension *l* was made to change its position in the manner shown, it being operated upon by the slide
90 6, in such a manner, that when the slides 1, 2, 3, 4, 5, have arranged and moved their tumblers to a required point, the slide 6 will so act upon the lever I, as to cause its extension *l* to pass between the points *n* and *o* of
95 the tumblers, whereupon the latter are at liberty to be further moved the required distance for the admission of projection M in the recesses *h*, *h*. It will be easily seen, that any instrument with the slightest variation
100 from the length of the square projections *m*, *m* of the key would not bring about the above operation and thus prevent the unlocking of the bolts. Upon unlocking the lock and withdrawing the key, one or more
105 of the tumblers may be allowed a slight backward motion, by being provided with notches *o'* (Fig. 1). These notches are made to correspond with the upright portion of the projection M of the bolt plate C, and by
110 their action prevent the flying out of the bolts.

The bottom tumbler h^4 (shown at Fig. 3) is not, like the others, limited in its motion by the lever I, but will by the action of any pointed instrument in the hands of the burglar be pushed beyond the distance required for the proper position of its recess h , whereupon it is brought to act upon a projection q on the detector P, causing the opposite end of the latter to enter a notch o^2 in the bolt plate C, whereupon all his further attempts for picking the lock will be fruitless. The V shaped end of the spring R bears against an angular face r on the detector P and serves to hold it in its place, both when thrown in or when out of action. When the detector P has been thrown in as described above, the ordinary key will be found insufficient to unlock the lock, and for such cases is provided the supplementary key (Figs. 8 and 9). It differs from the regular key in one of the square projections which in the former is made movable. Upon the introduction of this key into the lock, the movable projection r' is pushed in as shown in dotted lines at Fig. 9, and by thus moving the tumbler h beyond its regular limit, it brings its projection s in contact with the detector P, and by forcing the latter to the position shown at Fig. 1, again liberates the bolt plate C. It will be seen,

that any attempt to push back the slide 5 and its tumbler h independent of the others and without operating the lever I, will be fruitless, as the projection l of the latter will retard the motion of the tumbler, before its projection s comes in contact with the detector P. 35

Having now described the nature of my invention, I wish it to be understood, that I do not desire to confine myself to the shape of the tumblers in every minutia, nor to any particular number of the same; I also do not claim the use of the detector P exclusively, as similar contrivances have been made use of before, but 45

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

1. The employment of the lever I in combination with the tumblers, the whole being constructed and operating substantially as set forth. 50

2. The combination of the detector P with one of the tumblers in the manner shown.

3. The described employment of the supplementary key for the purpose of releasing the boltplate from the detector. 55

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Witnesses:

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