

W. RAETHER.

Pad-Lock.

No. 168,669.

Patented Oct. 11, 1875.

Fig: 1.

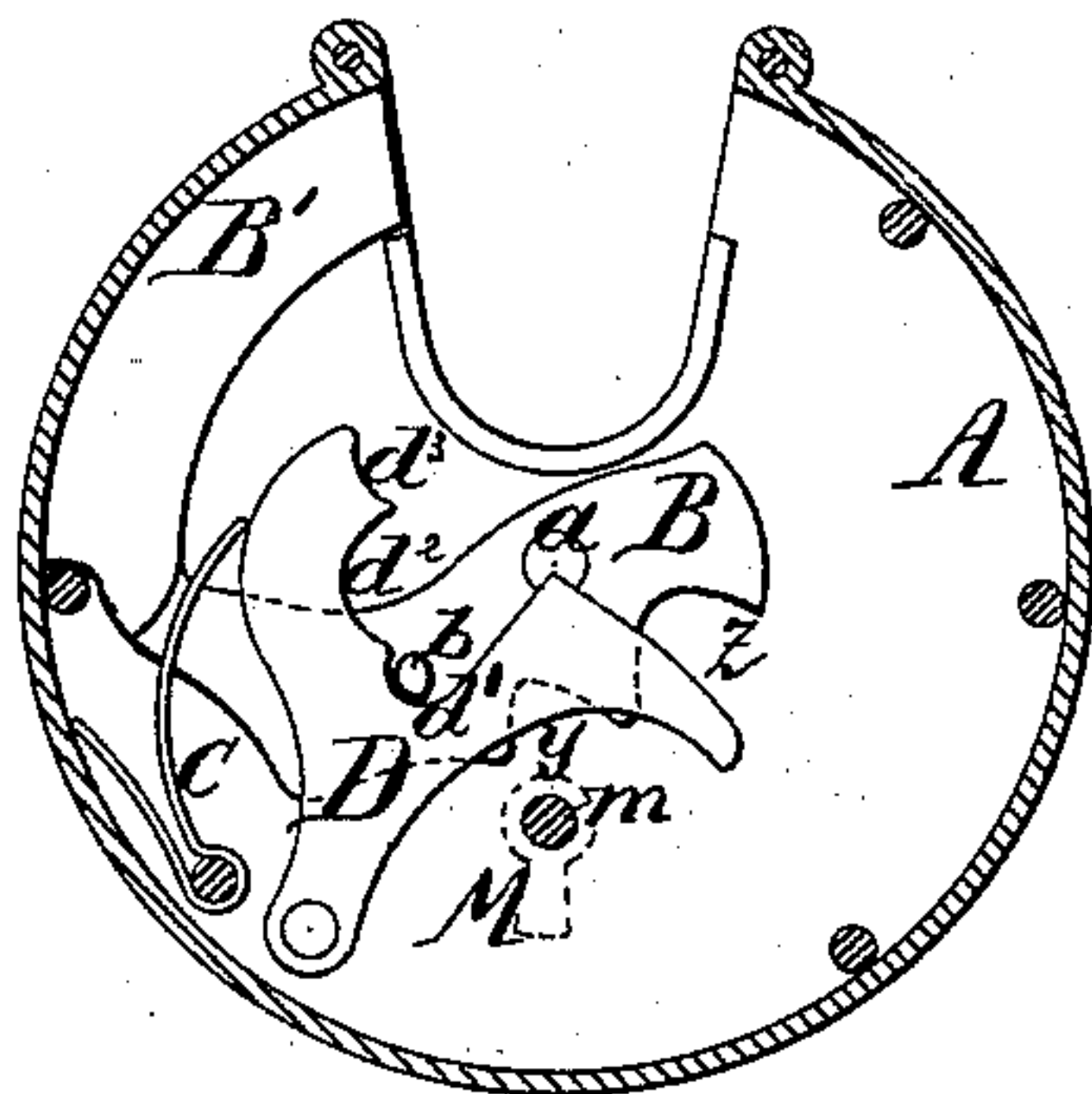


Fig: 3.

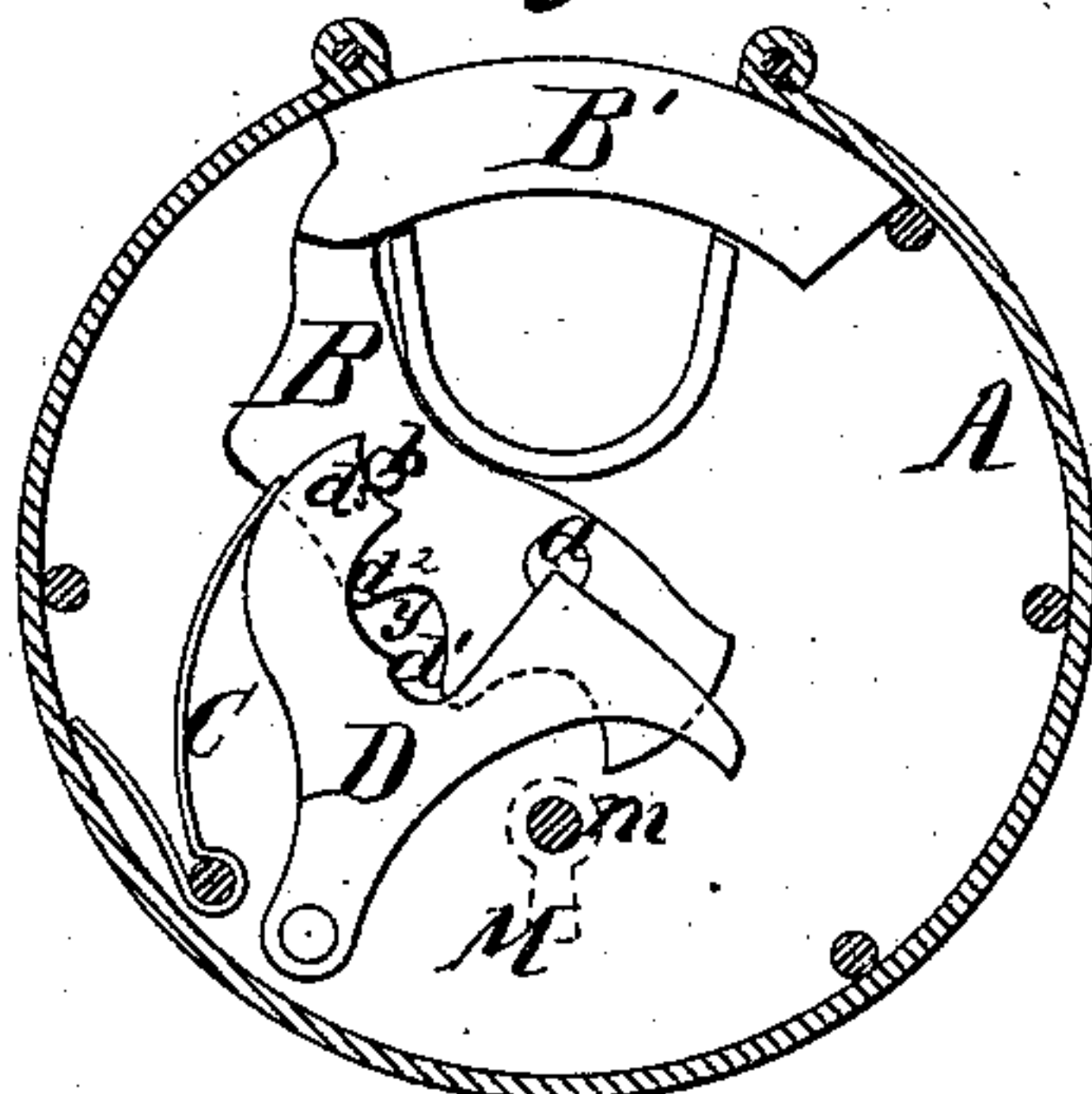
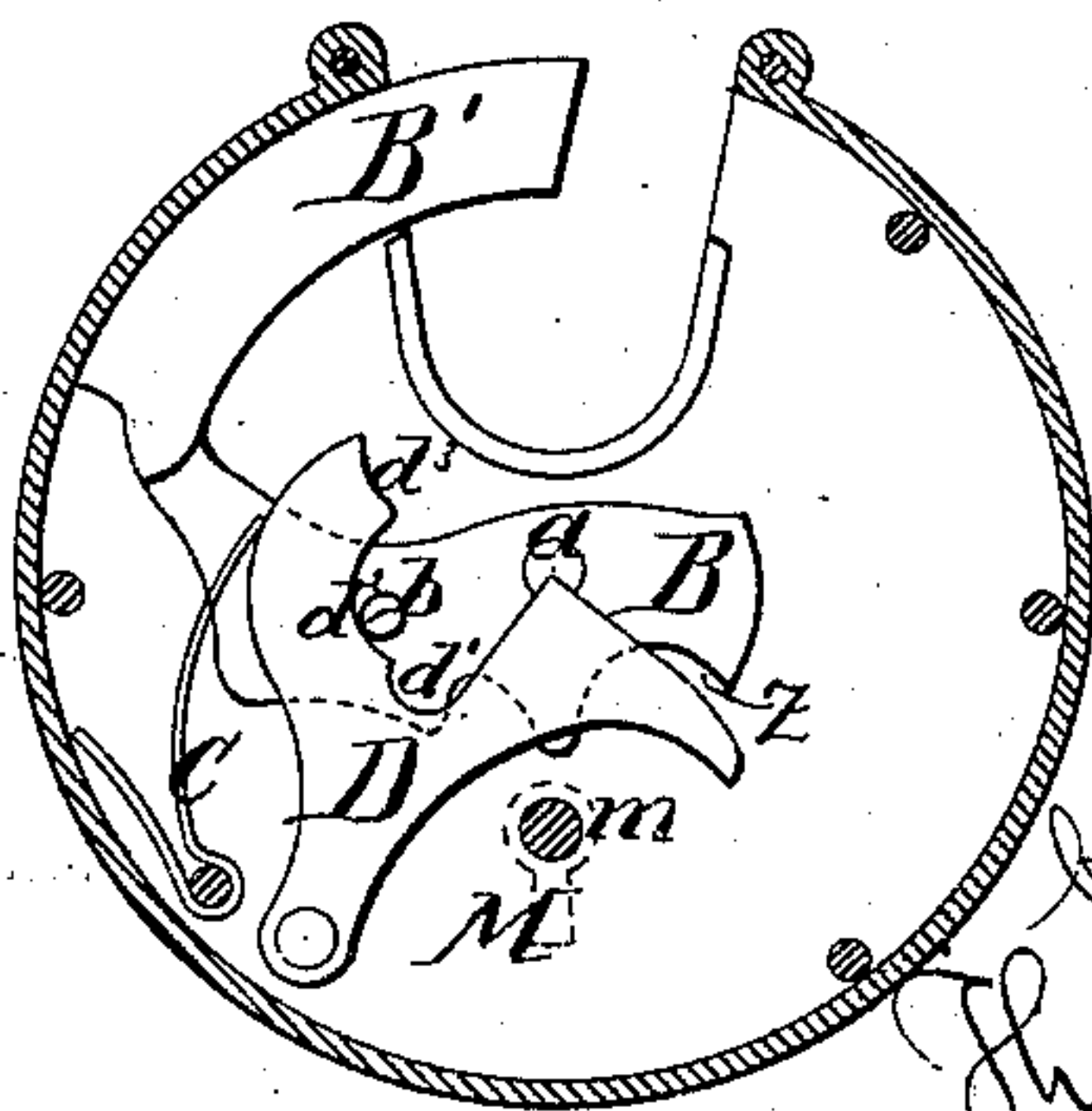


Fig: 2.



Witnesses:
J. K. Oulahan
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Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM RAETHER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PADLOCKS.

Specification forming part of Letters Patent No. 168,669, dated October 11, 1875; application filed August 21, 1875.

To all whom it may concern:

Be it known that I, WILLIAM RAETHER, of Brooklyn, in the county of Kings, in the State of New York, have invented certain new and useful Improvements relating to Padlocks, of which the following is a specification:

My lock combines the advantages for strength and facility of movement due to the bolt being thrown in two semi-movements by two turns of the key, with the compactness and convenience due to the hasp being inside the case. My bolt is also peculiarly secured against being displaced while the padlock is moved about in an unlocked condition.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying the invention into effect. Each figure shows the works, with the face-plate removed.

Figure 1 is a view with the padlock in an unlocked condition. In this condition the bolt is firmly held drawn back. Fig. 2 is a view with the padlock half locked, or half unlocked. This position will never be long maintained, but in it also the bolt is firmly held; and Fig. 3 shows the padlock fully locked, and with the bolt again firmly held.

Similar letters of reference indicate like parts in all the figures.

A is the external shell or casing, of a general circular form, with a deep notch in one side. This notch receives the staple (not represented) on which the padlock is to be locked, when required. B' is a curved piece, of proper strength, which constitutes the bolt. The part B' is formed in one piece, with an extended flat part, B, which is mounted to oscillate, when in the act of being locked or unlocked, on the stout pin *a*, set in the center of the casing A. A key-hole, M, and a key-pin, *m*, are located below the pin *a*, and the under side of the part B is formed with two notches, *y z*, adapted to receive the action of the key in succession, as the key (not shown) is turned twice around on the key-pin *m*. Two of the rivet-bosses are properly located to serve as stops, to prevent too great a movement of the bolt B'. On one face of the part B is a pin, *b*, which performs important func-

tions in connection with a tumbler, D, which is mounted to rub on the same face of B, and is impelled by the spring C toward the key-pin *m*. The tumbler D is formed with a deep compound notch or series of partially-coinciding notches, marked, respectively, d^1 , d^2 , and d^3 . The notch d^1 is the deepest, and receives the pin *b*, when the padlock is fully unlocked. The notch d^2 is less deep, and receives the pin *b* when the bolt B is half thrown—that is to say, when the key has made only one revolution, and the padlock is half locked. The notch d^3 is quite shallow, but deep enough to aid in keeping all the parts undisturbed, except by the proper key, when the padlock is fully locked. The notch d^3 always receives and holds the pin *b* when the padlock is locked.

In all the positions the proper notch in the tumbler D engages with and holds the bolt until the tumbler is lifted by the key.

The bolt B' has no spring, and is without any tendency to turn in either direction. It is held by the friction of the tumbler D on its front face, and by the engagement of its pin *b* with the proper notch in the tumbler in all positions, except when being turned by the action of the key in its successive engagements in the notches *y* and *z*.

The operation is as follows: To lock the padlock, place the staple, chain, bar, or whatever it is to lock to, in the notch in the side, and, inserting the key in the key-hole M, give it one turn to the left, which will half throw the bolt, and then, continuing the same motion of the key, give it another turn to the left, which will complete the throw of the bolt, and leave the padlock safely locked, as shown in Fig. 2.

More than one tumbler D may be employed, if desired, in any case, and will, of course, give greater security against picking; but I esteem one tumbler, as here shown, preferable for general use, making it of such strength that no violence likely to be applied can force back the bolt when it is in either its fully-locked or half-locked position.

To unlock the padlock, the proper turning of the key first frees the pin *b* by moving the tumbler D, and then, as before, gives the bolt an easy and partial throw, but in the opposite

direction to the first. A second turn of the key leaves the pin *b* resting in the deepest notch *d*¹, as at first, and the bolt *B'* is now fully drawn back.

I claim as my invention—

The padlock described, having the tumbler *D*, with the three notches *d*¹ *d*² *d*³ engaging successively with the pin in the bolt, in combination with the bolt *B B'* *b*, turning on the center *a*, and traversed across the notch in

the casing *A* by two semi-movements, as herein specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM RAETHER.

Witnesses:

CHAS. C. STETSON,

JOHN K. OULAHAN.