

PADLOCK.

No. 318,537.

Patented May 26, 1885.

Fig 1.

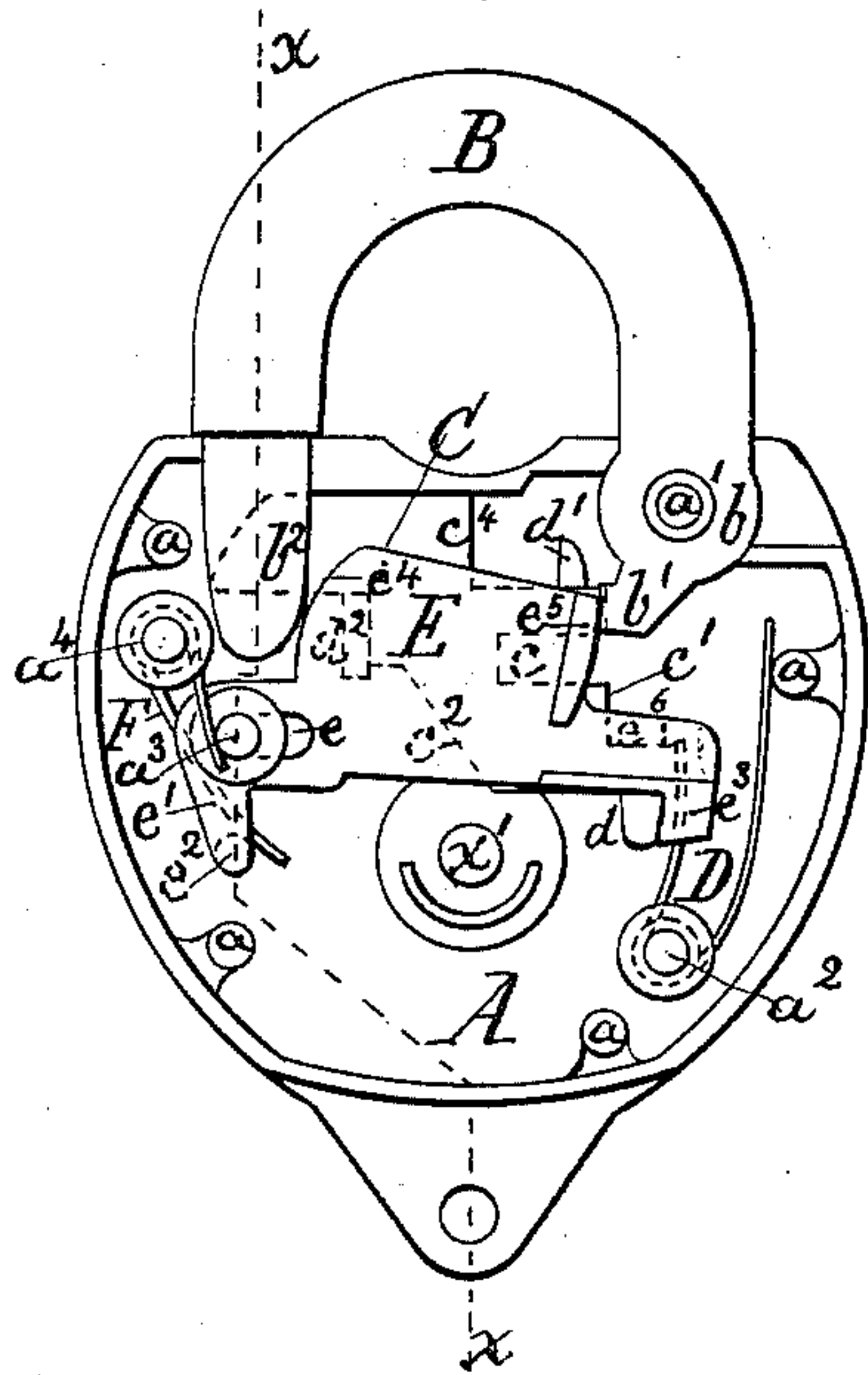


Fig 2.

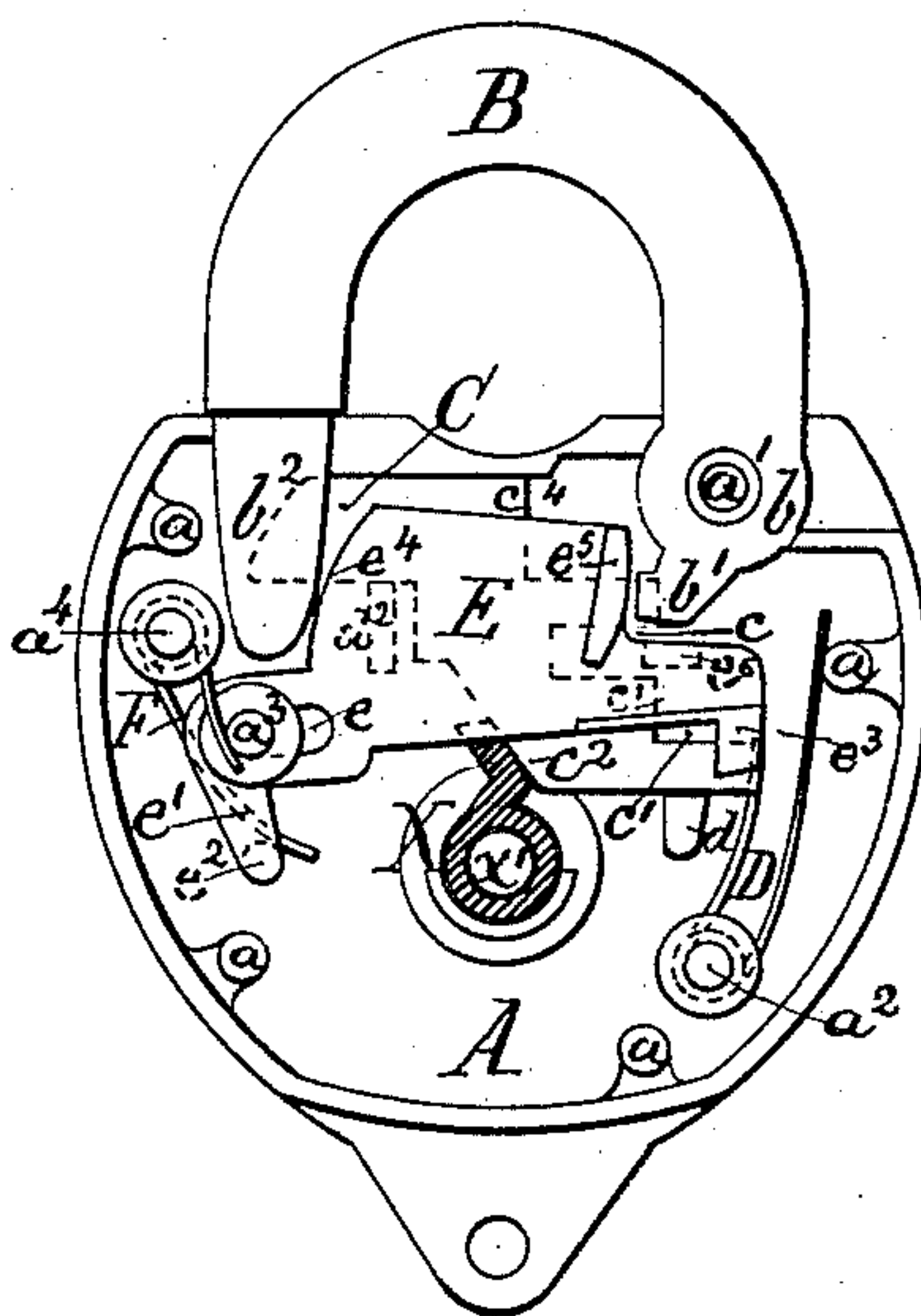


Fig 3.

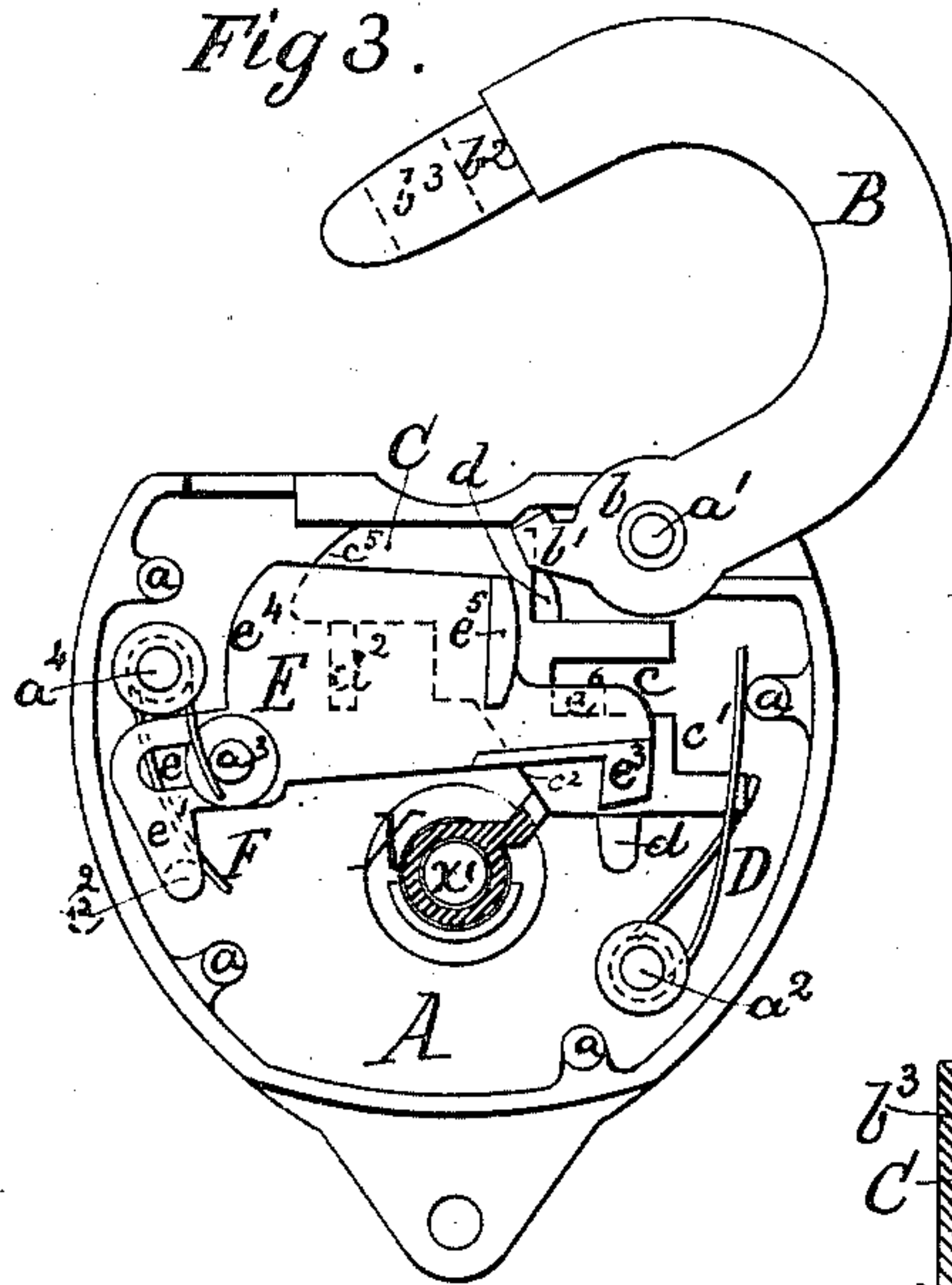


Fig 4.

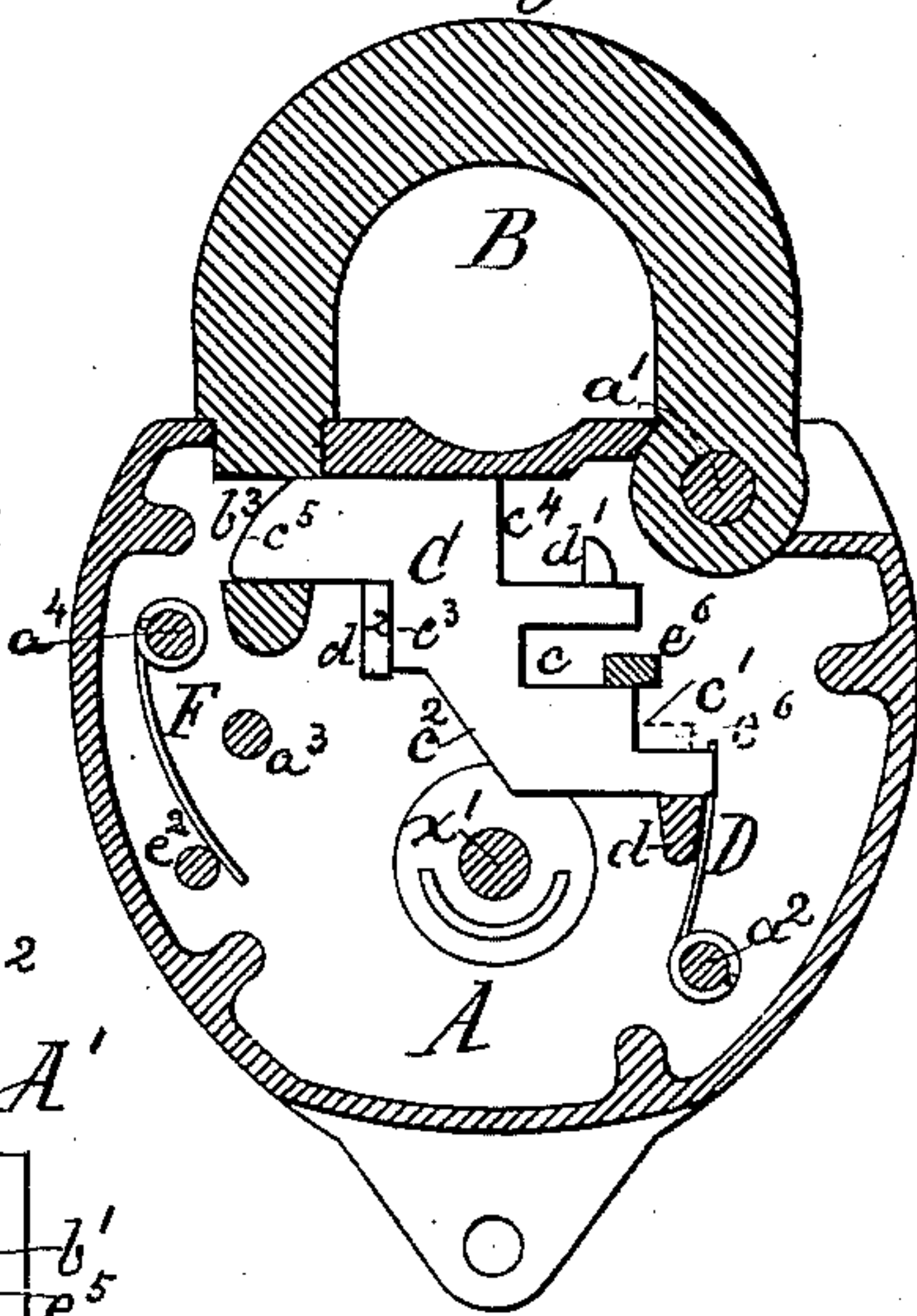
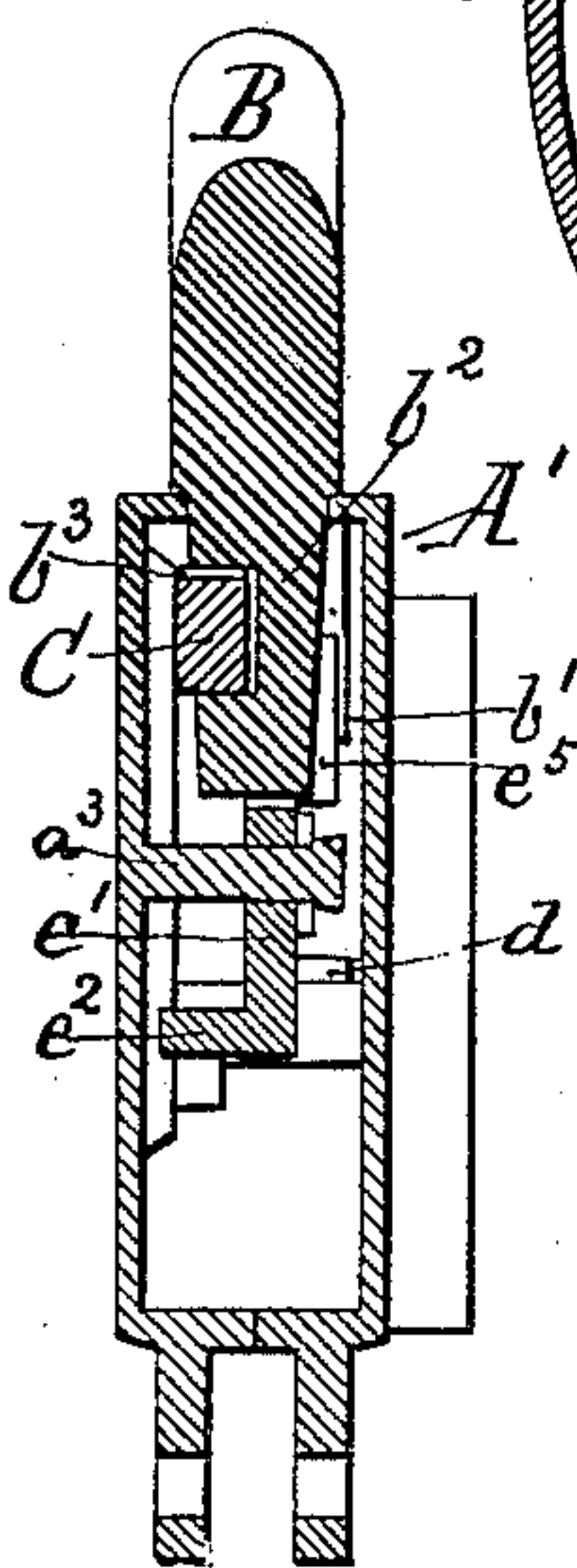


Fig5.



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PADLOCK.

SPECIFICATION forming part of Letters Patent No. 318,537, dated May 26, 1885.

Application filed February 24, 1885. (Model.)

To all whom it may concern:

Be it known that I, WILSON BOHANNAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Padlock, of which the following is a specification.

My invention relates to padlocks with swinging shackles and interlocking spring-bolts and tumblers, the construction and operation of which will be fully described, and the constituent parts of the several improvements therein specifically claimed.

In the accompanying drawings, Figure 1 is a side view of one of my improved locks as applied to a padlock, the face or cap plate being removed in order to exhibit the mechanism, the shackle being locked. Fig. 2 is a similar view showing the tumbler after it has performed its first stage of operation, and showing the key in section, as will be described. Fig. 3 is a face view showing the tumbler in its second stage of operation, the spring-bolt withdrawn from the shackle, the shackle thrown out, and the key in section. Fig. 4 is a horizontal section of the lock at a line between the tumbler and spring-bolt, showing the shackle locked by the bolt; and Fig. 5 is a transverse section in the line $x x$ of Fig. 1.

The padlock represented in the drawings has two suitable hollow shells, $A A'$, of similar construction, except that the shell A has the usual riveting-pins, a , formed on it, whereby its mate or cap section A' is fitted and fastened to it in the usual way, and also that the said shell A has all the studs, posts, and guides used in connection with the locking mechanism formed on it, and that the shell A' is provided with the key-hole and guard, as usual.

Upon a pin, a' , of the shell A a shackle, B , is fitted, this shackle being of the usual form, except that its hub b is provided with a lug, b' , the function of which will be described hereinafter. The locking portion b^2 of the shackle is provided with an ordinary locking-notch, b^3 , into which a spring-bolt, C , enters, and thus locks the shackle. This spring-bolt is provided with a rear slot, c , and step c' , and a slope, c^2 , upon which latter the key X bears when unlocking the shackle. The locking portion of the bolt C is provided with an upper

slope, c^3 , over which the locking portion b^2 of the shackle slides when the shackle is pressed down into the lock. A spring, D , on a stud, a^2 , of the shell A bears against the rear end of the spring-bolt C , and thus moves it into the notch b^3 of the shackle and keeps it there. The bolt C moves between guide-posts $d d'$ of the shell A , and a step, c^3 , of the bolt bears against the post d^2 , and thus in co-operation with the spring D holds it in its normal position. Another step, c^4 , of the bolt C comes in contact with the post d' when the shackle is unlocked, and thus the back stroke of the bolt is properly limited, and undue motion of the bolt by other means than a fitting key of the lock is guarded against. Over the bolt C a tumbler, E , is placed, which, by means of a slot, e , is pivoted to a stud, a^3 , of the shell A . This tumbler E is provided with an angular arm, e' , which terminates with a transverse pin, e^2 . A tension-spring, F , on a stud, a^4 , of the shell A bears upon the rear portion of the pin e^2 in such manner that the swinging end of the tumbler is held down upon the post d , and at the same time the tumbler is drawn forward. A hook, e^3 , on the swinging end of the tumbler bears against the post d , and thus prevents the tumbler from being moved out of its normal position by the spring F . A curved slope, e^4 , of the tumbler E serves as a bearing-surface against the locking portion of the shackle, and a raised lug, e^5 , of said tumbler forms in its normal position a check to any undue motion of such tumbler by bearing against the lug b' of the shackle, as seen in Fig. 1. Near the hook e^3 an inwardly-extending lug, e^6 , is provided on the tumbler, which lug, in its normal position, occupies the step c' of the bolt, and thus prevents undue movement of the same, as will be seen. At a nearly central position the shell A is provided with a suitable center pin, x' , for the key X , which operates the mechanism of the lock. When the shackle is locked, the bolt C occupies the notch b^3 of the shackle, as shown in Fig. 4. Its step c^3 bears against the post d^2 , and its step c' rests against the inwardly-extending lug e^6 of the tumbler E , as shown in Figs. 1 and 4 by dotted lines. The tumbler E occupies the position shown in Fig. 1, its rear hook, e^3 , bearing against the post d , and its raised lug e^5 bearing against the lug b' of the shackle,

and its curved slope e^4 bearing on the locking portion b^2 of the shackle. Thus the bolt C is locked between the post d^2 and tumbler-lug e^6 , and the tumbler is locked between the shackle portion b^2 and lug b' . When the shackle is to be unlocked, the key X is inserted into the lock by means of the pin x' , as usual, and is turned partly around, whereupon the portion opposite the tumbler E lifts the same, as seen in Fig. 2, until the hook e^3 is out of engagement with the post d , and the lug e^6 out of range of the step e' , as shown by dotted lines in said figure. When the tumbler has been lifted thus far, the portion of the key X opposite the bolt C comes in contact with the slope e^2 of the same, as seen in Fig. 2, and the bolt is moved out of the notch or slot b^3 of the shackle, and the shackle is set free. During this operation of the bolt C the key X releases the tumbler E, which now swings on the pin a^3 until its lug e^6 settles down upon the bottom portion of the slot c of the bolt. As soon as the bolt C has left the slot b^3 of the shackle, the locking portion b^2 of the same is pushed up by the curved slope e^4 of the tumbler and the force of the spring F, as illustrated in Fig. 3. The tumbler E is during this operation pushed toward the pin a^3 until the end of slot e arrives at the said pin, and thus the raised lug e^6 is moved out of range of the lug b' of the shackle B, which latter is now free to swing out of the lock. The key X will now release the bolt C, which is immediately pushed into its normal position by the spring D. In the ordinary manner of unlocking, the tumbler E and bolt C are released by the key X in quick succession, so that the start given to the shackle by the tumbler is immediately followed by the upward thrust of the slope e^5 of the returning bolt C. Thus before the returning bolt can re-enter the slot b^3 of the shackle, the shackle is already moved sufficiently out of locking-range by the above described operation of the tumbler E, and if the thrust of the tumbler upon the shackle should be not sufficient to

swing the shackle entirely out of the lock the following thrust of the bolt C always accomplishes this result. The key X is not required for locking the shackle, as it is only necessary to press the shackle down into the lock. By doing so the bolt C is pushed back until the slot b^3 has arrived in range with it when the bolt enters it. Shortly before this the locking portion b^2 descends upon the slope e^4 of the tumbler, which is thereby returned to its normal position, its hook e^3 becoming again engaged with the post d , as seen in Fig. 1. The function of the spring F is a double one—it serves to pull the tumbler along its slot e and to swing it around the pin a^3 , for the reason that the pin e^2 , against which it bears, is placed out of line of the guiding-slot e .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a padlock, the combination of a spring-acted bolt, C, a self-locking spring-acted tumbler, E, having a raised lug, e^6 , and a shackle, B, having a lug, b' , and locking portion, b^2 , said portion and lug being adapted to engage and hold the tumbler, substantially as and for the purpose described.

2. In a padlock, the shackle B, provided with a projection, b' , at its rear end, in combination with the bolt C and a spring-acted swinging and sliding tumbler, E, substantially as described.

3. In a padlock, a shackle having a projection, b' , on its rear end, in combination with a swinging and sliding tumbler, E, engaging said projection, and having a slotted portion, $e e'$, at one end, and a hook, e^3 , at the other end, a post, d , on the shell A, adapted to engage said hook and the spring-bolt C, whereby the tumbler E after having been raised to the proper height, can only be made to clear said post and projection by being moved forward, substantially as described.

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Witnesses:

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