

F. SOLEY.

PADLOCK.

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956,212.

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Fig. 1

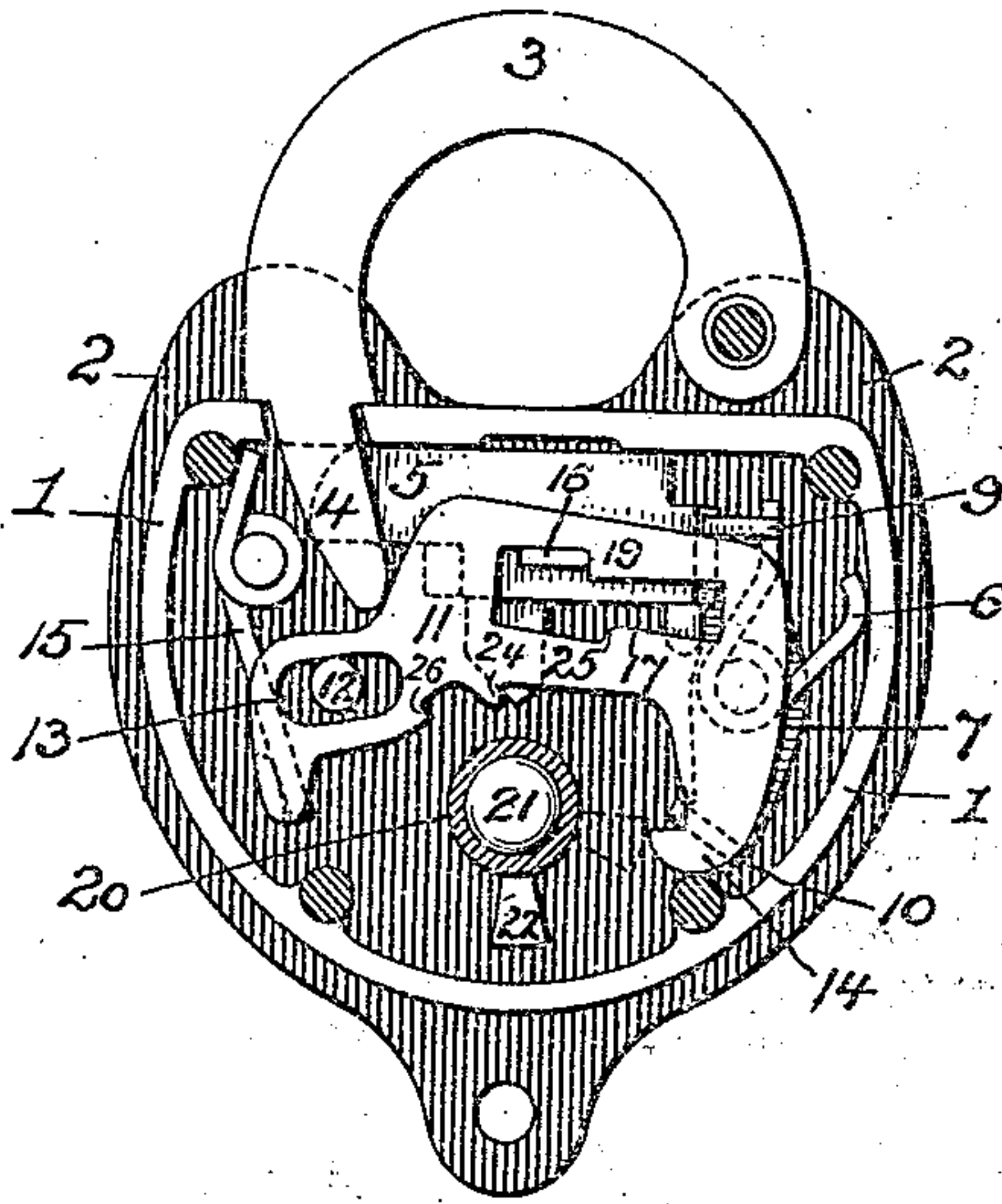


Fig. 5.

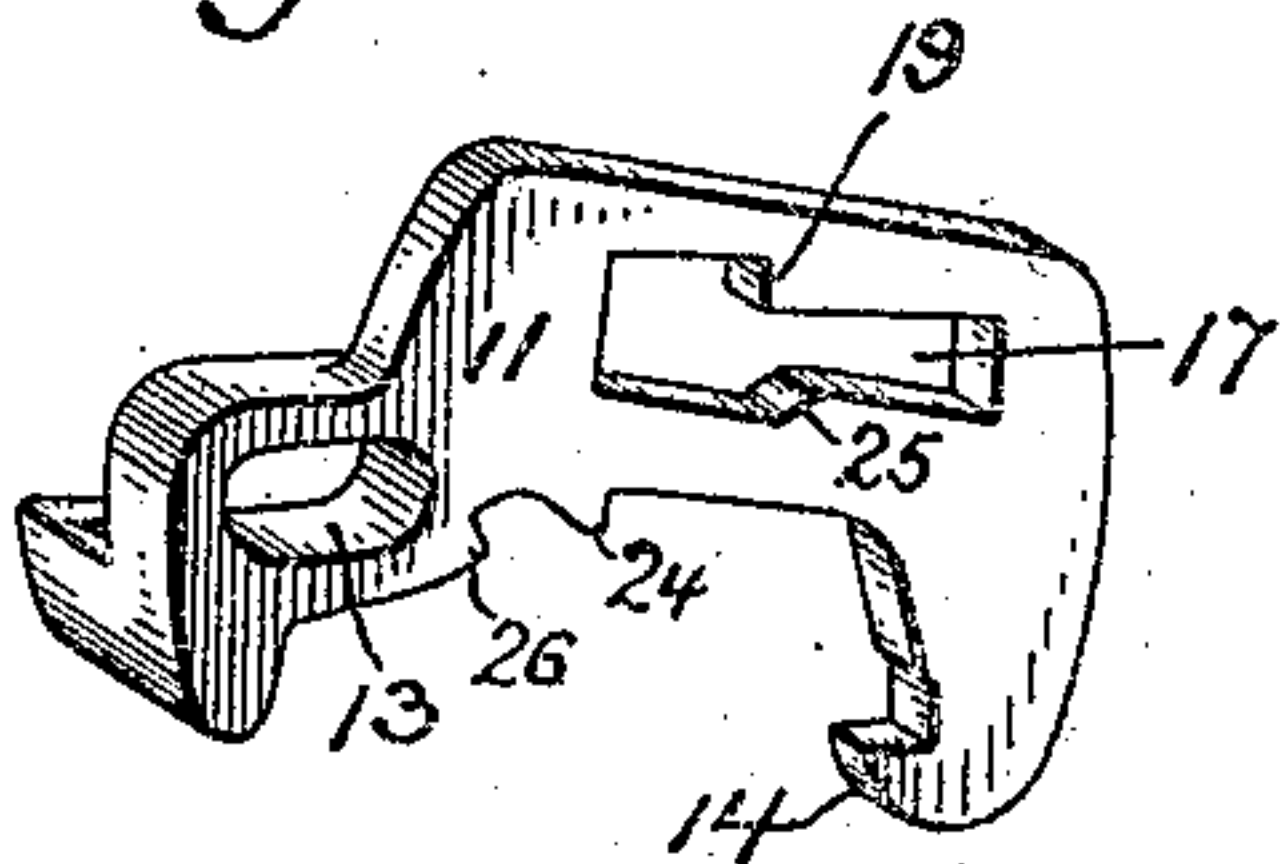


Fig. 6.

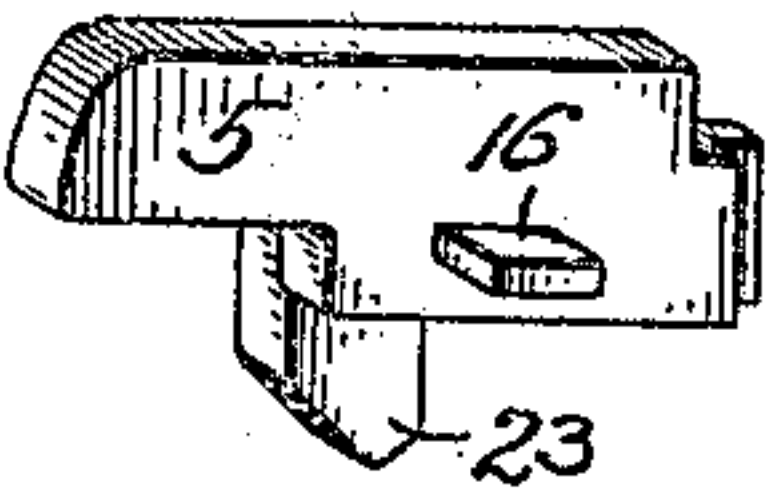


Fig. 7.

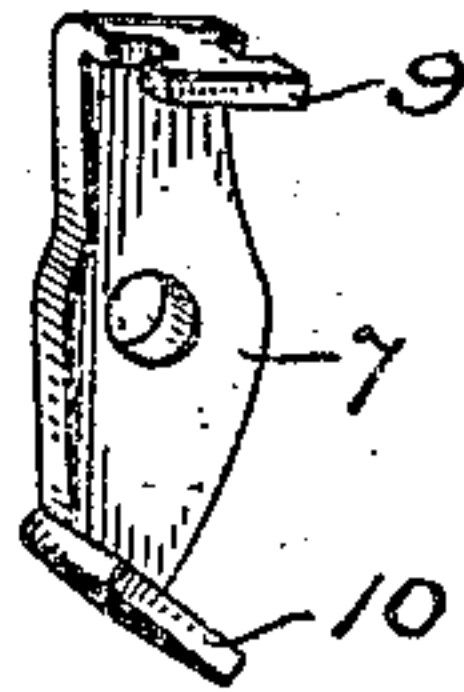


Fig. 2.

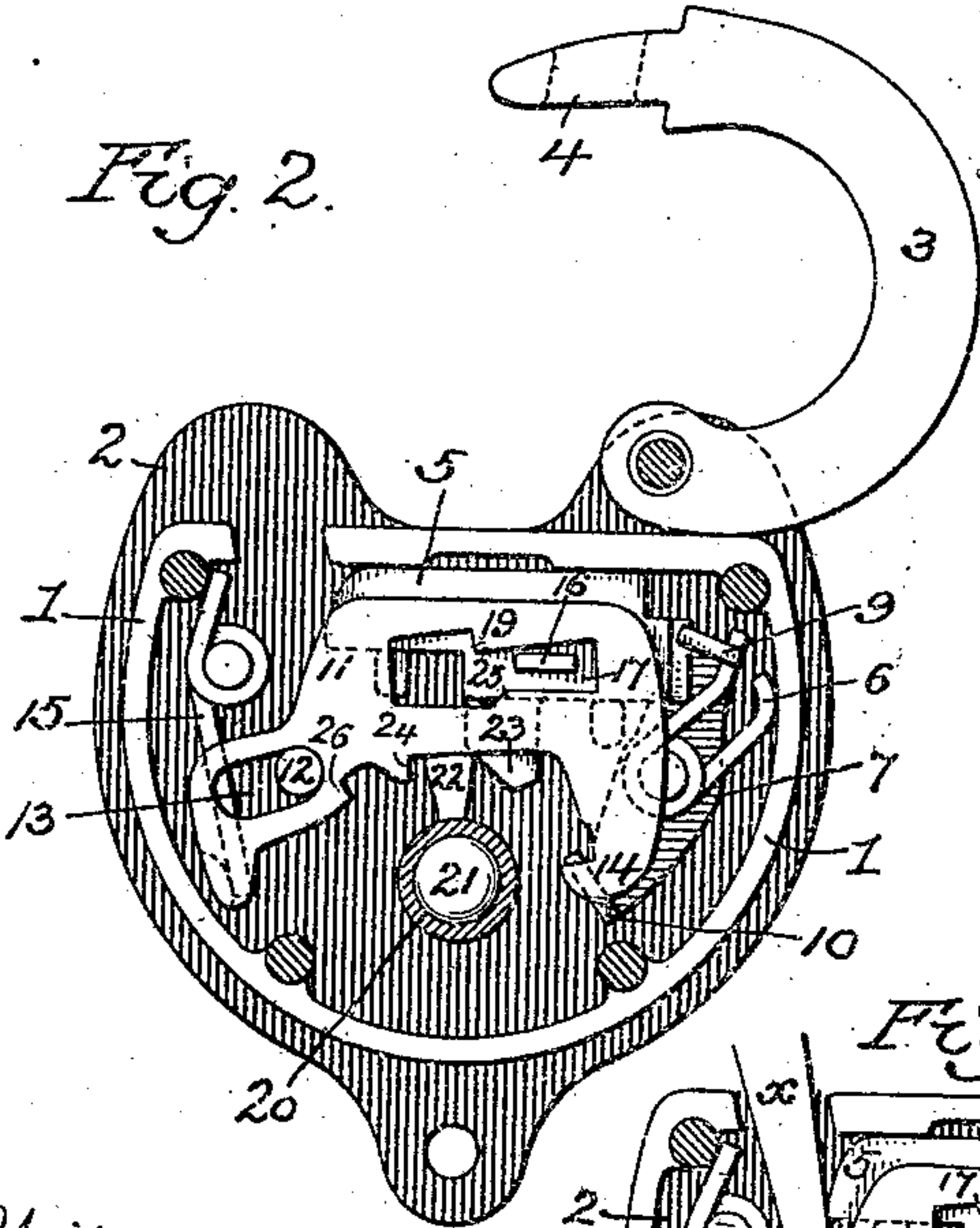


Fig. 3.

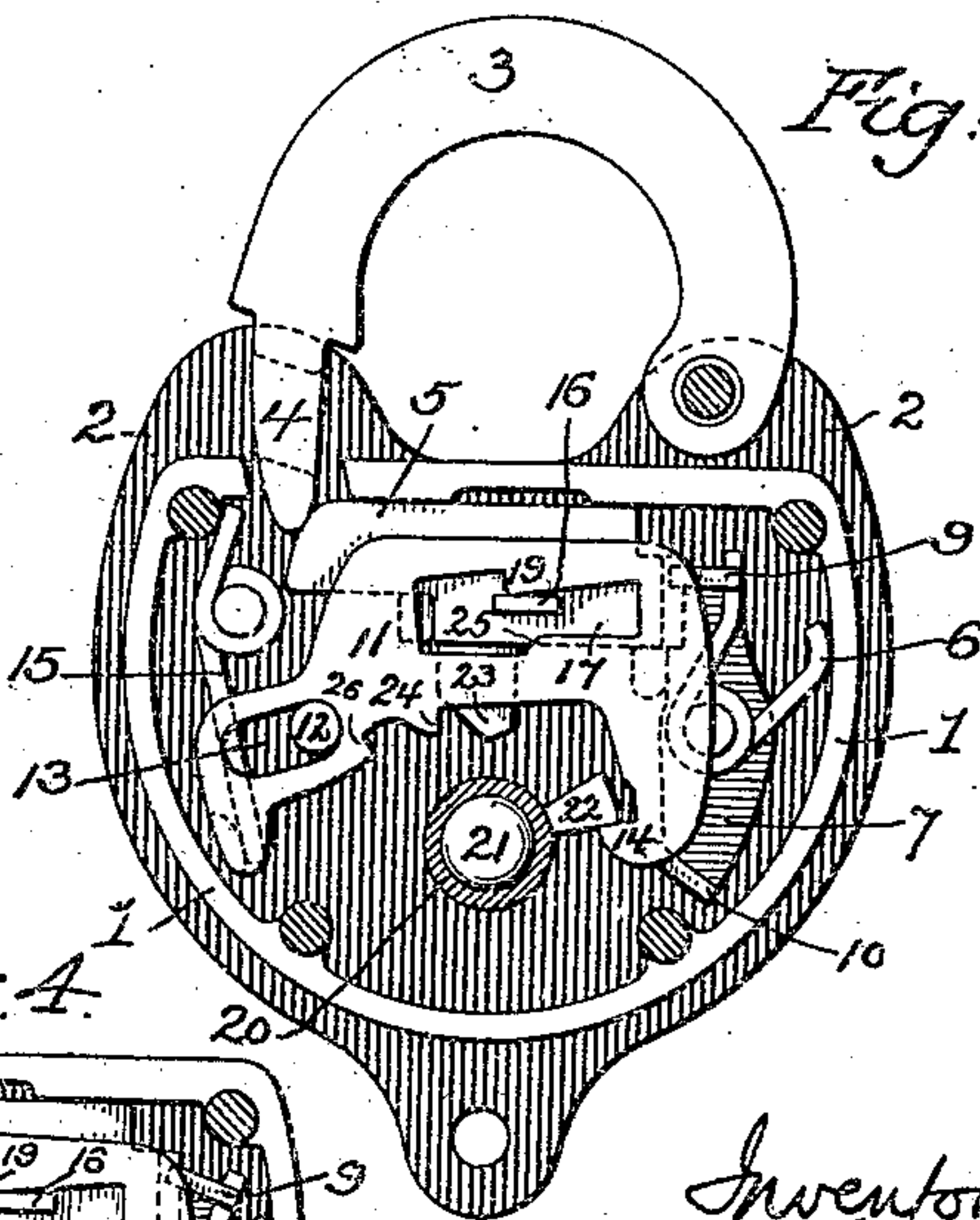
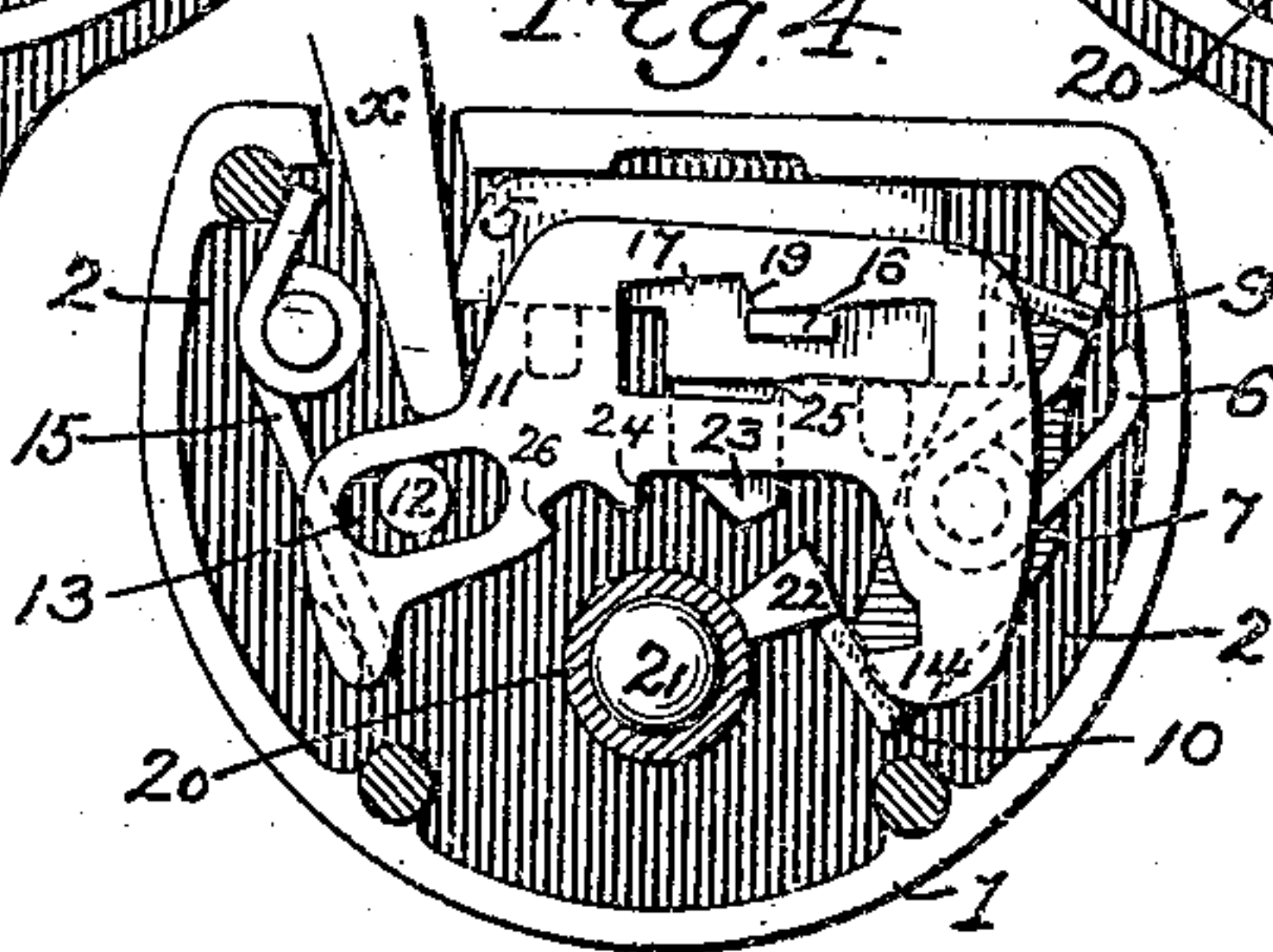


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK SOLEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO MILLER LOCK COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

PADLOCK.

956,212.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK SOLEY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
5 Improvements in Padlocks, of which the following is a specification.

My invention relates to a padlock for use in cases where, after the lock has once been opened by the use of the key, it is desirable
10 to prevent the removal of the key until the lock has been again closed and fastened, my invention consisting of a certain combination of parts whereby this result is attained.

In the accompanying drawing—Figure 1
15 is a view of the lock with the cover-plate removed and the parts shown in the locked position; Fig. 2 is a similar view showing the parts as adjusted by the key to effect release of the shackle of the lock and pre-
20 vent rearward movement of the key; Fig. 3 is a similar view showing the parts in the position assumed by them after the key has been turned so as to release and permit projection of the shackle-engaging spring-bolt
25 of the lock; Fig. 4 is a view showing the relation of the parts when an attempt is made to release the key by pushing back the spring bolt and tumbler without inserting the shackle, and Figs. 5, 6 and 7 are per-
30 spective views of the different elements of the lock mechanism.

In the drawing, 1 represents the shell of the lock and 2 one of the side plates of the same, preferably formed integral with said
35 shell, the other side plate being detachable, but otherwise similar to the side plate 2. The pivoted shackle 3 has a nose 4 for entering the interior of the lock casing, said nose having therein an opening for the reception
40 of the forward end of the bolt 5. This bolt is guided transversely in the lock casing and is normally projected by a spring 6 acting through the medium of a lever 7, the latter having, at its upper end, a lug 9 bearing upon
45 the rear end of the bolt 5, and, at its lower end, a lug 10 for a purpose hereinafter described.

In front of the bolt 5 is a tumbler 11 which is pivotally mounted upon a stud 12
50 in the lock and has a slot 13 for the reception of said stud, whereby the tumbler can have both a swinging movement and a sliding movement back and forth across the face of the bolt 5. The tumbler has a depending
55 hooked end 14, and is normally retained in

its forward position by means of a spring 15. Projecting from the face of the spring bolt 5 is a stump 16 which coöperates with a slot 17 in the tumbler, as hereinafter de-
scribed, said slot being enlarged at its for- 60 ward end so as to form shoulders 19 and 25.

When the lock is closed the stump 16 is in engagement with the shoulder 19 of the tumbler 11, as shown in Fig. 1, consequently the spring bolt cannot be retracted in order
65 to release the shackle.

The key 20 engages a keypost 21 in the lock casing, and, when turned clockwise, the bit 22 of the key first engages the under side of the tumbler 11 and lifts the same so as
70 to raise its shoulder 19 out of engagement with the stump 16 on the bolt 5. Further movement of the key then causes the bit of the same to engage with a depending finger 23 on said bolt 5 and move the latter rear-
75 wardly so as to free it from engagement with the nose of the shackle and permit of the opening of said shackle, as shown in Fig. 2.

As soon as the tumbler 11 has been raised 80 by the key bit so as to carry its shoulder 19 out of engagement with the stump 16 on the bolt 5, said tumbler is moved forward by its spring 15 and a shoulder 24 on the under-
side of the tumbler comes into position to 85 prevent any backward movement of the bit of the key, as shown in Fig. 2, consequently when the shackle 3 is released by the retraction of the bolt 5, the key cannot be withdrawn by turning it backwardly into
90 line with the key hole. Further forward movement of the key carries its bit 22 out of engagement with the depending finger 23 on the bolt 5 and the latter then springs forward into locking position, the key bit
95 22 finally coming into contact with the depending hooked end 14 of the tumbler 11, as shown in Fig. 3, so as to arrest the further forward movement of the key. Descent of the rear end of the tumbler 11 is pre-
100 vented by reason of the fact that the stump 16 of the bolt 5 occupies the contracted rear portion of the slot 17 in the tumbler 11 and engages with the upper wall of said slot, as shown in Fig. 3. 105

If any attempt is made to release the key by pushing back the bolt 5 and tumbler 11 as by means of a nail, spike, or like imple-
ment *x* as shown in Fig. 4, such movement of the tumbler will carry its hook 14 out of 110

engagement with the key bit 22 but the rearward movement of the bolt 5 will move the lever 7, so as to bring its lug 10 into the path of the said key bit 22 and will thereby retain the key within the lock casing. (See Fig. 4.)

When the nose of the shackle is inserted both the bolt 5 and the tumbler 11 will be pushed back and when said nose of the shackle is fully inserted the bolt 5 will spring forwardly, thereby permitting such movement of the lever 7 as to carry its lug 10 out of the path of the key bit 22 and at the same time the rear end of the tumbler 11 will drop so as to engage the shoulder 19 with the stump 16 on the bolt 5 and thereby lock the latter in the projected position, the key being now free to be turned (as indicated by dotted lines in Fig. 1) until its bit 22 is in line with the key hole so that it can be withdrawn from the lock casing. If an improperly bitted key is used the excessive lift of the tumbler 11 will, if the bit is too long, bring the shoulder 25 on the under wall of the slot 17 into position to engage with the stump 16 on the bolt 5, and will thus prevent the retraction of said bolt, engagement of the shoulder 24 on the tumbler with the key bit preventing the latter from being turned backward into line with the key hole and consequently preventing withdrawal of the key from the lock. If the bit is too short, the tumbler will not be lifted sufficiently to clear the shoulder 19 from engagement with the stump 16, but a supplementary shoulder 26 on the underside of the tumbler will engage the bit of the key and prevent backward movement of the latter or withdrawal of the same from the lock. Any attempt to tamper with the lock by the use of an improperly bitted key will thus be readily detected.

I claim:

1. The combination of the lock casing and shackle with a shackle-engaging bolt and a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a plurality of shoulders for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

2. The combination of the lock casing and shackle with a shackle-engaging bolt, and a bolt-retaining tumbler having a hooked end for retaining the bit of the key, said tumbler being mounted so as to have both a swinging and a sliding movement in the lock case.

3. The combination of the lock casing and shackle with a shackle-engaging bolt, a bolt-retaining tumbler having a hooked end for retaining the bit of the key, said tumbler being mounted so as to have both swinging and sliding movement in the lock case, and a spring for causing the tumbler to slide in one direction.

4. The combination of the lock casing and shackle with a shackle-engaging bolt, and a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a shoulder for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt, said tumbler being mounted so as to have both swinging and sliding movement in the lock case.

5. The combination of the lock casing and shackle with a shackle-engaging bolt, and a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a plurality of shoulders for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt, said tumbler being mounted so as to have both swinging and sliding movement in the lock case.

6. The combination of the lock casing and shackle with a shackle-engaging bolt, a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a shoulder for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt, said tumbler being mounted so as to have both swinging and sliding movement in the lock case, and a spring for causing the tumbler to slide in one direction.

7. The combination of the lock casing and shackle with a shackle-engaging bolt, a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a plurality of shoulders for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt, said tumbler being mounted so as to have both swinging and sliding movement in the lock case, and a spring for causing the tumbler to slide in one direction.

8. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, and means whereby said tumbler retains the bolt in the projected position and is supported in an elevated position by the bolt when the latter is retracted.

9. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, and means whereby said tumbler retains the bolt in a projected position and is supported in an elevated position by the bolt when the latter is retracted, said tumbler also having a shoulder for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

10. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, and means whereby said tumbler retains the bolt in a projected position.

tion and is supported in an elevated position by the bolt when the latter is retracted, said tumbler also having a plurality of shoulders for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

11. The combination of the lock casing and shackle with a shackle-engaging bolt, and a tumbler having a hooked end for retaining the bit of the key, and means whereby said tumbler retains the bolt in a projected position and is supported in an elevated position by the bolt when the latter is retracted, said tumbler being mounted so as to have both swinging and sliding movement in the lock casing.

12. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, means whereby said tumbler retains the bolt in a projected position and is supported in an elevated position by the bolt when the latter is retracted, said tumbler being mounted so as to have both swinging and sliding movement in the lock case, and a spring for causing the tumbler to slide in one direction.

13. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, means whereby the tumbler is caused to retain the bolt in a projected position and is supported in an elevated position by the bolt when the latter is retracted, said tumbler being mounted so as to have both a swinging and sliding movement in the lock casing and being provided with a shoulder for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

14. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, means whereby the tumbler is caused to retain the bolt in a projected position and is supported in an elevated position by the bolt when the latter is retracted, said tumbler being mounted so as to have both a swinging and sliding movement in the lock case and being provided with a plurality of shoulders for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

15. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler mounted so as to be free both to swing and slide in the lock casing and having a hooked end for engaging the bit of

the key, means whereby the tumbler is caused to retain the bolt in a projected position and is supported in an elevated position by the said bolt when the latter is retracted, a spring causing the tumbler to slide in one direction, and a shoulder on the tumbler for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

16. The combination of the lock casing and shackle with a shackle-engaging bolt, a tumbler mounted so as to be free both to swing and slide in the lock casing and having a hooked end for engaging the bit of the key, means whereby the tumbler is caused to retain the bolt in a projected position and is supported in an elevated position by the said bolt when the latter is retracted, a spring causing the tumbler to slide in one direction, and a plurality of shoulders on the tumbler for preventing rearward movement of the bit of the key when the tumbler is adjusted before the retraction of the bolt.

17. The combination of the lock casing and its shackle with a shackle-engaging bolt, a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and a lever actuated by the bolt and serving to retain the bit of the key when the bolt is retracted.

18. The combination of the lock casing and its shackle, a shackle-engaging bolt, a bolt-retaining tumbler having a hooked end for retaining the bit of the key, and means for preventing the turning backward of the key when the tumbler has been adjusted before the retraction of the bolt, and a lever engaged by the bolt and serving to retain the bit of the key when the bolt is retracted.

19. The combination of the lock casing and its shackle, a shackle-engaging bolt, a tumbler having a hooked end for retaining the bit of the key, means whereby the tumbler is caused to retain the bolt in the projected position and is supported in an elevated position by the bolt when the latter is retracted, means for preventing turning back of the key when the tumbler has been adjusted before the retraction of the bolt, and a lever engaged by the bolt and serving to retain the bit of the key when the bolt is retracted.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FRANK SOLEY.

Witnesses:

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KATE A. BEADLE.