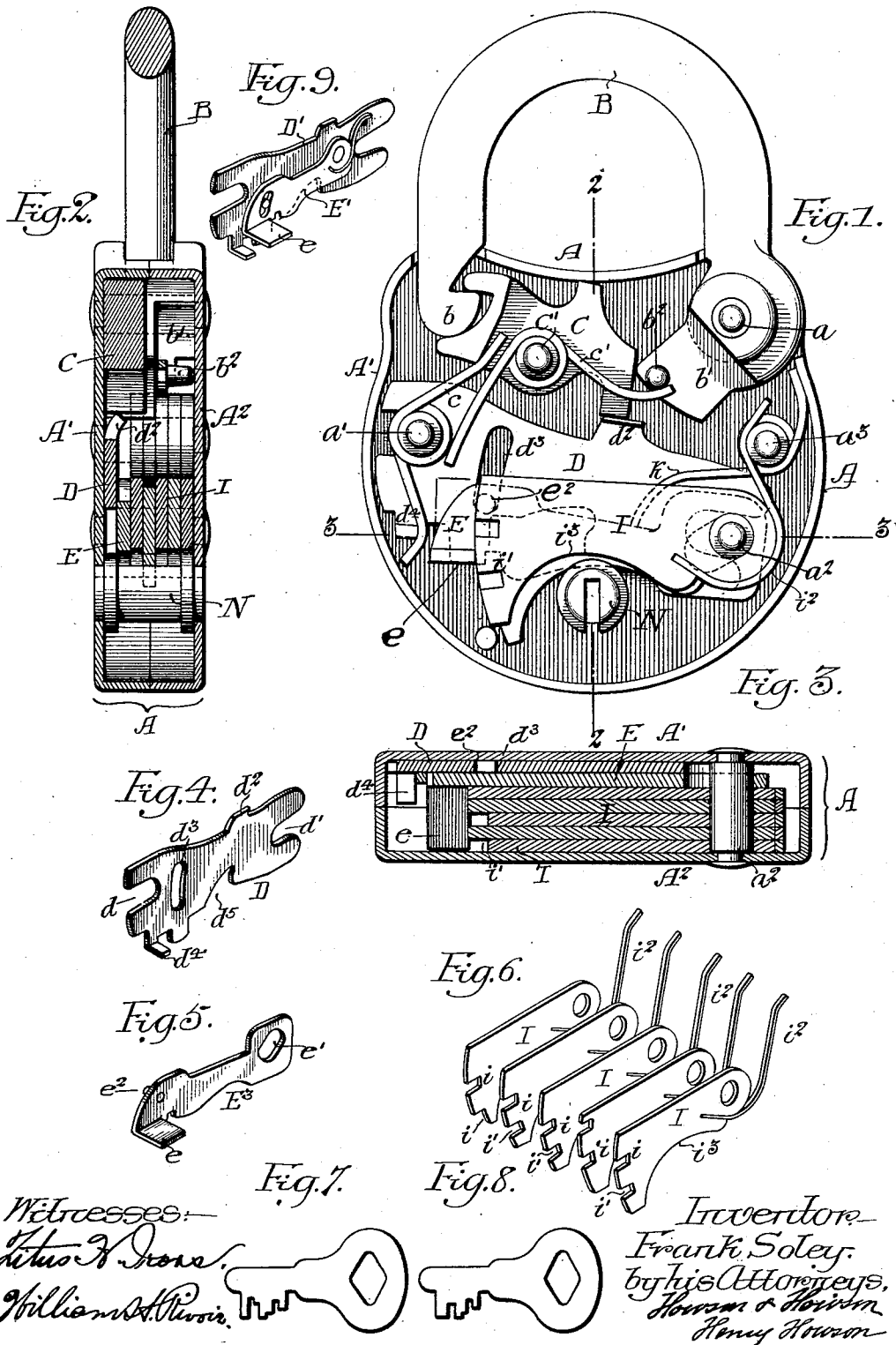


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PADLOCK.

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1,011,872.

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UNITED STATES PATENT OFFICE.

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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 Improvements in Padlocks, of which the following is a specification.

The object of my invention is to construct a padlock in such a manner that the number of changes can be considerably increased over the padlocks now in use, and in which master keys may be used if desired.

In the accompanying drawing,—Figure 1, is a face view of my improved padlock with the front half of the casing removed. Fig. 2, is a sectional view on the line 2—2 Fig. 1; Fig. 3, is a transverse sectional view on the line 3—3 Fig. 1; Fig. 4, is a perspective view of the bolt; Fig. 5, is a perspective view of the stump carrier; Fig. 6, is a detached perspective view illustrating a series of tumblers; Fig. 7, is a side view of the ordinary key; Fig. 8, is a perspective view of a master key, and Fig. 9, is a view illustrating a modification of the bolt and stump carrier.

A is the case of the lock made in two parts A'—A².

B is the shackle pivotally mounted on a post *a* on the casing and having a nose *b* notched to receive the locking dog C pivotally mounted on a post C'. This dog is held in its normal position by a spring *c* mounted on a post *a'* of the casing. The heel *b'* of the shackle is so proportioned that when the locking dog is in the position illustrated in Fig. 1, it not only engages the nose of the shackle, but also is in the path of the heel and prevents movement at this point, so that the shackle is locked at the heel and nose.

A spring *c'* mounted on the pivot post C' of the dog C bears against a projection *b²* on the heel of the shackle and tends to open the shackle when it is released by the locking lever.

D is the bolt recessed at *d—d'* for the reception of the posts *a'* and *a²* on which it slides.

d² is a projection on the bolt which bears against the locking lever and on the movement of the bolt the locking lever is released and the spring *c* throws it clear of the shackle, which opens by the pressure of its spring. The spring *c* also rests against a

projection *d³* on the bolt D and holds it in its normal position as shown in Fig. 1.

E is the stump carrier which is pivotally mounted on the post *a²*. The pivot opening *e'* is in the form of an inclined slot to allow it to have a pivotal movement on the post *a²* at the same time allowing it to move with the bolt when it is in proper alinement with the notches in the tumblers.

e is the stump which projects in front of the tumblers I and can enter the notches *i* or *i'* in the tumblers when the notches of all the tumblers are in alinement with each other and with the stump. Projecting from the rear of this stump carrier is a pin *e²* which enters a slot *d³* in the bolt so that while the stump carrier is free to move transversely independently of the bolt, it must move longitudinally with it. A spring *k* on a post *a³* forces the stump carrier E toward the key post N.

The tumblers I are of the ordinary type, being pivoted to the post *a²* and each tumbler has a spring *i²* at the pivot end, which bears upon the post *a³* projecting from the casing. At the forward end of each tumbler in the present instance are two notches *i—i'*. When all the upper notches aline with the stump *e* then the key illustrated in Fig. 8, is used. When the lower notches *i'* are in alinement with the stump *e* then the key illustrated in Fig. 7 is used and either one of these keys may be used as the master key. In the present instance the key illustrated in Fig. 8, is the master key, while the key illustrated in Fig. 7, operates only a single lock, and each key of the series is made different, to correspond with the different notches *i'* in the tumblers, though it will be understood that where a master key is not used the punchings can be varied throughout the entire edge of the tumblers and the stump can be moved to any position in respect to the tumblers, so that the variations in the combinations of the lock are practically unlimited.

It will be understood that the edge *d⁵* of the bolt, the edge *e³* of the stump carrier and the edges *i³* of each tumbler will be shaped to accord with the particular key to be used. The key is adapted to a key opening in the key plug N, and as the key is turned with the plug it will actuate each of the tumblers, the stump carrier and the bolt, and when the notches of the tumblers

are in line and the stump is also in line with the notches, then the bolt, on the continued movement of the key will be withdrawn, carrying with it the stump carrier, and the stump will enter the notches in the tumblers and at the same time the bolt will release the locking dog C, the spring *c* turning the locking dog on its pivot away from the nose and heel of the shackle and allowing the shackle to open.

It will be understood that the connection between the bolt and the shackle may be modified without departing from the essential features of the invention, and the design of the mechanism may be changed according to the type of lock to which my invention is applied. In Fig. 9, I have shown the stump carrier E' pivotally mounted on the bolt D, and the stump carrier slotted for the reception of a pin on the bolt. In some instances where a cheap lock is desired, a single tumbler may be used either pivotally mounted as shown or as a notched fixed element and the variations may be made by changing the shape of the edge *e*³ of the stump carrier.

While I have described my invention as especially applicable to padlocks, it will be understood that the invention can be incorporated in draw locks and other types of locks, without departing from the essential features of the invention.

I claim:—

1. The combination in a lock, of a casing, a shackle, a bolt, a pivoted tumbler having a notch at one end, a pivotally mounted stump carrier having a stump at one end arranged to enter the notch in the tumbler, both the tumbler and the stump carrier being actuated by the key, said stump carrier being movable on a pivot with the bolt.

2. The combination in a lock, of a casing, a shackle, a pivotally mounted bolt, a post, a series of tumblers pivotally mounted thereon, each tumbler having a notch at the end opposite the pivot, a stump carrier pivotally mounted on said post and having a stump at its outer end, both the stump and the tumblers being located by the key, the stump being also engaged by the bolt.

3. The combination in a lock, of a casing, a shackle, a bolt, a series of tumblers pivotally mounted and each having two notches at the free end, a stump carrier pivotally mounted on the same post as the tumblers and having a stump at its free end arranged

to enter one of the notches in each of the tumblers, said tumblers and stump carrier being located by the key.

4. The combination of a casing, a pivotally mounted shackle, a bolt arranged to slide longitudinally in the casing, a pivoted stump carrier having a pin, said bolt being slotted to receive the pin on the stump carrier, a tumbler pivoted to the casing and notched for the reception of the stump of the carrier when the stump and notch are brought into alinement on the insertion of the key in the lock, so as to allow the bolt to be withdrawn to release the shackle.

5. The combination in a padlock of a casing having posts, a pivoted shackle, a locking dog arranged to engage the shackle, a sliding bolt actuating the locking lever, a pivoted stump carrier having a slot for the reception of a pivot post, a series of tumblers notched at the edge and arranged to aline with the stump of the stump carrier, a key post, the bolt being free to be withdrawn when the stump of the stump carrier is in alinement with notches in all the tumblers.

6. A stump carrier for padlocks having a stump projecting from one side near one end, and an inclined slot at the opposite end and having a portion arranged to be engaged by a bolt.

7. The combination in a padlock of a casing, a pivoted shackle, a pivoted locking dog engaging the shackle, a sliding bolt engaging the locking dog, a pivotally mounted stump carrier coupled to the bolt so that it will have a lateral movement independent of the bolt and move with the bolt longitudinally, a series of pivoted tumblers notched to receive the stump carrier when brought in alinement by the key.

8. The combination in a padlock of a casing, a shackle, a locking dog, a sliding bolt, a pivoted stump carrier, a slot and pin connection between the bolt and stump carrier, a spring bearing upon the stump carrier, a series of notched tumblers, the position of the tumblers and the stump carrier being controlled by a key.

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

FRANK SOLEY.

Witnesses:

WM. E. SHUPE,

WM. A. BARR.