

Nov. 12, 1946.

J. RIFKIN

2,411,115

SEAL LOCK

Filed March 29, 1944

2 Sheets-Sheet 1

Fig. 1

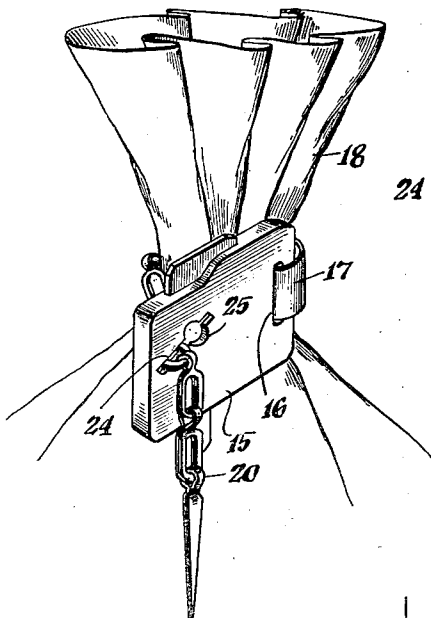


Fig. 2

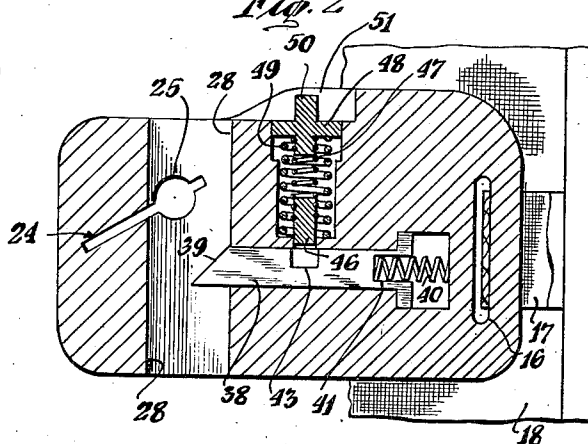


Fig. 3

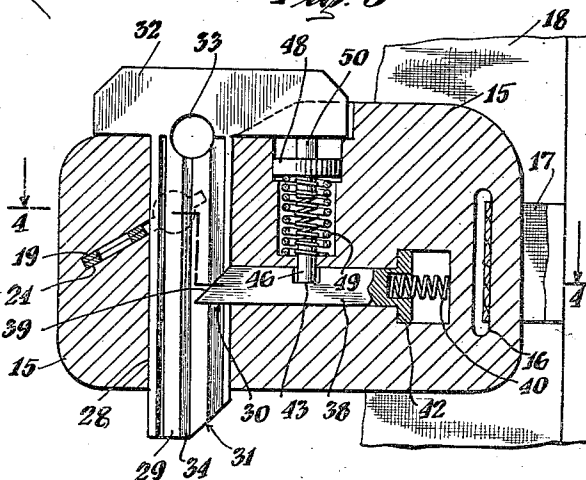


Fig. 6

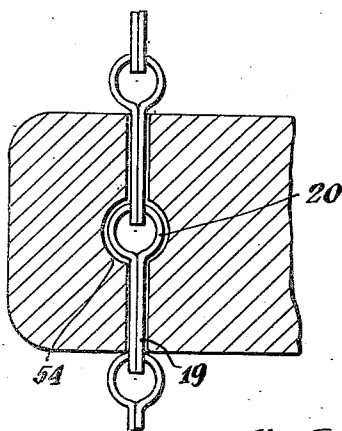


Fig. 5

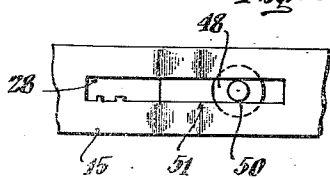
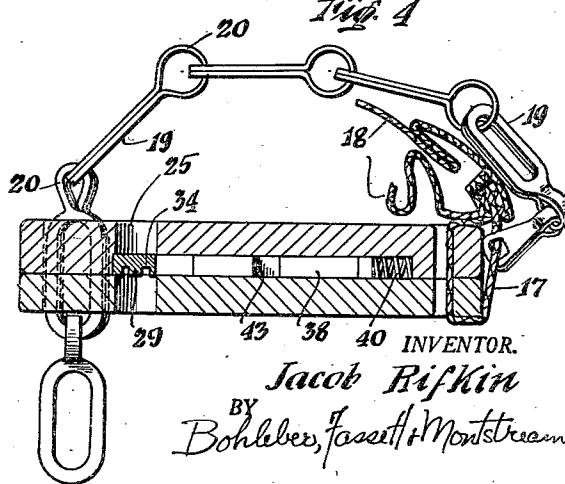


Fig. 4



INVENTOR.
Jacob Rifkin
BY *Bohleber, Fassett & Montstream*

ATTORNEYS

Nov. 12, 1946.

J. RIFKIN

2,411,115

SEAL LOCK

Filed March 29, 1944

2 Sheets-Sheet 2

Fig. 7

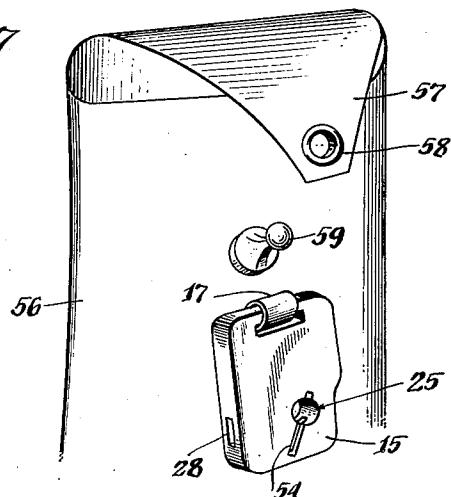


Fig. 8

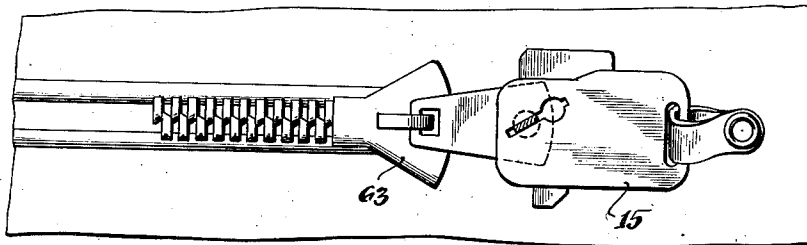
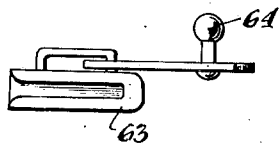
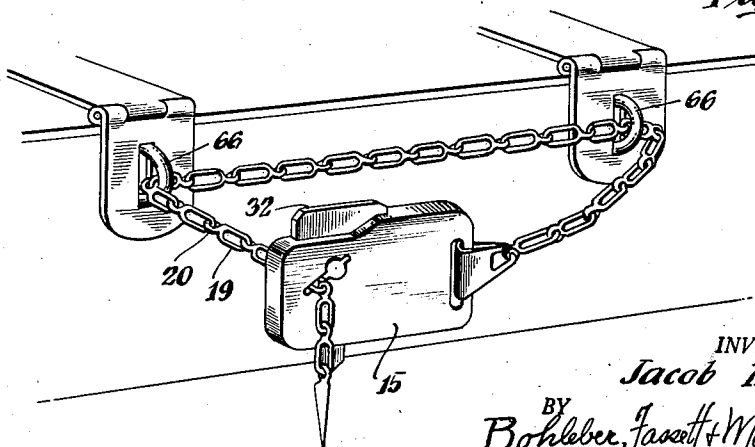


Fig. 9

Fig. 10



INVENTOR.
Jacob Rifkin
BY
Bohleber, Fassett & Montstream

ATTORNEYS

UNITED STATES PATENT OFFICE

2,411,115

SEAL LOCK

Jacob Rifkin, Wilkes-Barre, Pa.

Application March 29, 1944, Serial No. 528,567

22 Claims. (Cl. 292—325)

1

The invention relates to a lock which utilizes a destructible key to lock the same. In order to open or release the lock the key must be destroyed or an exposed portion thereof torn from the rest of the key. Such a lock and key mechanism is designed not to prevent opening or release of the lock but merely to indicate immediately that the seal or lock has been tampered with so as to place responsibility therefor. The invention also relates to the combination of the destructible key and lock. In some forms of the invention a chain is used in conjunction with the lock and the invention relates also to the combination of such chain and lock and to these parts and the destructible key.

The invention has particular applicability for use with fabric money pouches which are now sealed by a cord wrapped around the mouth of the pouch and a device for sealing the cord. In order to open such a sealed pouch the cord is cut and all too frequently the pouch is cut too which means rapid destruction thereof. Moreover the seal is not reusable which means that each sealing operation constitutes a relatively expensive item. The invention herein is releasable without damage to the pouch and an inexpensive element is the only unusable or destructible item in the construction.

It is an object of the invention to construct a lock or seal which effectively locks a bag, pouch or other receptacle but is easily opened and utilizes an inexpensive key as the destructible element so that the lock itself may be used an indefinite number of times, and an inexpensive key is the only part which needs to be replaced for each sealing or locking of the receptacle.

Another object of the invention is to construct a novel lock utilizing a destructible key.

Another object is to construct a new combination of chain, and lock and also of these parts with a destructible key for locking or sealing bags, receptacles and the like.

A still further object of the invention is to construct a lock utilizing a destructible key such that the key itself directly operates a part of the locking mechanism of the lock.

Other objects of the invention will be more apparent from the following description taken in connection with the accompanying drawings illustrating preferred embodiments of the invention in which

Figure 1 is a perspective view of the lock utilizing a chain as a locking element and sealing the open end of a pouch such as a money bag.

Figure 2 is a vertical section through the lock

2

in larger scale showing the construction thereof.

Figure 3 is a vertical section through the lock with the destructible key inserted and locked therein.

Figure 4 is a section through the lock taken on line 4—4 of Figure 3.

Figure 5 is a partial top view of the lock.

Figure 6 is a cross section through part of the lock in which an enlarged portion of the chain is the portion thereof which is locked within the lock body.

Figure 7 is a view showing a pouch with a flap and a collar button style of locking element.

Figure 8 shows the lock used in connection with a zipper fastener.

Figure 9 shows the locking element of the zipper fastener.

Figure 10 shows the lock and chain used with the hasps of a suit case or box.

The lock comprises a lock body 15 which may have means for securing the lock to some other structure. This means may take the form of a slot 16 at one end of the lock body which is adapted to receive a loop 17 for attaching the same to the desired receptacle. In the use of the lock as shown in Figure 1, the loop 17 is secured to a fabric money bag or pouch 18 so that the seam thereof is within the pouch as shown in Figure 4. Any attempt to reach the contents of the pouch by splitting the seam would be immediately apparent since the seam could not be resewn without leaving external threads. Also this loop is so located and of such shortness that the lock and chain cannot be slipped or forced over the end or mouth of the bag.

The loop 17 may also carry the end of a locking element 19 which, in the form illustrated is a chain. This chain has a series of enlarged portions 20 which form the flexible linkage loops between links of the chain and also provide enlarged portions which prevent movement of the chain within the lock when it is locked in position as will appear more fully hereinafter. The chain is wrapped tightly around the mouth of the bag 18 after which the chain is locked in the lock body as will be described hereinafter. Such a chain also has definite gripping or holding qualities on the fabric of the bag which aids in securing a tamper proof construction.

The chain is locked against removal from the lock body by a locking slot 24 therein which will not pass the enlarged portion of a chain or locking element. The slot may be inclined which reduces the necessary length of the lock body. Any location for an entrance passage into the lock-

ing slot is contemplated such as the slot extending from the edge of the lock body, preferably, however, the chain is inserted in the locking slot by being drawn through an entrance opening or passage 25 through the lock body which is large enough to pass the enlarged portions or loops 20 of the chain. In the construction illustrated in Figures 1 through 5 the lock has a width so that the relative flat portion of the chain can be inserted in the locking slot 24 and the enlarged portions or loops 20 of adjacent links cannot pass therethrough. The chain link therefore is locked in the locking slot between its own enlarged portion 20 and the enlarged portion 20 of the next link. The lock body preferably has a width, at least at the locking slot, closely approximating the distance between the loops 20 so that a link of the chain cannot be tampered with without being revealed.

The lock body contains a key slot 28 which receives a destructible key 29. The key slot is so located that when the key is inserted therein, the latter obstructs the locking slot so that the locking element, such as the chain, cannot be removed therefrom. In the construction illustrated where an entrance opening or passage 25 is provided the key slot is located so that the key closes or obstructs this entrance passage.

The key is provided with means which serve to prevent removal of the key from the slot in both directions. This means may be a recess or the form particularly illustrated is a notch 30 in the edge of the shank thereof which is preferably an angular notch. Such angular notch provides means to lock the key against removal from the key slot in one direction only and hence requires a cooperating projection upon the key such as a head 32 to prevent removal in the other direction. The lower end of the key carries a camming edge 31 the purpose of which will be described.

The key has a destructible portion which preferably is the head 32 of the key so that the key can be inserted in the key slot in one direction only and so that a locking projection is provided which engages the edge of the lock body and hence cooperates with the locking notch 30 to lock the key in the key slot against removal in both directions. The head may be weakened in any way such as by the hole 33 which permits the head to be relatively easily torn or broken from the shank. The shank of the key may carry grooves 34 so that a particular key is required for each particular lock. These grooves prevent any key from being inserted in any lock and it is necessary to have the proper key for the particular lock. By this means it is not possible to destroy the key and open the lock and thereafter relock the lock with another destructible key from some other source.

Means are provided to effectively lock the key in the key slot so that the key and the mechanism of the lock cannot be tampered with without destroying the key. The lock body carries a longitudinally slidable bolt 38 which, for the style of key notch illustrated, has an inclined end 39. The end of the bolt projects into the key slot and is received in the notch 30 in the key. The bolt is normally impelled to the left as viewed in Figures 2 and 3 by a spring 40 which is received in a recess 41 in the end of the bolt. The bolt may have a head 42 to limit the movement of the bolt. A part of the bolt provides means for locking bolt such as a locking notch or recess 43.

Means are provided to lock the bolt which is operated by the destructible portion of the key.

This means may be of any suitable construction that illustrated including a locking pin 46 carried within the lock body upon a spring 47. The other end of the spring is attached to an operating button 48 so located that it or a part thereof is engaged by the destructible portion of the key. The spring 47 is of such length that in the position of Figure 2, the locking pin 46 is retracted. A spring 49 impels the button 48 to its upper limit and hence normally retains the locking pin 46 out of the locking notch or recess 43 in the bolt 38. The button 48 carries a knob or projection 50 which is exposed and so located that it will be engaged by the destructible head of the key. Preferably the projection extends into a slot 51 in the edge of the lock body.

When the key 29 is inserted into the key slot the camming surface 31 on the end of the key pushes the bolt 38 to the right. As the shank of the key is continued to be pushed into the key slot, the edge of the removable head 32 passes into the slot 51 and engages the projection 50 to depress the button 48. This compresses the inner spring 47 but the locking pin 46 cannot enter the locking notch or recess 43 in the bolt 38 because this recess is not yet under the locking pin. When the key reaches a position so that the head engages the lock body and the button has been fully or substantially fully depressed, the notch 30 in the key is opposite the bolt so that the bolt snaps into the notch under the action of the spring 40. When the bolt 38 moves to the left into the key notch, the locking pin 46 is propelled into the locking recess 43 in the bolt so that the key is locked by the bolt and the bolt is locked against retraction by the locking pin 46. Not only is the key locked in the key slot but the bolt is also locked against retraction by anyone attempting to release the same by insertion of a slender instrument into the key slot.

Means are provided which prevent that portion of the head of the key which operates the projection 50 from being twisted about the shank without breaking the same in any attempt to release the bolt locking pin 46. This means may be of any form, that shown being a slot 51 in the edge of the lock body. Such a slot provides surrounding walls which completely prevent access to the button when the key head is therein, and consequently the only way in which the projection 50 of the operating button 48 can be released is by practically destroying the key head or completely breaking the head 32 off of the key shank. When the head is broken away, the button 48 is released so that the spring 49 impels the button 48 upwardly and consequently the locking pin 46 also moves upwardly and is removed from the locking recess or notch 43 in the bolt 38. The projecting shank of the key 29 may then be seized and the shank withdrawn outwardly or downwardly, the angular edge of the notch 30 camming the bolt 38 to the right. With the key removed, the chain may be moved to the entrance passage 25 and removed from the lock so that the bag may be opened.

The lock body when manufactured and assembled is so constructed that it cannot be taken apart or opened. This can be done in any suitable way such as welding a side plate to the rest of the lock body which renders the internal parts inaccessible without destruction of the lock body.

In Figure 6 a locking slot 54 is illustrated having an enlarged central groove which receives the enlarged portion or loop 20 of the chain link 19 and in this manner irremovably retains or locks

5

the chain within the locking slot of the lock. In other respects this construction corresponds with that illustrated and described in connection with Figures 1 through 5.

The lock described herein does not require a chain as a locking element. Any device having an enlarged portion which can be received in the locking slot is contemplated. In Figure 7 a bag or receptacle 56 is shown having a closing flap 57. The flap has a hole 58 therein to receive a collar button locking element 59 having an enlarged portion in the form of a knob. The lock 15 is secured to the bag so that when it is desired to lock the same, the hole 58 in the flap 57 is passed over the enlarged portion or knob of locking element 59 of the collar button after which the knob is inserted in the entrance passage 25 of the lock and passed into the locking slot 54. A destructible key is then inserted in this key slot 28 as previously described and the bag is locked. The same construction can be used with a zipper style of construction in which the zipper slider 63 carries a locking element 64 with a knob or enlarged portion thereon which is received in the lock in the same manner that the collar button locking element 59 is received therein.

In Figure 10 the lock and chain is shown as used to lock a bag or box in which the chain passes through the hasps 66 of the bag or box and the chain is locked in the lock in a manner previously described.

The invention is presented to fill a need for improvements in a seal lock. It is understood that various modifications in structure, as well as changes in mode of operation, assembly, and manner of use, may and often do occur to those skilled in the art, especially after benefiting from the teachings of an invention. Hence, it will be understood that this disclosure is illustrative of preferred means of embodying the invention in useful form by explaining the construction, operation and advantages thereof.

What is claimed is:

1. A lock utilizing a destructible key and adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, and means carried by the lock body to lock the key in the key slot when inserted therein.

2. A lock utilizing a destructible key and adapted to receive a locking element having at least one enlarged portion comprising a lock body, the body having a locking slot to receive and retain the locking element therein, an entrance passage in the lock body to pass the enlarged portion of the locking element into the body and connected with the locking slot, the body having a key slot to receive the destructible key and located in the lock body so that the key obstructs the entrance passage of the locking slot, and means carried by the lock body to lock the key in the key slot when inserted therein.

3. A lock utilizing a destructible key having a notch therein and the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, a bolt movable in the body and engaging the notch in the key, and means operated by the destructible

6

portion of the key when inserted in the key slot to lock the bolt against movement and thereby lock the key in the key slot.

4. A lock utilizing a destructible key having a breakable head and the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, and means carried by the lock body to lock the key in the key slot including means operated by the head of the key when inserted in the key slot.

5. A lock utilizing a destructible key having a notch therein and the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, a spring pressed bolt movable in the body and engaging the notch in the key, a notch in the bolt, and means carried by the lock body and operated by the key when inserted in the key slot to engage the bolt notch and lock the bolt against movement

6. A lock utilizing a key having a notch therein and a destructible head, the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, a spring pressed bolt which is retracted by the key and engaging the notch in the key to lock the same, a notch in the bolt, and means carried by the lock body and operated by the head of the key when inserted in the key slot engaging in the notch in the bolt to lock the same against movement.

7. A lock utilizing a destructible key and the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having an entrance passage into the lock body to pass the enlarged portion of the locking element and having a locking slot connected with the entrance passage to retain the locking element therein, the lock body also having a key slot to receive the destructible key and located in the lock body so that the key obstructs the entrance passage, and means carried by the lock body and operated by the key when inserted in the key slot to lock the key against movement and thereby lock the same in the key slot.

8. A lock utilizing a destructible key having a notch therein and the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having an entrance passage into the lock body to pass the enlarged portion of the locking element and having a locking slot connected with the entrance passage to retain the locking element therein, the lock body also having a key slot to receive the destructible key and located in the lock body so that the key obstructs the entrance passage, a bolt movable in the body and engaging the notch in the key, and means carried by the lock body and operated by the key when inserted in the key slot to lock the bolt against movement and thereby lock the key in the key slot.

9. A lock utilizing a key having a notch therein and a destructible head, the lock being adapted to receive a locking element having at least one

7

enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot to prevent removal of the locking element, locking means for the key engaging the notch therein including means operated by the head of the key when inserted in the key slot, and means carried by the lock body to prevent twisting of the head.

10. A lock utilizing a key having a notch therein and a destructible head, the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, locking means for the key engaging the notch therein including means operated by the head of the key when inserted in the key slot, and a slot carried by the lock body to receive the edge of the key head to prevent twisting thereof.

11. A lock utilizing a key having a notch therein and a destructible head, the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, a bolt engaging the notch in the key to lock the same, means operated by the head of the key when inserted in the key slot and engaging the bolt to lock the same against movement, and means carried by the lock body to prevent twisting of the head.

12. A lock utilizing a key having a notch therein and a destructible head, the lock being adapted to receive a locking element having at least one enlarged portion comprising a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, a spring pressed bolt which is retracted by the key and engaging the notch in the key to lock the same, a notch in the bolt, a button operated by the head of the key when inserted in the key slot, a locking pin engaging in the notch in the bolt to lock the same against movement, a spring connection between the locking pin and the button, and spring means normally retracting the locking pin.

13. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible portion, a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the key and located in the lock body so that the key obstructs the locking slot, bolt means engaging the recess in the key to lock the same, and means carried by the lock body and operated by the destructible portion of the key when inserted in the key slot to lock the bolt means against movement.

14. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head, a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the key and located in the lock body so that the key obstructs the locking slot, bolt means engaging the recess in the key to lock the same, and means carried by the lock body and operated by the destructible

8

head of the key when inserted in the key slot to lock the bolt means against movement.

15. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head, a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the key and located in the lock body so that the key obstructs the locking slot, bolt means engaging the recess in the key to lock the same, means operated by the destructible head of the key when inserted in the key slot to lock the bolt means against movement, and means carried by the lock body retaining the operating portion of the key head against lateral movement.

16. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head, a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, bolt means engaging the recess in the key to lock the same, and means operated by the head of the key when inserted in the key slot to lock the bolt means against movement including a locking pin, an operating button carried by the lock body and positioned to be engaged by the destructible head of the key when inserted in the key slot, and a spring connection between the locking pin and the operating button.

17. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head; a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot; means engaging the recess in the key to lock the same; means operated by the head of the key when inserted in the key slot to lock the next aforesaid means against movement including a locking pin, and an operating button carried by the lock body and positioned to be engaged by the destructible head of the key when inserted in the key slot; and means carried by the lock body to retain the head of key against twisting movement when the key is fully inserted in the key slot.

18. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head; a lock body having a locking slot to receive and retain the locking element therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot; a bolt engaging the recess in the key to lock the same; means operated by the head of the key when inserted in the key slot to lock the bolt against movement including a locking pin, an operating button carried by the lock body and positioned to be engaged by the destructible head of the key when inserted in the key slot, and a spring connection between the locking pin and operating button; and means carried by the lock body to retain the head of the key against twisting movement when the key is fully inserted in the key slot.

19. A lock combination adapted to receive a locking element having at least one enlarged portion comprising a key having a recess therein and a destructible head; a lock body having a locking slot to receive and retain the locking ele-

9

ment therein and a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot; a spring pressed bolt engaging the recess in the key to lock the same; means operated by the head of the key when inserted in the key slot to lock the bolt against movement including a locking pin, an operating button carried by the lock body and positioned to be engaged by the destructible head of the key when inserted in the key slot, a spring connection between the locking pin and the operating button, and a spring retracting the operating button; and a slot carried by the edge of the lock body to retain the head of the key against twisting movement when the key is fully inserted in the key slot.

20. A lock combination utilizing a destructible key comprising a locking chain of links, each link having an enlarged portion for connecting the links together and a relatively flat portion, a lock body, the body having a locking slot to receive the relatively flat portion of the chain to retain the chain therein, the body having a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, and means carried by the lock body to lock the key in the key slot when inserted therein.

21. A lock combination utilizing a destructible key comprising a locking chain of links, each

10

link having an enlarged portion for connecting the links together and a relatively flatter portion, a lock body, the body having a locking slot to receive and retain a locking chain link therein including an entrance passage to pass the enlarged portion of the chain through the body and a locking portion extending away therefrom having a narrow portion and a central groove to receive an enlarged portion of the chain, the body having a key slot to receive the destructible key and located in the lock body so that the key obstructs the entrance passage of the locking slot, and means carried by the lock body to lock the key in the key slot when inserted therein.

22. A lock combination utilizing a destructible key comprising a locking chain of links, each link having an enlarged portion for connecting the links together and a relatively flat portion, a lock body, the body having a locking slot to receive the relatively flat portion of the chain to retain the chain therein, the body having a thickness at the locking slot substantially the same as the length of the flat portion of a chain link, the body having a key slot to receive the destructible key and located in the lock body so that the key obstructs the locking slot, and means to lock the key in the key slot when inserted therein.

JACOB RIFKIN.