

J. H. SHAW.

LOCK.

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1,333,189.

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Fig. 1.

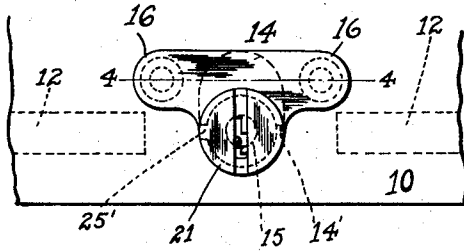


Fig. 4.

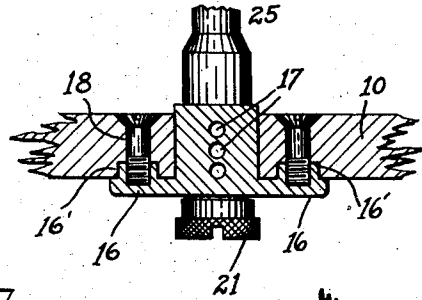


Fig. 2.

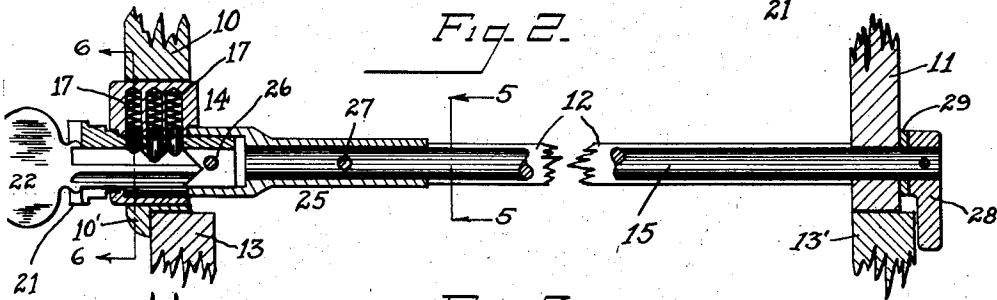


Fig. 3.

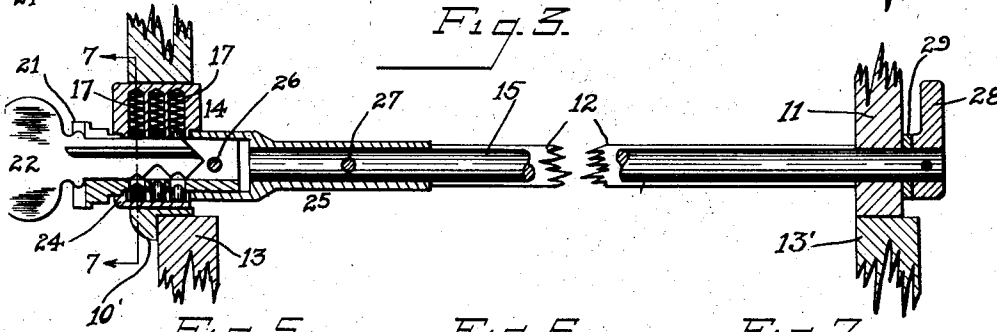


Fig. 5.

Fig. 6.

Fig. 7.

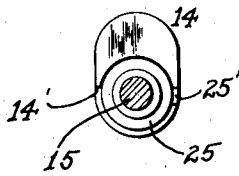


Fig. 8.

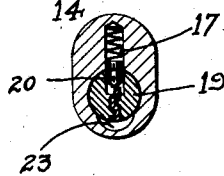
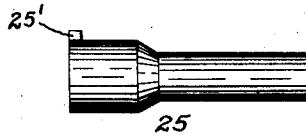
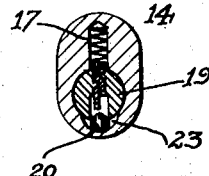


Fig. 9.



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LOCK.

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To all whom it may concern:

Be it known that I, JOHN H. SHAW, of the city and county of New Haven and State of Connecticut, have invented certain new and
5 useful Improvements in Locks, of which the following is a full, clear, and exact description.

This invention relates to locks, and more particularly to a pin tumbler lock which is
10 so constructed that its key barrel may be rotated from the unlocked to the locked position by grasping the same with the fingers, without necessitating the use of a key. The invention is illustrated as applied to a record
15 filing cabinet to lock the drawers of the cabinet in their closed position.

One object of the invention is to provide a pin tumbler lock which is so constructed that the key barrel may be rotated from its
20 unlocked to its locked position without necessitating the use of a key.

Another object is to provide a pin tumbler lock which is constructed to permit the key to be removed from the key barrel when the
25 same is turned to its unlocked position, and in which the barrel may be freely rotated to its locked position after the key has been removed from the same.

Still another object of the invention is to provide a simple and convenient locking means which may be easily and quickly
30 applied to file cabinets and the like for locking the drawers of the same in their closed position.

To these and other ends, the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the drawing,

40 Figure 1 is a fragmentary front view of a file cabinet drawer having my improved lock mounted in the outer face thereof;

Fig. 2 is a fragmentary sectional view through a record filing cabinet, showing in
45 section my improved lock operatively connected to a bolt operating rod having a swinging bolt upon its inner end for locking the draw in its closed position. The parts of the locking device are shown in
50 their locked position.

Fig. 3 is a view similar to Fig. 2, showing the parts of the locking device in their unlocked position.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1;

Figs. 5, 6 and 7 are sectional views taken on the lines 5—5, 6—6 and 7—7 respectively, looking in the direction of the arrows; and

Figs. 8 and 9 are end and side views respectively of details of my locking device.

In the drawing, I have designated the outer face member of a file drawer or the like by the numeral 10, and the inner end member of this drawer is designated by the numeral 11. The type of file drawer herein
65 partially shown is usually provided with a bottom such as 12, having a relatively wide slot formed therein and extending longitudinally of the drawer, in which slot is usually mounted a file-retaining rod adapted
70 to be inserted through a perforated projection formed upon the file cards or card partitions (not shown), but commonly used in the drawers of file cabinets. I have
75 designated by the numeral 13 the front strip or brace with which file cabinets are commonly provided, and the rear strip or brace of the cabinet is designated by the numeral 13'. These front and rear strips serve to
80 support the sliding drawers in their spaced relation one above the other, and also serve to reinforce the file cabinet. In the particular cabinet partially shown, the outer face of the cabinet drawer is provided with a
85 lip or projection 10' which extends below the bottom of the drawer and partially covers the strip 13.

One of the objects of this invention, as above stated, is to provide simple and convenient means for locking a file drawer,
90 such as above briefly described, in its closed position. The means which I have provided for this purpose consists of a pin tumbler lock designated in its entirety by the numeral 14 and mounted in the outer face 10
95 of the cabinet drawer near the lower edge of the drawer. The lock is provided with a key barrel hereinafter more fully described, the inner end of which is rigidly secured to a bolt operating rod 15 preferably
100 positioned within the slot above mentioned formed in the drawer bottom 12. Upon the inner end of the rod 15 is mounted a swinging bolt hereinafter more fully described.

The pin tumbler lock 14 consists of a body
105 portion having opposite laterally projecting

flanges 16 formed upon the outer face of the same, by means of which the lock may be secured to the device upon which it is mounted, in this case the outer face member 10 of the file drawer. These flanges 16 are preferably provided with inwardly directed lugs 16' having threaded drill holes formed therein adapted to receive securing screws. The body portion of the lock 14 is provided with a pin tumbler extension, in which is formed the pin tumbler sockets 17, in which the usual type of pin tumblers are slidably mounted. The lock 14 is preferably mounted upon the outer face of the member 10 by forming sockets in the same, adapted to receive the body portion of the lock and also the lugs 16' above mentioned. The lock is preferably secured to the member 10 by screws 18, the heads of which are preferably countersunk in the inner face of the member 10, and the outer ends of these screws are threaded into the lugs 16'. The body portion of the lock 14 is provided with a bore, in which is rotatably mounted a key barrel 19 having pin tumblers 20 slidably mounted therein in the usual manner. The outer end of the key barrel is constructed to extend a short distance beyond the outer face of the lock 14 and preferably has an enlarged knurled head 21 formed thereupon, the object of which will be hereinafter pointed out. The pin tumbler lock is provided with the usual type of key such as 22, which coöperates with the pin tumblers 20 in the usual manner. An important feature of my invention is the construction by which the pin tumblers 20 are permitted to move outwardly a sufficient distance to permit the key 22 to be withdrawn from the key barrel when the same is turned to its unlocked position. This is accomplished by forming a trough or groove 23 in the bore of the body portion of the lock in which the key barrel rotates, the same being preferably formed substantially opposite the pin tumbler extensions 17. This trough or groove 23 permits the pin tumblers 20 to move outwardly a sufficient distance beyond the cylindrical surface of the key barrel to permit the key to be withdrawn from the same, as shown in Figs. 3 and 7. This outward movement of the pin tumblers 20, however, does not lock the key barrel against rotation, since the formation of the trough 23 is such that when the key barrel is rotated slightly, the pins 20 are forced into the key barrel by the inclined walls of the trough 23. The trough preferably does not extend entirely through the body portion of the lock but terminates a short distance from the front face thereof, leaving the web-like portion 24, as this gives the front face of the lock 14 a more pleasing appearance and prevents the pin tumblers 20 from being tampered with from the outside of the drawer upon which the lock is mounted. From the

above description, it will be apparent that when the key barrel has been rotated to its unlocked position, as shown in Figs. 3 and 7, and when the key 22 has been removed therefrom, the key barrel may be easily rotated to its locked position by simply grasping the knurled head 21 between the fingers and rotating the same without the use of a key.

The bolt operating rod 15 above mentioned is preferably rigidly secured to the key barrel 19 by means of a sleeve 25. One end of this sleeve preferably has a socket formed therein, adapted to receive the inwardly projecting end of the key barrel 19, and the sleeve is rigidly secured to this end of the key barrel by a rivet 26. The other end of the sleeve 25 has a reduced bore formed centrally thereof adapted to receive the outer end of the rod 15 and is rigidly secured thereto by a rivet 27. The end of the sleeve 25, which is secured to the key barrel 19, preferably has formed thereupon an outwardly projecting lug 25', which is adapted to contact with opposite shoulders 14' formed upon the inner face of the lock 14. The lug 25' and shoulders 14' coöperate to limit the angle through which the key plug may be rotated to substantially 180°, thus forming a convenient means for preventing the key barrel from being rotated through a complete revolution. The inner end of the rod 15 preferably extends a short distance beyond the rear end 11 of the drawer in which the same is mounted, and upon this rearwardly projecting end is rigidly secured by a rivet or similar means a swinging bolt 28, the bolt being so positioned that it may be rotated so that its outer end will lie back of the brace member 13', as shown in Fig. 2. A washer such as 29 is preferably provided between the member 11 and the inner face of the swinging bolt 28.

From the above description, when read in connection with the drawing, it will be seen that when it is desired to lock a sliding drawer of a filing cabinet provided with my improved device, all that is necessary is to grasp the knurled head 21 between the fingers and rotate the key-barrel from the position shown in Fig. 3 to the position shown in Fig. 2. This rotation of the key-barrel rotates the rod 15, which is rigidly secured thereto, and swings the bolt 28 from the position shown in Fig. 3 in which it clears the brace 13', to the position shown in Fig. 2, in which the outer end of the swinging bolt 28 lies back of this brace, thus locking the drawer in its closed position. It will also be apparent that, due to the construction of the trough 23, the key-barrel may be rotated from its unlocked to its locked position without requiring the use of the key 22, to move the pin tumblers 20 to their releasing position. This feature of my invention is important, since it permits the drawers of

the filing case to be locked without the use of a key, but prevents these drawers from being opened by anyone except the person in possession of the key.

5 Although, in the illustration of my invention, I have shown my improved pin tumbler lock as applied to the drawer of a record file cabinet, it will be obvious that my invention is not limited to this particular use, and that
10 my pin tumbler lock may be used for various purposes other than the specific application of the same herein illustrated and described.

What I claim is:

1. A pin tumbler lock comprising a body
15 portion, a key-barrel rotatable therein, pin tumblers slidably mounted in said barrel, said body portion having a clearance space formed therein permitting said pin tumblers to move outwardly whereby the key may be withdrawn from the key-barrel when the
20 latter is turned to its unlocked position, said clearance space having an inclined face for moving the pin tumblers into said barrel when the same is rotated.

2. In a pin tumbler lock, a casing, a key-barrel rotatably mounted therein, pin tumblers in said key-barrel, means permitting an abnormal outward movement of said tumblers when said barrel is turned to its un-
25 locked position whereby said key may be removed, and means whereby the rotation of said key-barrel forces said tumblers back to their normal position.

3. In a pin tumbler lock, a casing, a key-barrel rotatably mounted therein, and pin tumblers in said key-barrel, said casing constructed to permit an abnormal outward movement of said tumblers when said key barrel is turned to its unlocked position, and
30 said casing and key-barrel constructed to cooperate to return said tumblers to their normal position when said key-barrel is rotated.

4. In a pin tumbler lock, a casing, a key-barrel rotatably mounted therein, and pin tumblers in said key-barrel, said casing having a clearance space formed to permit an abnormal outward movement of said
35 tumblers, said casing also constructed to cooperate with said key-barrel to force said tumblers inward when said key-barrel is rotated.

5. In a pin tumbler lock, a casing, a key-barrel and pin tumblers in said key-barrel, said casing constructed to permit an abnormal outward movement of said tumblers when said key-barrel is turned to its un-
40 locked position, said casing also constructed to return said tumblers to their normal position when said key-barrel is rotated.

6. In a pin tumbler lock, a casing, a key-barrel and pin tumblers in said key-barrel, said casing constructed to permit an abnormal outward movement of said tumblers
45 when said key-barrel is turned to its un-

locked position, and means cooperating with said key-barrel whereby the rotation of said key-barrel returns said tumblers to their normal position.

7. In a pin tumbler lock, comprising a
70 casing and a key-barrel therein movable to released position by a key and movable manually without said key into locking position, pin tumblers in said key-barrel movable abnormally outward when said key-
75 barrel is turned to its released position to permit the removal of said key, and means whereby said manual rotation of said key-barrel returns said tumblers to their normal position.

8. In a pin tumbler lock, a casing, a key-barrel and pin tumblers in said key-barrel, said casing constructed to permit the pin tumblers to move outward beyond the surface of said barrel, said casing further constructed to dog said pin tumblers back to
80 their normal position within said barrel when said barrel is rotated.

9. In a pin tumbler lock, a casing, a key-barrel and pin tumblers in said key-barrel, said casing having a recess constructed to permit the pin tumblers to be moved outward beyond the surface of said barrel, said recess having a wall constructed to dog said pin tumblers back to their normal position
85 within said barrel when the barrel is rotated.

10. In a pin tumbler lock, a casing, a key-barrel, pin tumblers within said key-barrel and casing to lock the key-barrel against rotation, said casing provided with a clearance
90 space to receive the pin tumblers within said key-barrel when the same is turned to its unlocked position, whereby the key may be removed from the key-barrel while the latter is in its unlocked position, and an inclined surface adjacent said clearance space for dogging said pin tumblers into said key-barrel as it is rotated.

11. In a pin tumbler lock, a casing, a key-barrel, pin tumblers within said key-barrel and casing, said casing provided with a clearance space to receive the pin tumblers within said key-barrel when the same is turned to its unlocked position, whereby the key may be removed from its key-barrel
95 while the latter is in its unlocked position, said key-barrel being rotatable manually without its key from its unlocked to its locked position, and means whereby the rotation of said key-barrel forces said pin
100 tumblers into the same.

12. In a pin tumbler lock, a casing, a key-barrel rotatable therein, pin tumblers within said key-barrel and casing, said casing having a rounded groove formed in its inner wall adjacent said key-barrel and positioned to receive the pin tumblers within said key-barrel as they are forced outwardly by the removal of the key from its key-barrel, said rounded groove constructed to
105 120 125 130

force said pin tumblers into said key-barrel as the key-barrel is rotated.

13. In a pin tumbler lock, a casing, a key-barrel rotatable therein, pin tumblers within said key-barrel and casing, said key-barrel having a manually engageable head to be grasped to rotate the same, said casing constructed to permit the pin tumblers within

said key-barrel to move outwardly beyond the periphery of the key-barrel when the same is in its unlocked position, and means whereby the rotation of said key-barrel forces said pin tumblers into the same. 10

In witness whereof, I have hereunto set my hand on the 19th day of March, 1918. 15

JOHN H. SHAW.