(No Model.) 2 Sheets—Sheet 1.

F. W. MIX.

LOCK.

No. 537,700. Patented Apr. 16, 1895.

Fig. 1.

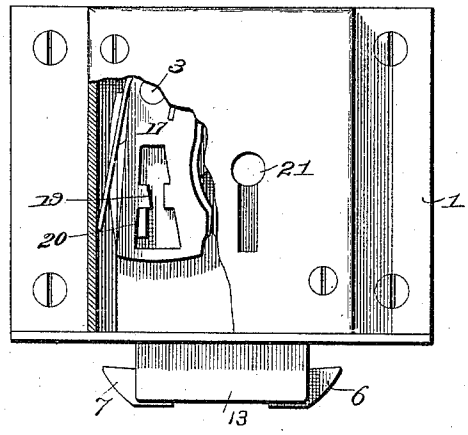
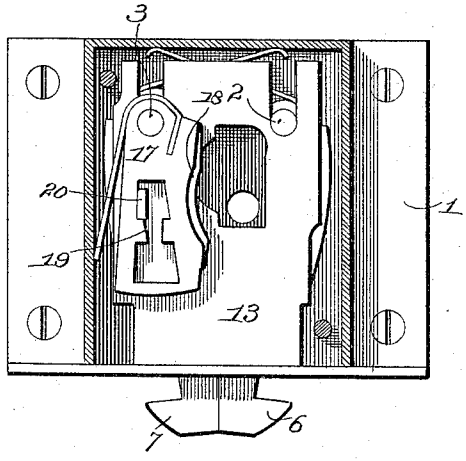


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

F. W. MIX.

LOCK.

No. 537,700. Patented Apr. 16, 1895.

Fig. 3.

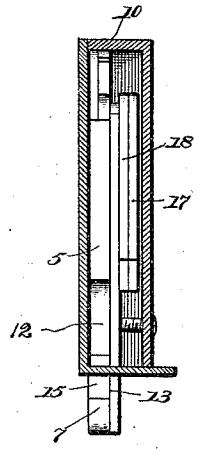


Fig. 6.

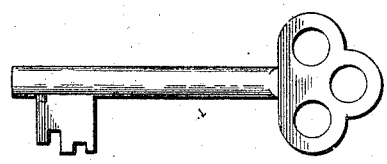


Fig. 7.

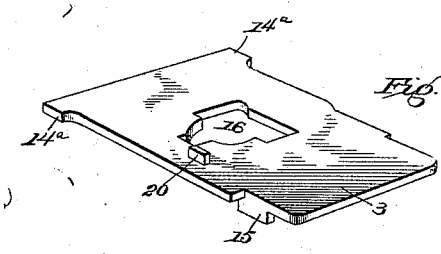


Fig. 4.

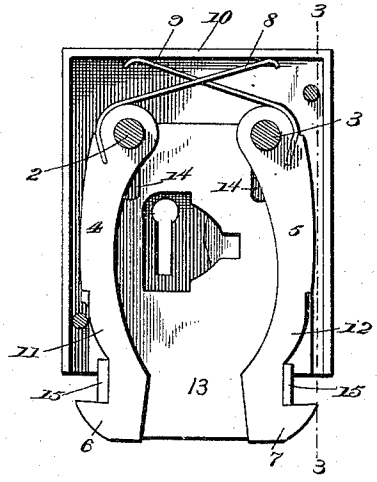
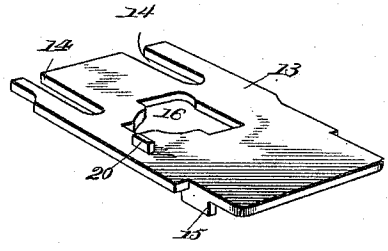


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK W. MIX, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 537,700, dated April 16, 1895.

Application filed January 3, 1894. Serial No. 496,541. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. MIX, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in a Combined Bolt and Guard for Cabinet-Locks, of which the following specification, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in automatically locking locks for pianos, desks, or other furniture having one sliding part that is to be locked to another.

My lock comprises essentially two or more spring-actuated dogs which are normally held in locked position, a combined bolt and guard which is adapted to retract the spring dogs from their locked position when it is actuated by a key and guard against the opening of the lock, and suitable tumblers adapted to lock the bolt in position.

In order that my invention may be fully understood I will first describe the same with reference to the accompanying drawings and afterward point out the novel features in the annexed claims.

In said drawings,—Figure 1 is a top elevation of my improved lock showing the parts in locked position, and having a portion of the upper plate of the casing broken away to show the controlling tumblers. Fig. 2 is a similar view with the top plate entirely removed, and showing the parts in unlocked position. Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 4. Fig. 4 is a bottom plan view of the lock with the bottom plate removed and the parts in locked position. Fig. 5 is a perspective view of the bolt and guard which actuates the spring dogs. Fig. 6 is a side elevation of the key. Fig. 7 is a perspective view of a modified form of bolt and guard.

Extending up from the base-plate 1 are two pivot posts 2 and 3.

4 and 5 are the spring dogs, which are pivotally mounted upon the posts 2 and 3 respectively. Each of these spring dogs is formed with a hooked end 6 or 7 which project sidewise in opposite directions, and an actuating spring 8 or 9, which engage the end wall 10 of the lock casing and tend to throw the dogs into locked position as shown in Figs. 1 and 4. Each dog is also formed with a cam edge 11 or 12, for the purpose which will now be explained.

13, is the combined bolt and guard. Its function is, when actuated by the key, to retract the spring dogs when it is desired to unlock the lock; and when the lock is locked it guards said dogs from access both on their front and edges and also acts as a guide bolt or dowel-pin to steady the lock from sidewise motion and prevent the lid (or other locked part) from being opened in this way. In Figs. 4 and 5 of the drawings this bolt is shown as guided by the posts 2 and 3 which engage with the slots 14 in its lower end, but it may also be guided by guides such as 14^a shown in Fig. 7 which are adapted to bear against the sides of the lock case. The particular method of inserting and guiding the bolt is of course not material. The bolt is formed with the downwardly projecting lugs 15 which engage the cam edges 11 and 12 of the spring dogs and force them into unlocked position when the bolt is thrown back. The bolt 13 is also formed with the key notch 16 for the engagement of the bit of the key by means of which it is moved back and forth.

Above the bolt 13 and pivotally mounted upon the post 3, are the spring tumblers 17 and 18, each of which is formed with a locking lug 19 that is adapted to engage the stump 20 projecting up from the bolt. The bolt is held in locked or unlocked position by means of these tumblers, they being moved out of engagement with the lug on the bolt by the bit of the key.

The operation of my lock may be briefly described as follows: The key being inserted in the keyhole 21 is turned to the right until the tumblers 17 and 18 are engaged and moved out of engagement with the stump 20. At this point the bit of the key comes into engagement with the notch 16 and moves the bolt 13 backwardly from the position shown in Fig. 1 to the position shown in Fig. 2. This longitudinal movement of the bolt 13 causes the lugs 15 to traverse the cam edges 11 and

12 of the spring dogs 4 and 5 which will move them against the tendency of their springs 8 and 9 from the position shown in Figs. 1 and 4 to that shown in Fig. 2. When the lock is in unlocked position, it will be observed that the key cannot be removed, as the shape of the key notch in the bolt 13 is such as to prevent the complete rotation of the key. The advantage of this is that the key cannot be removed without leaving the lock in locked position and ready to automatically lock. This feature is however, not essential, as the key notch could be differently shaped, or a double set of tumblers could be employed of substantially the same construction, in which case a double-bitted key would be employed for actuating both sets of tumblers. The combined bolt and guard could also be made to return automatically to locked position by means of a spring. These modifications are not shown, but are clearly within the scope of my invention.

The bolt and guard 13 performs the function of a guide or dowel-pin and also of a guard. As a guard it prevents access and injury to the spring hooks; and as a guide it insures the entry of the dogs into the keeper and prevents unlocking the lock by a sidewise movement of the desk lid or other object to which it is attached; and in addition said bolt and guard, by means of its lugs 15, which actuate the spring dogs for unlocking, performs the very important additional function of guarding the edges of said dogs from access when the lock is locked. This has been a feature of great weakness in self-locking cabinet locks as heretofore made, and I regard this function of said guard as of great importance.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a self locking lock, the combination of the spring-pressed dogs pivoted to the lock case and held normally in locked position, with the combined sliding bolt and guard engaging said dogs and adapted to move them into unlocked position against the action of the springs, substantially as described.

2. In a self locking lock, the combination of the spring-actuated dogs pivoted to the lock case, with the combined dog-actuating bolt and guard, substantially as described.

3. In a self locking lock, the combination of the spring-pressed locking dogs pivoted to the lock case and held normally in locked position by their springs, and the combined bolt and guard adapted to guard the dogs when they are in locked position and to actuate them for unlocking, substantially as described.

4. In a self locking lock, the combination of spring-pressed dogs pivoted to the lock case, with the combined sliding bolt and guard which is adapted to actuate the dogs for unlocking them and guard both their front sides and edges when in locked position, substantially as described.

5. In a self locking lock, the combination of the spring-pressed dogs pivoted to the lock case, with the sliding bolt adapted to retract the spring dogs from the locked into the unlocked position, tumblers for locking said bolt in either position, and means for operating the tumblers and bolt for unlocking the lock, substantially as described.

6. In a self locking lock, the combination of the spring-pressed dogs pivoted to the lock case and resting normally in locked position, said dogs being formed with cam edges, with the combined sliding bolt and guard provided with lugs which engage the cam edges of the dogs for unlocking them and guard said edges when the dogs are in locked position, and means for operating the sliding bolt, substantially as described.

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