

(No Model.)

F. W. SCHULTZE.
LOCK.

No. 531,008.

Patented Dec. 18, 1894.

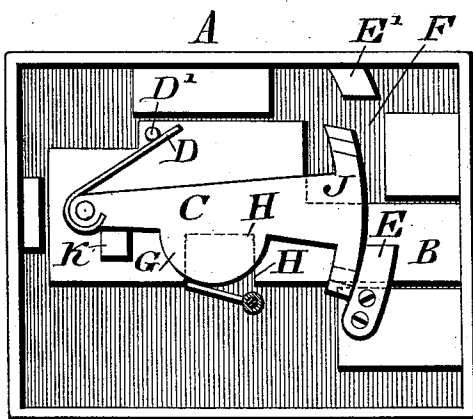


Fig. 1.

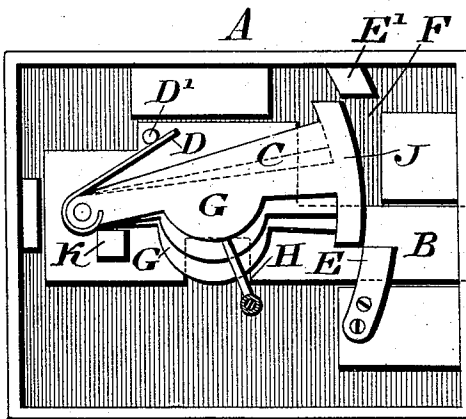


Fig. 2.

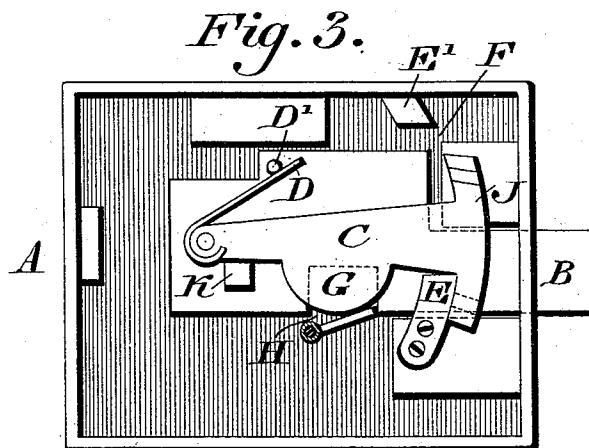
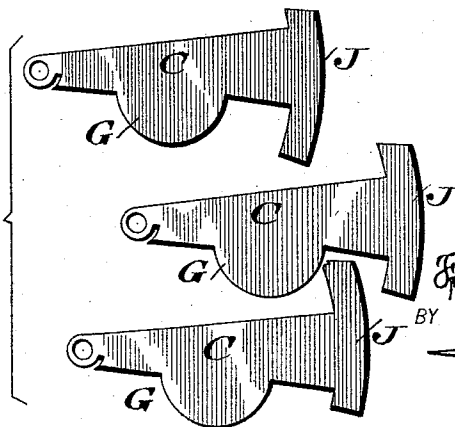


Fig. 3.

Fig. 4.

WITNESSES:

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LOCK.

SPECIFICATION forming part of Letters Patent No. 531,008, dated December 18, 1894.

Application filed August 24, 1893. Serial No. 483,946. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. SCHULTZE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Locks, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a lock having a casing with circularly-arranged lugs connected therewith forming a throat, a sliding bolt, a tumbler pivoted to said bolt and a segmental head on said tumbler, the construction and operation of the same being herein-
after set forth.

It further consists of the combination and arrangement of parts as hereinafter set forth and claimed.

Figures 1, 2, and 3, represent face views of a lock embodying my invention, the parts being in different positions. Fig. 4 represents a face view of the tumblers detached.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates the casing of a lock, and B designates the bolt thereof.

C designates tumblers which are pivoted to the bolt B, so as to accompany the same in the locking and unlocking motions thereof, said tumblers being pressed by the springs D, which are connected with the tumblers and rest against the post D', on the bolt, whereby said tumblers are restored to and retained in their normal positions, it being noticed that as the springs D rest against the post D', and the latter is secured to the bolt, the said springs move with the bolt without contacting with the case, so that they are relieved of frictional contact with the case, and do not interfere with the sliding motions of the bolt, nor wear off in action.

On the casing A are lugs E, E', which are separated a sufficient distance, forming the throat F, through which the heads G of the tumblers properly moved during the operation of locking and unlocking.

On the sides of the tumblers, toward the key-hole, are curved projections or segments G, which are adapted to be engaged by the key, and in the relative side of the bolt is a recess H, which is also adapted to be engaged

by the key, it being noticed that when the key is inserted in the lock and rotated, its bits first contact tangentially with the segments of the tumblers, and thus move the heads J of the tumblers clear of the lug E, and place them in the path of the throat F. When the bits stand radially, or at or about a right angle to the centers of all of said segments, then the proper bit engages with the wall of the recess H, so that the tumblers cannot return to their first position for the bolt is immediately advanced toward the keeper, and the heads of the tumblers are carried through the throat F, it being noticed that the lugs E, E' are arranged in the line of a circle, so as to conform to the circular motion of the segmental heads of the tumblers, it being also noticed that the segments G form the means for the contact of the key with the tumbler, and that recesses in the tumblers for the action of the key are avoided.

When the key is turned for locking or unlocking, the largest bit of the key invariably engages first with the tumbler, but as soon as the key has raised the segments on the tumblers to their highest position, and then contacts with the bolt to move the latter, then the shortest or lowest part of the bit of the key starts the motion of the bolt first. Otherwise the combined circular and horizontal locking motions will not accomplish the purpose, as the heads of the tumblers would be jammed fast into the bridge or throat through which they have to slide during either locking or unlocking.

As the tumblers are not recessed or notched for the reception of the key, the segments employed in lieu of the same admit of practically unlimited variations of keys, and the lock is rendered more sensitive, secure and simple in its construction, and the tumblers are made to fit the key, instead of making the key fit the tumblers, as in other locks.

When the bolt is thrown to full extent, the tumblers are relieved of the key, when owing to the action of the springs D, the tumblers engage with the outer face of the lug E, and thus the bolt is locked in a reliable manner.

Should attempts be made to open the lock by an improper key, should the tumblers be moved insufficiently, their heads will not clear the lug E. Should said tumblers be moved

too far, said heads will engage with the lug E' and thus the bolt will remain locked. In either case, the unlocking will not be effected, but if the rightful key is applied, the tumblers
5 are moved from the lug E to the proper extent, and the bolt carries the heads of the same through the throat F, after which when the tumblers are relieved of the key, said heads
10 thus retain the bolt in unlocked position.

On the bolt is a lug K, which is located near the heel end of the tumblers, and acts as a stop for limiting the return motion of the tumblers.

15 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A casing having the lugs E, E' connected therewith forming the throat F, the sliding
20 bolt B and the tumbler C, which latter is pivoted to said bolt and provided with the segmental head J, having its faces adapted to contact with the faces of said lugs, and the stop K on said bolt, said lugs being arranged

in circular direction, substantially as de- 25 scribed.

2. A lock having a casing with the curved lugs E, E', connected therewith, and forming the throat F, the sliding bolt B, with the post D' and stop K thereon, and the key recess H
30 therein, the tumbler C pivoted to said bolt and having the segmental head J and segmental side-projection, and the spring D bearing against said post D', and tumbler post adjacent to said key recess, said parts being
35 combined substantially as described.

3. A casing having lugs connected therewith, forming a throat, a sliding bolt in said casing, and a tumbler, which latter is pivoted to said bolt, said lugs being arranged in circular
40 direction, and said tumbler having thereon a segmental head, and a segmental side projection, substantially as described.

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Witnesses:

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