E. Kershaw,

Lock.

No. 13,880. Patented Dec. 4, 1855.

Fig. 2

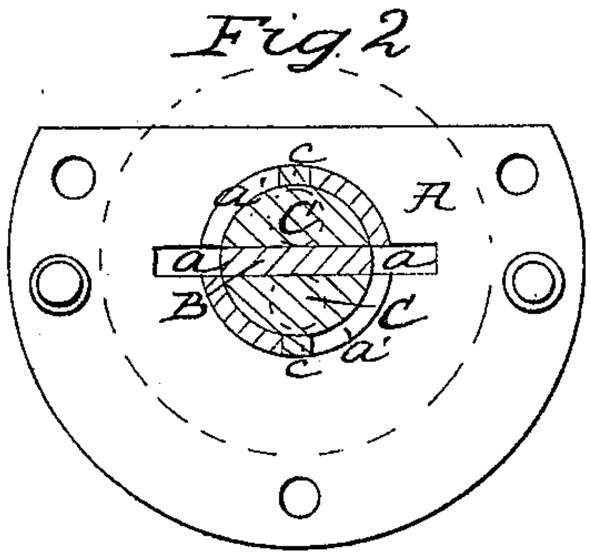

Fig. 3

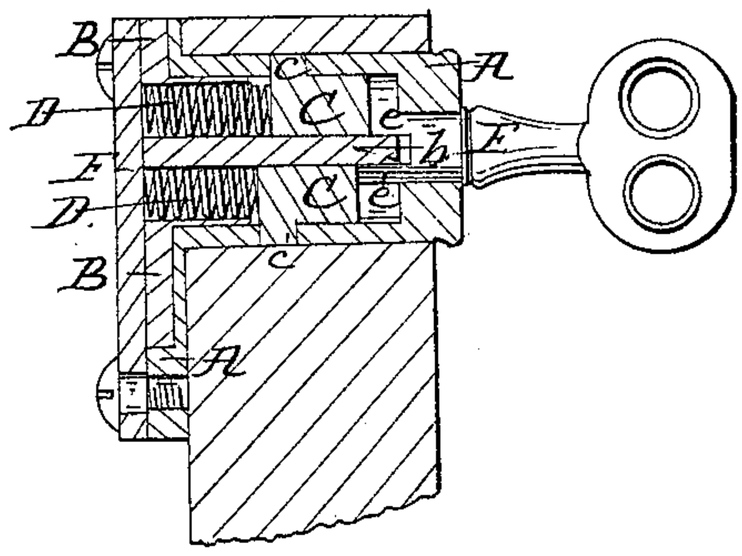

Fig. 1

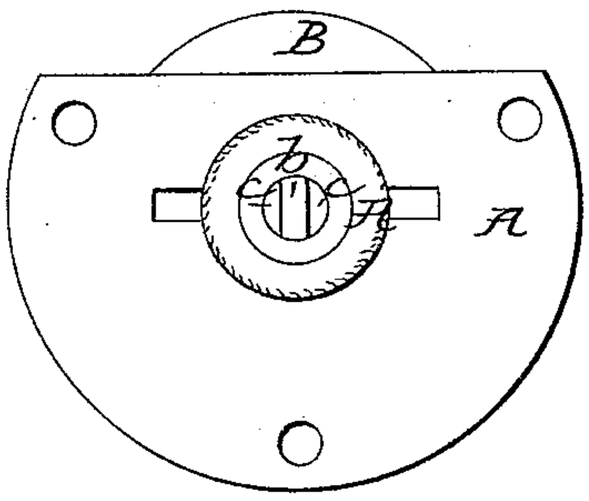

Fig. 4

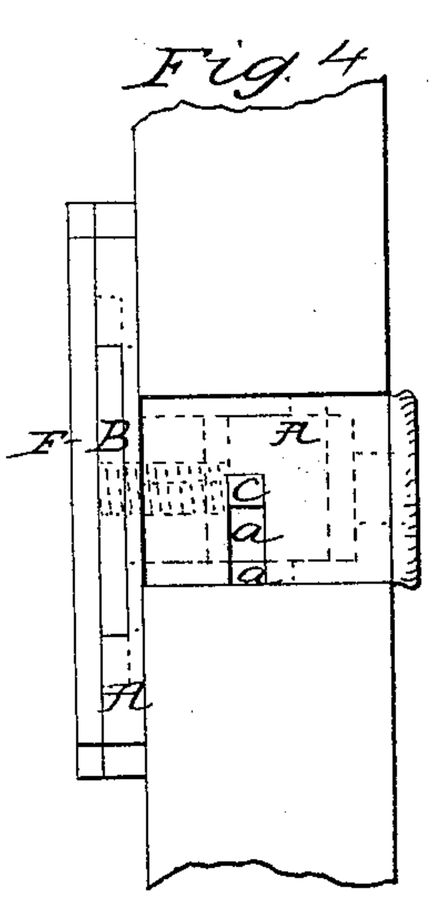

Fig. 5

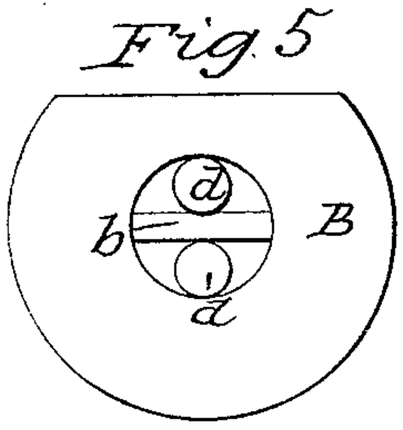

Fig. 6

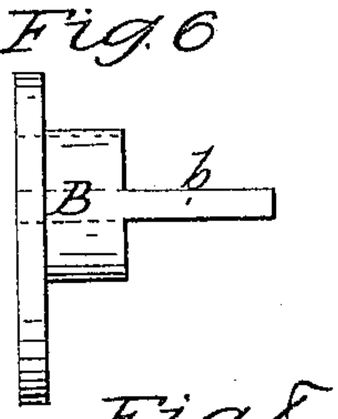

Fig. 7

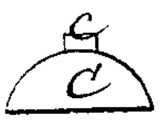

Fig. 8

UNITED STATES PATENT OFFICE.

EDW. KERSHAW, OF BOSTON, MASSACHUSETTS.

LOCK.

Specification of Letters Patent No. 13,880, dated December 4, 1855.

To all whom it may concern:

Be it known that I, EDWARD KERSHAW, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a front elevation shown as locked; Fig. 2, a front elevation with the cylindrical part of the case in section; Fig. 3, a longitudinal section on the line X; Fig. 4, a top view; Figs. 5, and 6, separate views of the disk which performs the function of a lock bolt, and Figs. 7, and 8, separate views of one of the tumblers.

The subject matter of my invention is an improvement in the manner of constructing locks for fastening drawers and cupboard doors or other similar purposes, by means of which, a cheap and secure lock can be made, within small compass, which may be easily applied to the drawer or door to be fastened.

My improvement is more particularly applicable to that class of locks in which the part that performs the office of a bolt is made to rotate about a center, as in the example herein described when it is in the form of a truncated disk; and consists in constructing the central portion of the disk or bolt in connection with the tumblers by which it is locked, so that the parts when placed together shall form a cylindrical figure, which fitting into a corresponding cylindrical cavity in the lock case serves as an axis or shaft to the rotating disk or bolt. That part of the lock case which contains this cylindrical cavity is made in the form of a tube and throats are cut in its sides in which the stumps of the tumblers work as they are moved by the key. This tube is the part of the lock case which is fitted in to the door or drawer and requires no other cutting than to bore a hole of the size of the tube externally. The end of the tube which comes through the door to the front, contains the key hole and forms an escutcheon to it. As the shank of the bolt, with the segmental tumblers, fit closely into the tube of the case, the tumblers are free to be moved back and forth parallel to the axis of rotation and also to rotate with the bolt, and require no other mechanical attachment to keep them in proper connection with it.

In the drawings the letters of reference indicate like parts in all the figures.

A, is the lock case. It is formed of a circular flange and boss and has at its center a cylindrical cavity as shown in the drawings, within which the parts of the locks are arranged. A portion of the edge of the flange is removed as shown which forms the face of the lock.

B, is a disk which works within a recess formed in the lock case A, as shown, and performs the office of the bolt in an ordinary lock, a portion of the edge of which is also removed to coincide with the straight edge of the lock case when unlocked. At the center of the disk is a cylindrical boss, of the form shown more distinctly in Figs. 5, and 6, which works in the cylindrical cavity of the lock case and serves as an axis upon which the disk rotates, and at the part *b* it is flattened so as to have the form of a web or plate. Upon each side of the web *b* the tumblers C, C, are placed which are of a semicircular form as shown Figs. 7, and 8, and with the web, *b*, just form a cylindrical figure which fills the cylindrical cavity in the lock case as is shown more clearly in Figs. 2, and 3. Immediately behind the tumblers are two helical springs D, D, which are placed in cavities *d*, *d*, in the top of the disk and serve to press the tumblers toward the front of the lock.

E, is the key, the end of which is forked as shown in Fig. 3, the two parts *e*, *e*, being the bits, the ends of which place the tumblers in position to unlock, and they also closely embrace the web *b*, upon either side which thus engages the key with the disk so that they both turn together. Upon the tumblers C, are small projections or stumps *c* each of which works in a corresponding slot *a*, in the cylindrical part of the lock case. These slots run in a direction parallel to the axis to permit a corresponding motion of the tumblers as they are thrown back and forth by the key E and springs D. In any desired part of the slot *a*, another slot *a'* is cut at a right angle to the first which forms a throat into which the projection C of the tumbler passes when the disk B is rotated to unlock. These throats are cut

in a position to correspond to the length of the bits of the key in a manner analogous to that of a common lever lock.

F, is the back plate of the lock case which incloses the disk.

To apply the lock to the door the only cutting required is to bore a hole through the same of the size of the cylindrical part of the lock case and secure it by screws through the flange as is shown in Figs. 3, and 4. In the lock here shown there are but two tumblers, but more may be used, each occupying a less portion of a circle and the key cut to a corresponding number of projections or bits as will be perfectly obvious to the mechanic. To unlock this lock it is only necessary to push in the key and turn it sufficient to bring the straight edge of the disk even with the face of the lock.

Now I am aware that locks have been heretofore made with the bolt in the form of a disk and rotating about a center, and also that tumblers have been used in connection with such lock bolt which had a movement with the bolt and parallel to its axis, and were placed in position by pushing in the key. Therefore I do not claim either of them, but

What I do claim as my invention and desire to secure by Letters Patent is as follows:

In connection with a rotating lock bolt or its equivalent I claim the combination of the shank *b* and segmental tumblers C, C, with the tubular recess of the lock case inclosing the same, with their several subordinate appendages, coöperating with each other substantially as described.

EDWARD KERSHAW.

Witnesses:

WM. C. HIBBARD,

CHAS. WYMAN.