(Model.)

J. H. BARNES.

LOCK.

No. 244,525. Patented July 19, 1881.

fig. 1.

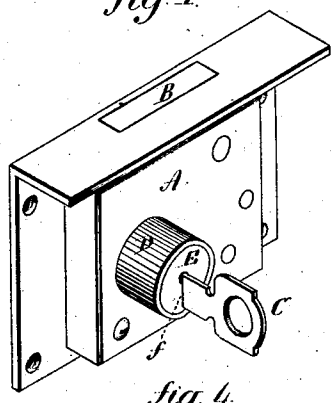


fig. 2.

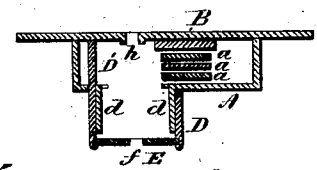


fig. 3.

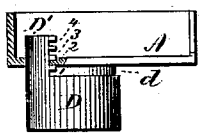


fig. 4.

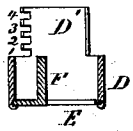


fig. 5.

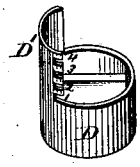


fig. 6.

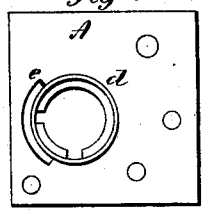


fig. 7.

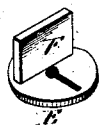


fig. 8.

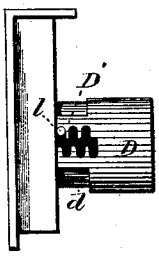


fig. 9.

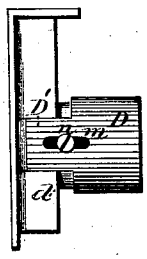
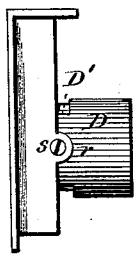


fig. 10.



Witnesses.

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UNITED STATES PATENT OFFICE.

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LOCK.

SPECIFICATION forming part of Letters Patent No. 244,525, dated July 19, 1881.

Application filed March 21, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOHN H. BARNES, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Locks; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of the lock complete; Fig. 2, a horizontal section; Figs. 3, 4, 5, 6, and 7, detached views; Figs. 8, 9, and 10, modifications.

This invention relates to an improvement in that class of locks commonly called "tubular" or "cylinder" locks—that is to say, locks which are provided with a tube to extend through the thing to which they are attached and present the end of the tube to the side opposite the lock, the key-hole being in the exposed end of the tube. The end of the tube is closed by a plate or disk in which is the key-hole, and this disk or plate provided with the key-hole forms the key-guide and turns within the tube with the key when the key is turned to draw or throw the bolt. It is necessary or desirable that the length of the tube should be such that it may come substantially flush with the surface opposite that to which the lock is attached—as, for instance, in a drawer-lock, as shown in the illustrations, the lock is placed upon the inside of the drawer-front, and the outer end of the tube should come flush with the outside of the drawer-front. But the thickness of drawer-fronts for the same class of locks varies to a considerable extent; hence a variety of lengths of tube must be made, necessitating a corresponding number of locks, as each lock has its own length of tube. In some cases the tube has been made adjustable as to length; but in order not to interfere with the mechanism of the lock on the inside of the case, the adjustable part of the tube stops at the case, and hence in cases where the tube is short—as for drawer and similar locks—any considerable extent of adjustment is impossible, because the stationary part of the tube on the lock-plate must be shorter than the shortest length of tube, and the adjustment must be considerably less than the length of the stationary tube in order to properly secure the adjustable part to the stationary part. In some cases a well or recess has been formed around the stationary part of the tube or cylinder, so as to practically sink the cylinder into the lock-case, and to that extent increase the length of the cylinder; but this arrangement can only be applied to certain classes of locks, and cannot be applied to those which have the tumblers pivoted or otherwise arranged within the lock-case, because the walls of the well will prevent the key from coming in contact with the tumblers, and in others the well would interfere with the foot-piece or follower with which the key engages to operate the bolt.

The object of this invention is principally to provide an extension-tube in that class of locks which have the tumblers pivoted within the lock-case, but applicable to nearly all classes of tubular locks; and it consists in the construction as hereinafter described, and particularly recited in the claims.

In the drawings the invention is represented as applied to a drawer or cupboard lock, which is sufficient to illustrate its application to any class of lock.

A represents the removable plate or cover, back of which is the lock mechanism, which consists of several tumblers, *a a*, pivoted within the case in the usual manner, and so as to engage the bolt B in either its drawn or thrown position, and turned from their holding position by the key C in the usual manner too well known to require description in this specification. The tumblers are arranged at one side (the right hand) of the key-hole, so that when the key is entered it passes freely into the lock to bring the bits into their proper relative position to the tumblers, so that when turned it will operate the bolt in the usual manner. The plate A is constructed with a tubular flange, *d*, projecting outward, as seen in Figs. 2 and 6. Outside this flange, opposite the tum-

blers, an opening, *e*, is made in the plate, as seen in Fig. 6, close to the flange, and following its circular shape.

D is a tube, constructed to set down over and closely fit the tubular flange *d* on the plate A. On the outer end of the tube D a disk, E, is introduced and fitted into an annular groove in the tube so as to be turned freely therein, as seen in Fig. 2. In this disk E a key-hole, *f*, is made in the usual manner to receive the key C, and so that when the key C is introduced it passes through the key-hole in the disk to its position in the lock, preferably so that a stud on its end will enter a seat, *h*, in the back of the lock to form a center on which the key will turn; then when the key is turned the disk E turns with it in the usual manner. The tube D is constructed with an extension, D′, at one side corresponding to the recess *e* in the plate A, so that when the tube D is set onto the flange *d* the extension D′ will pass through the opening *e* into the lock, as seen in Fig. 2.

In one edge of the extension D′ several notches, 1 2 3 4, &c., are made, so that after the extension is entered through the opening *e* a partial rotation will carry one of these notches onto the edge of the opening, as seen in Fig. 3, and thus make engagement with the plate A, which will prevent longitudinal movement of the tube. The several notches 1 2 3 4 permit the adjustment of the tube—that is to say, if set upon the notch 1, the shortest length of tube will be made; if drawn out and engaged with the notch 4, then the extreme length will be made, and so with the intermediate notches, intermediate lengths will be attained; hence the tube is made adjustable to give the requisite variation of length.

The disk E forms the key-guide; but, as an additional guide or conductor to lead the key into the lock, a plate or flange, F, is formed upon or attached to the inside of the plate E, as seen in Figs. 4 and 7, and extending horizontally inward, so that the back of the key will bear against the plate as a guide; and the plate may have a groove from the key-hole inward, which will serve to hold the key and prevent its movement to the right or left, and thus there will be a guide for the key in all directions, the essential feature of this part of my invention being that the key-guide is attached and has the bearing on which it rotates in the adjustable tube, and so as to move with the tube in its adjustment.

Instead of making the adjusting-notches on one edge of the extension D′ of the tube D, there may be a longitudinal slot in the said extension, with notches on each side of the slot, as seen in Fig. 8, the notches on one side alternating with those on the opposite side, and a stud, *l*, made fast in the flange *d*, onto which either of the notches may be turned, as seen in Fig. 8; or, as in Fig. 9, the extension may be constructed with a slot, *m*, and a set-screw, *n*, turned into the flange *d* through the slot to bind the tube to the flange at any point at which it may be set; or, as seen in Fig. 10, the plate A may be constructed with a lug, *r*, outside the tube, and a set-screw, *s*, through the said lug, to bear against the outside of the extension D′, so as to force the extension into frictional contact with the flange.

I do not therefore limit the inevntion to any particular method of securing the tube.

I claim—

1. A lock having its covering-plate, or plate on the side at which the key is introduced, constructed with a tubular flange and a recess through the plate outside the flange, combined with a tube carrying a rotating key-guide, and constructed with an extension upon one side to pass through said opening in the plate into the lock, longitudinally adjustable on said flange, and with means, substantially such as described, to secure the tube at any desirable position.

2. A lock having its covering-plate, or plate on the side at which the key is introduced, constructed with a tubular flange and a recess through the plate outside the flange, combined with a tube carrying a rotating key-guide, and constructed with an extension upon one side to pass through said opening in the plate, said extension constructed with several notches to engage with the plate for the purpose of adjusting the length of the tube, substantially as described.

3. In a tubular lock, the adjustable tube through which the key passes, combined with a key-guide consisting of a disk in which is the key-hole and an inward projection from said disk to direct the key, said key-guide arranged to rotate within and in connection with said tube, so as to be moved with it in extension or contraction, substantially as described.

JOHN H. BARNES.

Witnesses:
JOHN E. EARLE,
L. D. ROGERS.