(No Model.)

C. N. VITTUM.

LOCK.

No. 526,878. Patented Oct. 2, 1894.

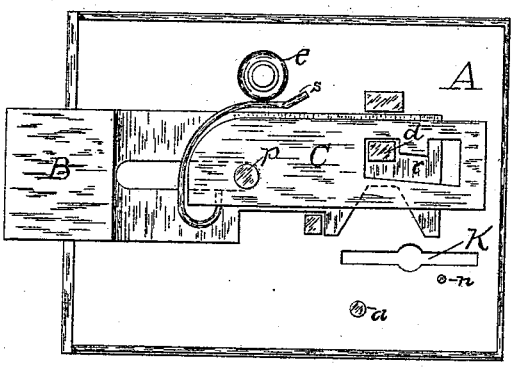

Fig. 1.

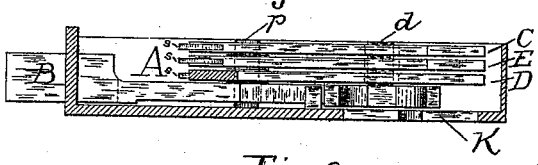

Fig 2.

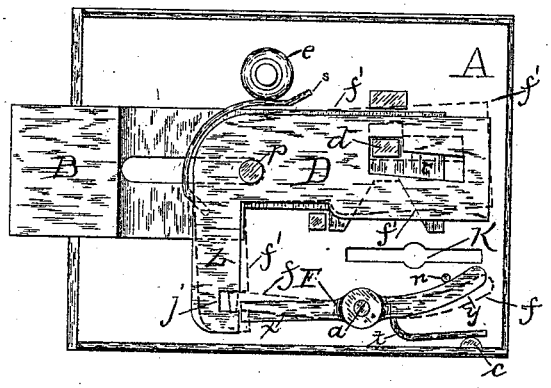

Fig. 3.

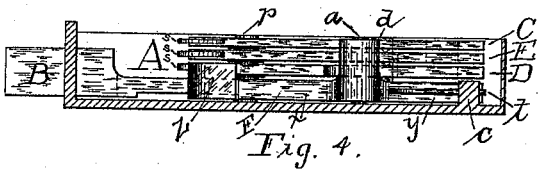

Fig. 4.

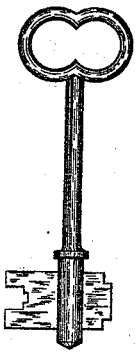

Fig. 7.

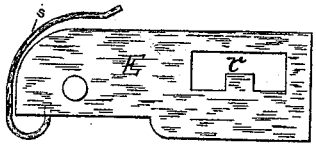

Fig. 6.

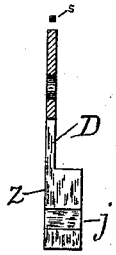

Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES N. VITTUM, OF MEREDITH, NEW HAMPSHIRE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 526,878, dated October 2, 1894.

Application filed June 4, 1891. Serial No. 395,164. (No model.)

To all whom it may concern:

Be it known that I, CHARLES N. VITTUM, of Meredith, in the county of Belknap and State of New Hampshire, have invented a new and useful Lock, of which the following is a specification.

My invention relates to improvements in locks used for fastening doors, lids, trunks, chests, and the like, in which bolts and tumblers are used, and the objects of my improvements are, first, to produce a lock to which it will be more difficult to fit a key than it is to the bolt and tumbler locks now in use, thereby rendering a lock having my improvements less likely to be "picked" by means of a false or skeleton key, wire, nail, or by any other device, and therefore more secure; second, to produce a superior lock that can be manufactured and sold at a low price, and which will not be complicated or be likely to get out of repair, and that will be a durable and safe lock; and, third, to produce a lock in which both the bolt and the tumblers can be co-operatively and practically simultaneously locked. I attain these objects by the construction and arrangement of the mechanism hereinafter described and illustrated in the accompanying drawings, in which—

Figure 1 represents a plan of such portions of a lock as will aid to illustrate my invention. The case A, bolt B, with its projection *d*, the common tumbler C, with its recess *r*, the spring *s*, in contact with stud *e*, the pivot pin *p*, and the key hole K, are well known and understood.

Fig. 2 is a longitudinal section and edge view of Fig. 1, cut through the key hole K, showing a position of three tumblers C, E, and D, in relation to the bolt B, and the spring *s s s*.

Fig. 3 is the same as Fig. 1, showing a plan of improved tumbler D with its arm Z, recess *j* and spring *s;* also the lever F, with its lever-arms *x* and *y*, the spring *t* and stop pin *n*, in position when the bolt B is thrown out, the dotted lines *f f* and *f' f' f'* showing the position of the lever F and the tumbler D when the key has made very nearly one fourth of a revolution and just before moving the bolt B back into the lock case, which is accomplished by the remainder of its half revolution, the key making but half a revolution to throw the bolt out of the lock case or to move it in.

Fig. 4 is an edge view of Fig. 3, cut through the hole for the pivot pin *a* of the lever F, showing the bolt B, tumblers C, E and D, and the lever F with its spring *t*.

Fig. 5 is a cross section of tumbler D, cut through the hole for the pivot pin *p*, showing the recess *j* in the arm of said tumbler.

Fig. 6 is a plan of a blind tumbler E, showing the recess *r* in reverse to tumbler C.

Fig. 7 is a plan of the key.

Similar letters refer to similar parts throughout the several illustrations.

To make, construct and use my invention, I first make a lock case A, as shown Figs. 1 and 3, having therein a post P over which slides the bolt in the slot or recess cut or cast therein. I also fit to said case a bolt, as shown at B, Figs. 1 and 3, with a lug or post made fast thereon, as shown at *d* in said figures, over which the recesses *r* of the various tumblers work. See said Figs. 1 and 3. I next make and fit my improved tumbler, as shown at D, in Fig. 3, consisting of the body of a tumbler of ordinary form and shape, as shown at C, Fig. 1, having therein a recess *r* fitted to the post *d* of the bolt B, and also a hole drilled near the end to fit the post *p* on which the tumbler swings. On this tumbler D is cast or secured an arm Z, as shown in Fig. 3, having a recess or slot *j* therein to receive the arm *x* of the locking lever F. To press and retain said tumbler in position I make and secure to its end a spring, as shown by *s s*, in Figs. 1 and 3, the other end of said spring pressing and working against post *e* cast or secured in the lock case. The locking lever F is drilled to fit and swivel on post *a* of the lock case A, the end *x* of said lever being of such length and size as to enter slot *j* of the arm Z of tumbler D when the bolt B is drawn into the lock case, the length of said arm *x* to be such as to reach and stop against the arm Z of the tumbler D when the bolt B is thrown out of the lock case, for the purpose of locking the bolt and the tumbler, or tumblers used in connection therewith. The other end *y* of the lever F, I make of such form, shape and length, see Fig. 3, as to be acted upon by one of the blades of the double-

bladed key shown in Fig. 7, the key sufficiently depressing said end *y* of the lever F to rock said lever F on pivot *a* enough to raise the opposite end, or arm *x*, to the right position to allow the slot *j* of arm Z of tumbler D, see Fig. 3, to pass over it when the said tumbler D is being raised to allow the post of bolt B to slide back into recess *r* of tumbler D when bolt B is being drawn back into the lock case.

I place a post *n* in the lock case for the arm *y* of lever F to strike and stop against, and to force said arm *y* against said post *n*, and to retain it in the position shown in Fig. 3 when the bolt B is thrown out of the lock, I attach a spring *t* to the lever F, the other end of said spring resting against a lug C on the lock case. See Fig. 3.

One or more auxiliary tumblers can be added, such as are shown in Fig. 1 at C, and Fig. 6 at E. These are made substantially the same as the body of my improved tumbler D above described, and their addition is for the purpose of complicating and thereby making the lock more secure. It is obvious, therefore, that as many of these auxiliary tumblers may be added as is desired or they may be wholly dispensed with and the improved tumbler be alone used, or two or more of the improved tumblers may be combined in a lock, and it is also obvious that they may be placed in any position with reference to each other and to the bolt that may be deemed desirable.

The key to my improved lock is double-bladed, having a blade on each opposite side of the stem, as shown in Fig. 7.

To operate my improved lock, first throw the bolt out of the case, as shown in Fig. 3. Then take a double-bladed blank key, see Fig. 7, and fit one of its blades so that it will engage and depress the arm *y* of lever F sufficiently to raise the arm *x* of said lever to the right position to allow the recess *j* of arm Z of tumbler D to pass over it when the tumbler D is being raised to allow the bolt to slide back into the lock case; that is, to the position shown by the dotted lines *f f* in said Fig. 3. I then fit the other blade of the key to the improved tumbler so that, as soon as said lever is in said position, it will begin to operate upon said tumbler by causing the body of the same to tilt upward and the recess *j* of its arm Z to pass over the arm *x* of the lever F, said blade being notched or grooved, see Fig. 7, to just the right depth to cause said upward motion to continue until said improved tumbler D has been carried to the position shown by the dotted line *f' f' f'*, care being observed at all times to keep said blade of such general form and shape as to properly operate the bolt when the tumblers have been brought into such a position as to allow the bolt to be moved into the lock. When other tumblers are used in combination with the improved tumbler for the purpose of complicating the lock, it is perfectly obvious that the key must be so fitted, by cutting or filling, as to properly operate them in conjunction with the improved tumbler, the object being to bring the recesses *r*, of the various tumblers into direct line with each other, and into line with the recess *r*, of tumbler D when it is in the position shown by the dotted line *f' f' f'*, in order to allow the bolt to slide back into the lock. The key is fitted to each tumbler separately and the process of fitting is the same, or nearly so, in each case. By observing the action of the key, it will be seen that its operation upon the locking device of the tumbler D and upon the locking device of the bolt B, (that is, upon the lever F, and the various tumblers) is continuous and substantially simultaneous.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a lock, the combination with the lock-case, of a suitable bolt, a tumbler D, provided with its recess *r*, pin-hole *p*, spring *s* and arm Z, in which is notched or grooved the recess *j*, the lever F provided with a post-hole *a*, a spring *t* and lever arms *x* and *y*, and independent means, consisting of the double-bitted key, for operating said bolt, lever and tumbler, substantially as described.

2. In a lock, the combination with the lock-case, of a suitable bolt, a tumbler provided with a recess so constructed as to allow the bolt to be projected and withdrawn and to lock the same when it is in a projected position, and an arm projected from the body of the tumbler and adapted to be engaged by the lever, or dog F, one or more of the common tumblers C and E, for the purpose of complicating the lock, the lever F to engage the arm of the tumbler D and prevent the movement of said tumbler when the bolt is in a projected position, and independent means, consisting of the double bitted-key, for operating the bolt, lever and tumblers, substantially as described.

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