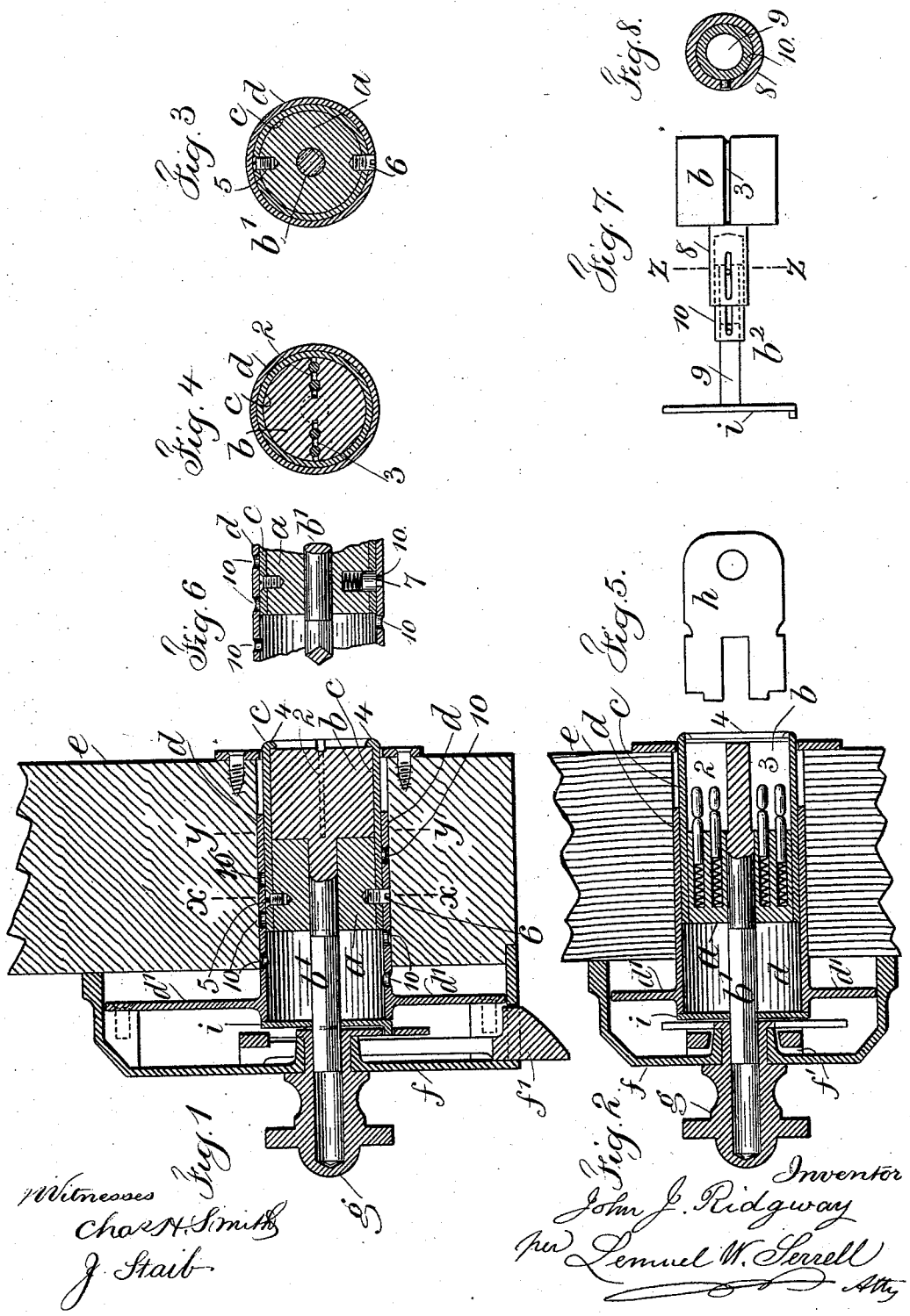
(No Model.)

J. J. RIDGWAY.

LOCK.

No. 522,430. Patented July 3, 1894.



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LOCK.

SPECIFICATION forming part of Letters Patent No. 522,430, dated July 3, 1894.

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To all whom it may concern:

Be it known that I, JOHN J. RIDGWAY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Locks, of which the following is a specification.

This invention relates to that class of locks in which the key acts to give motion endwise to divided pins to bring their line of separation to the surface of one part that is turned by the key in relation to the other part that is stationary.

The object of my present invention is to simplify the construction, to increase the efficiency, and to lessen the labor and expense incident to securing the lock and latch mechanism to the door.

In carrying out my invention I employ a stationary and a rotary pin cylinder, and these are received and secured in a tubular case or holder. The stationary pin cylinder is provided with holes in line for the springs and pins and with a central opening. The rotary pin cylinder is slotted for the reception of the key and the holes for pins are in line with those in the stationary pin cylinder and extend into the key slot, and this rotary pin cylinder has a spindle that passes through the central opening of the stationary pin cylinder to engage the latch mechanism to operate the latch. The stationary pin cylinder is connected with the lock case and the face of the rotary pin cylinder turns against the end face of the stationary pin cylinder. I however prefer that the key and tumbler mechanism be complete in itself, and to that end I employ a tubular case to receive the stationary and movable pin cylinders and in which case they are held in their proper relative positions. These parts are adjustable longitudinally in an outer tubular holder secured to the lock case to provide for doors of various thicknesses, and the spindle of the movable pin cylinder is adapted to engage and operate the latch mechanism independent of the position at which the key mechanism may be adjusted and secured. This adjustment may be effected and the parts connected in position according to the measured thickness of the door before being secured to the door.

In the drawings, Figure 1 is a horizontal section through the lock and latch mechanism. Fig. 2 is a vertical section through the same. Fig. 3 is a cross section at the line *x x* of Fig. 1. Fig. 4 is a cross section at the line *y y* of Fig. 1. Fig. 5 shows the sheet metal key. Fig. 6 shows a means of connecting the key mechanism to the outer tubular holder. Fig. 7 is an elevation, and Fig. 8 a cross section at *z z*, (Fig. 7,) of a modification consisting of a telescoping spindle.

The key mechanism is composed of the fixed pin cylinder *a* having a central opening and the rotary pin cylinder *b* having a spindle *b'* which passes through the central opening of the fixed pin cylinder *a* which may form a guide or bearing for the spindle. This rotary pin cylinder is provided with slots 2, 3, for the reception of the sheet metal key *h*, and the slots may be cut or sawed in from the periphery as shown, and there are holes in the pin cylinders that are in line and receive the springs and pins, and the end face of said cylinder *b* turns against the end face of the cylinder *a* to cause the holes and pins to coincide or be separated. I prefer to make the slots 2 and 3 radial so that a central web which in width is about equal to the diameter of the spindle is left, as shown in Fig. 2, to hold the parts together and form a base for the spindle *b'*.

The sheet metal key is preferably made with an open center and straddles the aforesaid web, and the outer edges of the key come within the periphery of the rotary cylinder *b*. The key is thus steadied and an even bearing provided. I prefer to employ a tubular case *c* which receives the pin cylinders *a* and *b*. The outer end of the tubular case *c* is turned inwardly at 4 and notched for the key. The rotary pin cylinder *b* bears against said inturned flange, and the pin cylinder *a* fits within said tubular case *c* tightly and is fixed and held in place by a set screw 5 or other device. This key mechanism is complete in itself and is separable from the latch mechanism.

The outer tubular metal holder *d* and the back plate of the latch mechanism are preferably formed or connected together as one and the key mechanism as an entirety is lon-

gitudinally adjustable in this tubular holder *d* to accommodate doors of various thicknesses.

As adjusted the key mechanism is retained in the desired position within the tubular holder *d* either by the set screws 6, Figs. 1 and 3, or by the spring pin 7, shown in Fig. 6, there being groups of holes 10 to receive the set screw 6 or spring pin 7 in said tubular holder *d* at opposite sides and at intermediate places to provide for the desired adjustments.

e represents the wooden door through which a hole is made to receive the tubular holder *d*, and *f* represents the front plate or box of the latch; *f'* the latch proper, and *g* the knob by which the latch mechanism is operated presumably upon the inner side of the door *e*. The latch mechanism may be of any desired construction.

I have shown the square spindle *b'* as passing through a disk *i* at the inner end of the tubular holder *d*, and said disk is adapted to engage and operate the latch mechanism, and in Figs. 1 and 2, I have shown the knob *g* as hollow to receive the end of the spindle *b'* and to permit an endwise movement of the same and the key mechanism as the said parts are adjusted for various thicknesses of doors. This construction is preferable when the knob and key mechanism are axially in line, because less expensive, but the latch mechanism might be of such construction that the knob would be in a different location and to provide for such construction, I sometimes construct the spindle b^2, Fig. 7, telescopic.

The larger tube 8 is connected to the pin cylinder *b* and the smaller tube or stem 9 to the disk or part *i* to actuate the latch mechanism, and I prefer to employ an intermediate tube 10 and to slot the tubes 8 and 10 and place pins in the tubes 9 and 10 extending into said slots to prevent the separation of the tubes and provide for the necessary rotary movement.

It will be apparent that the peculiar construction of the pin cylinders with the stem on one passing through a hole in the other is not necessarily limited to the adjustability of the parts to doors of different thicknesses.

I claim as my invention—

1. The combination in a lock or latch with the pins and springs, of a separate rigid pin cylinder having a central opening, and means for fixing the same in its relation to the lock or latch, a rotary pin and key cylinder having a spindle passing through the central opening of the rigid pin cylinder and engaging the latch mechanism, said rotary pin cylinder being adapted to receive the key, substantially as set forth.

2. The combination in a lock or latch with the pins and springs, of a separate rigid pin cylinder having a central opening and means for fixing the same in its relation to the lock or latch, a rotary pin and key cylinder having a spindle passing through the central opening of the rigid pin cylinder and engaging the latch mechanism, said rotary pin cylinder being cut from the periphery inwardly to a depth reaching to the spindle so as to provide a web of metal between the bases of the slots, that is in line with the spindle, the pins and their holes being in line with the cuts, substantially as set forth.

3. The combination in a lock or latch with a tubular holder adapted to fit into an opening through a door, of a fixed and a rotary pin cylinder, a tubular case receiving said pin cylinders and in which they are secured, said parts forming a key mechanism adjustable longitudinally in the tubular holder to provide for doors of various thicknesses, substantially as set forth.

4. The combination in a lock or latch with the back plate and a tubular holder connected thereto and adapted to fit into an opening through a door, of a key mechanism longitudinally adjustable in said tubular holder to provide for doors of various thickness and comprising a fixed pin cylinder, a rotary pin and key cylinder, a tubular case therefor, and a spindle adapted to operate the latch mechanism, substantially as set forth.

5. The combination with the tubular holder *d* and back plate *d'* made as one, of the tubular case *c* adjustable longitudinally in the tubular holder *d* and means for connecting said parts, the pin cylinder *a* rigidly secured within the case *c*, the rotatable pin and key cylinder *b* within said case *c* and having a spindle connected therewith and extending through the cylinder *a* and adapted to operate the latch mechanism, substantially as set forth.

6. The combination with the tubular holder *d* and back plate *d'*, of the tubular case *c* longitudinally adjustable in the tubular holder *d* and having an inturned flange 4, the pin cylinder *a* held rigidly within the case *c*, the rotary pin and key cylinder *b* cut from the periphery inwardly toward the center to form key slots 2 and 3 and received within the case *c* between the cylinder *a* and inturned flange 4 and having a spindle *b'* passing through the cylinder *a* and engaging the latch mechanism regardless of the position of the tubular case *c* in the tubular holder *d*, substantially as set forth.

7. The combination in a latch with a longitudinally adjustable key mechanism, of the back plate *d'* and the tubular holder *d* connected therewith, said tubular holder *d* having groups of holes 10 in the sides, the holes of one group being intermediate to those of the other group to provide for small adjustments of the key mechanism in the said tubular holder *d*, substantially as set forth.

Signed by me this 29th day of November, A. D. 1893.

JOHN J. RIDGWAY.

Witnesses:
GEO. T. PINCKNEY,
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