

(Model.)

2 Sheets—Sheet 1.

W. H. KING.  
INDICATOR LOCK.

No. 419,607.

Patented Jan. 14, 1890.

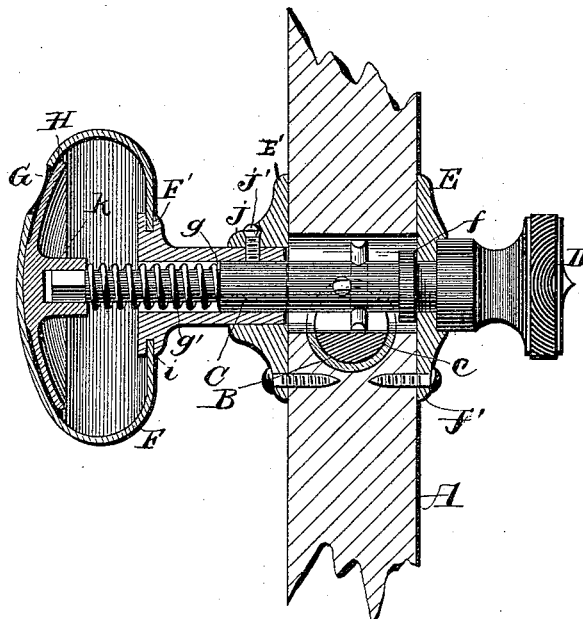
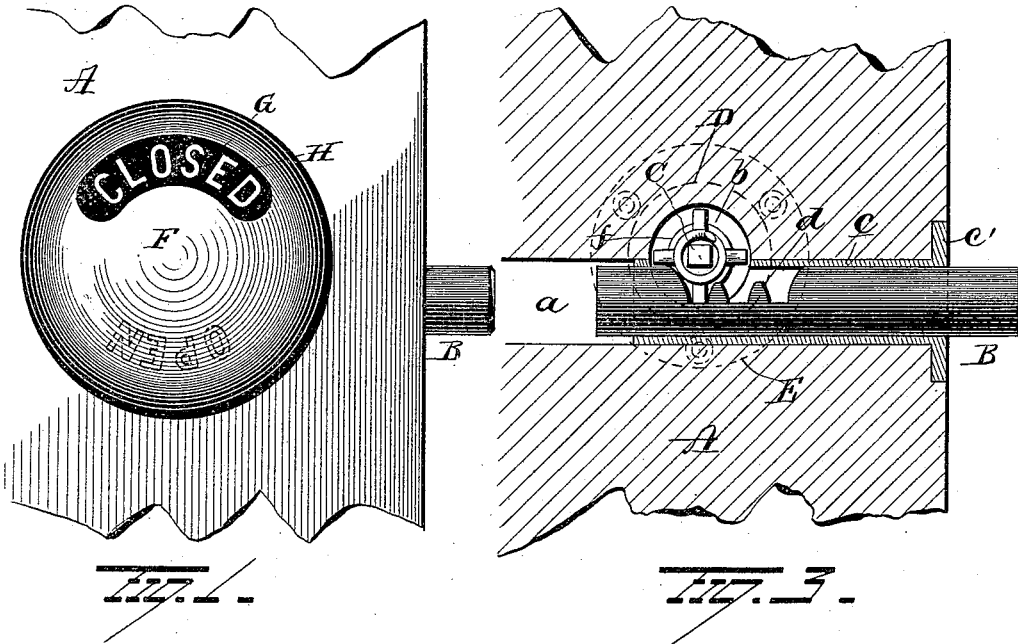


Fig. 3.

Witnesses.  
R. Nottingham  
Sam Marks

Inventor  
William H. King.

By his Attorney  
H. A. Symmon.

(Model.)

2 Sheets—Sheet 2.

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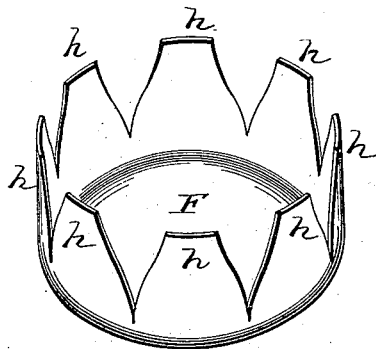
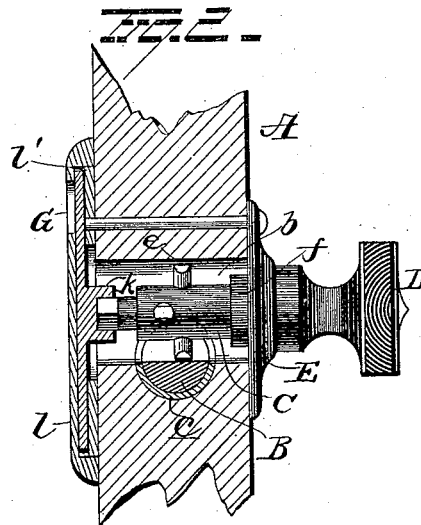
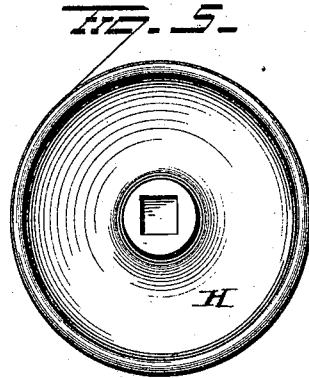


Fig. 6.

Witnesses  
*E. Nottingham*  
Saw Marks

Inventor  
*William H. King.*

By his Attorney  
*H. A. Symons.*

# UNITED STATES PATENT OFFICE.

WILLIAM H. KING, OF NEWARK, NEW JERSEY, ASSIGNOR TO A. VAN WINKLE,  
OF SAME PLACE.

## INDICATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 419,607, dated January 14, 1890.

Application filed September 6, 1889. Serial No. 323,138. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. KING, a citizen of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in locks, and more particularly to indicator-locks; and it consists in certain novel features of construction and combinations of parts, as will be hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view showing my improved indicating device applied to a door. Fig. 2 is a sectional view of a modification. Fig. 3 is a face of the device with the door partly broken away and one of the escutcheon-plates and indicating-knob removed. Fig. 4 is a sectional view of the device. Fig. 5 is a rear view of the indicating-disk. Fig. 6 is a view of the blank from which the indicating-knob is made.

A represents a portion of a door, in the outer edge of which a socket or mortise *a* is made for the accommodation of the locking-bolt, and at right angles to this socket and communicating with it a perforation *b* is made in the door a suitable distance from the edge thereof for the reception of the operating-spindle. Inserted with the socket or mortise *a* is a tubular socket-piece *c*, preferably having flanges *c'* at its outer end, adapted to lie flush with the edge of the door. At the point where the perforation *b* is made in the door the tubular socket-piece is cut into conformity with said perforation, as shown in Fig. 3. A cylindrical bolt *B*, having a series of two or more teeth *d* cut in it, is inserted into the socket-piece *c* until that portion of the bolt having the teeth is coincident with the perforation *b* in the door. An operating-shaft or spindle *C* is passed through the perforation *b* and provided at a point within the mortise with four teeth or lugs *e*, which are adapted when the shaft is rotated

to engage the teeth on the bolt and thus slide the same back and forth. The lugs *e* may be made upon the shaft in any preferred manner, but should not be in the same vertical plane. I have found that a convenient way of making the lugs is to make two perforations through the shaft at right angles to and out of line with each other and insert pins in these perforations, said pins projecting beyond the periphery of the shaft at their ends, thus producing the four lugs *d*. By thus constructing the bolt and its operating-shaft it will be seen that when the bolt is thrown a sufficient distance one of the lugs *e* will strike the shaft or spindle *C* at one end of the toothed portion thereof, thus preventing the further rotation of the spindle, and consequently limiting the movement of the bolt. The same is true when the bolt is withdrawn, one of the lugs *e* striking the spindle at the opposite end of the toothed portion, so that it is impossible for the bolt to move in either direction a distance greater than is necessary for locking and unlocking the door.

The shaft or spindle *C* is provided at one end with an integral collar *f* and an operating-knob *D*, the latter being secured to the shaft in any suitable manner. An escutcheon-plate *E* is inserted loosely between the collar *f* and knob *D* and held from longitudinal movement by said parts without in the least retarding the rotary movement of the spindle and knob. The escutcheon-plate *E* is provided with a series of perforations *f'* for the reception of fastening devices by which it may be secured to the door. The shaft or spindle *C* is made of sufficient length to protrude beyond the surface of the door on the opposite side thereof from the operating-knob *D* for the reception of a knob *F*, by means of which latter the door may be opened or closed when not locked, but which is not connected in any way with the bolt, and consequently incapable of operating said bolt.

The inner end of the spindle *C* is contracted and produces a shoulder *g* for the reception of a helical spring *g'*, placed upon said contracted portion, and the extreme inner end of the spindle is made square, for a purpose presently explained.

The knob F is preferably made of sheet metal cut and bent into proper form and secured to a hollow stem F'. The blank of the knob F is first cut in the form of a star or a disk with scalloped edges. It is bent into cup shape by means of a suitable former, and, finally, the points *h* bent inwardly toward a common center and secured with the groove *i* of the hollow stem F'. The free end of the stem is inserted into an escutcheon-plate E', secured to the door. The escutcheon-plate E' is formed with an annular flange *j*, through the wall of which a perforation *j'* is made, an aligned screw-threaded perforation being also made in the stem for the reception of a screw or other fastening device, by means of which the indicating-knob is secured to the escutcheon-plates and thus prevented from rotation.

The indicating-knob F is provided on its outer face with an elongated slot or opening G, through which a portion of a disk H, inserted within the knob, may be seen. The disk is slightly dished to conform to the contour of the inner surface of the face of the indicating-knob and provided on its rear face with a centrally-located boss *k*. The boss *k* has a squared socket made therein for the reception of the squared end of the operating shaft or spindle C, by means of which the disk H is rotated when the spindle C is turned to operate the bolt.

The spring *g'* above referred to bears at its outer end on the edge of the boss *k* and thus maintains the disk H always close up against the inner face of the knob. Painted or otherwise formed upon the disk H are the words "Open" and "Closed," these words being placed upon the disk at diametrically-opposite points and adapted alternately to appear in the slot or opening G, so that when the operating-knob is operated to throw the bolt the disk will be rotated simultaneously and the word "Closed" made to appear, and when the knob is again turned to unlock the door the word "Open" will be made to appear. It is evident that other words, such as "In" and "Out," or similar words, or any other indicative words may be placed upon the disk H instead of the words "Open" and "Closed."

The indicating-knob F may also be used to open and close the door when it is not locked, but when the door is locked the office of the knob is simply to carry the indicating mechanism.

In some cases it may be desirable to dispense with the knob F on the outside of the door and substitute therefor an indicating-plate I, as shown in Fig. 2. In this form of the invention the escutcheon-plate E' and spring *g'* will be dispensed with, the spindle C made shorter, and the indicating-disk mounted in the indicating-plate I. This plate may conveniently consist of a front dished plate *l*, having a slot or opening G, through which the indicating-disk may be seen, and a flat plate *l'* secured at its periph-

ery to the periphery of the plate *l*, between which disks the indicating-disk is revolvably held, the plate *l'* having a perforation for the accommodation of the socketed boss *k* of the indicating-plate. At diametrically-opposite points the plate *l'* is provided with screw-threaded perforations for the reception of the screw-threaded ends of rods or bolts which pass through the escutcheon-plate E and through the door, and by means of which the indicating-plate I is held to its place.

It is evident that slight changes might be made in the constructive details of my invention without departing from the spirit thereof or limiting its scope. Hence I do not wish to limit myself to the precise details of construction herein described; but,

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

1. In a lock, the combination, with a bolt having teeth, of a spindle, lugs on said spindle for engaging the teeth on the bolt, said lugs passing through the spindle and located in different planes, and a knob secured to the spindle for operating same, substantially as set forth.

2. In a lock, the combination, with a bolt, a spindle, and an operating-knob, of a rigid hollow knob and an indicating device carried by said hollow knob, substantially as set forth.

3. In a lock, the combination, with a bolt, a spindle, and an operating-knob, of a rigid hollow knob having an opening therein, an indicating-disk in the knob connected with the spindle and adapted to be seen through the opening, and a spring on the spindle for maintaining the disk against the inner face of the knob, substantially as set forth.

4. The combination, with a lock, of a hollow knob having an opening therein, a disk having indicative words arranged thereon, and devices for rotating said disk, substantially as set forth.

5. The combination, with a lock, of a hollow knob having an opening therein, and a disk having indicative words arranged thereon at diametrically-opposite sides of its center, said disk being connected with an operating part of the lock, substantially as set forth.

6. A knob made from a sheet-metal blank having a continuous series of scallops on its periphery, the said scallops being of equal length and shaped on their side edges to match the adjacent edges of the adjacent scallops, and a sleeve having a groove into which the scallops are inserted and secured, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. KING.

Witnesses:

J. H. BRECKENRIDGE,  
ABRAHAM MANNERS.