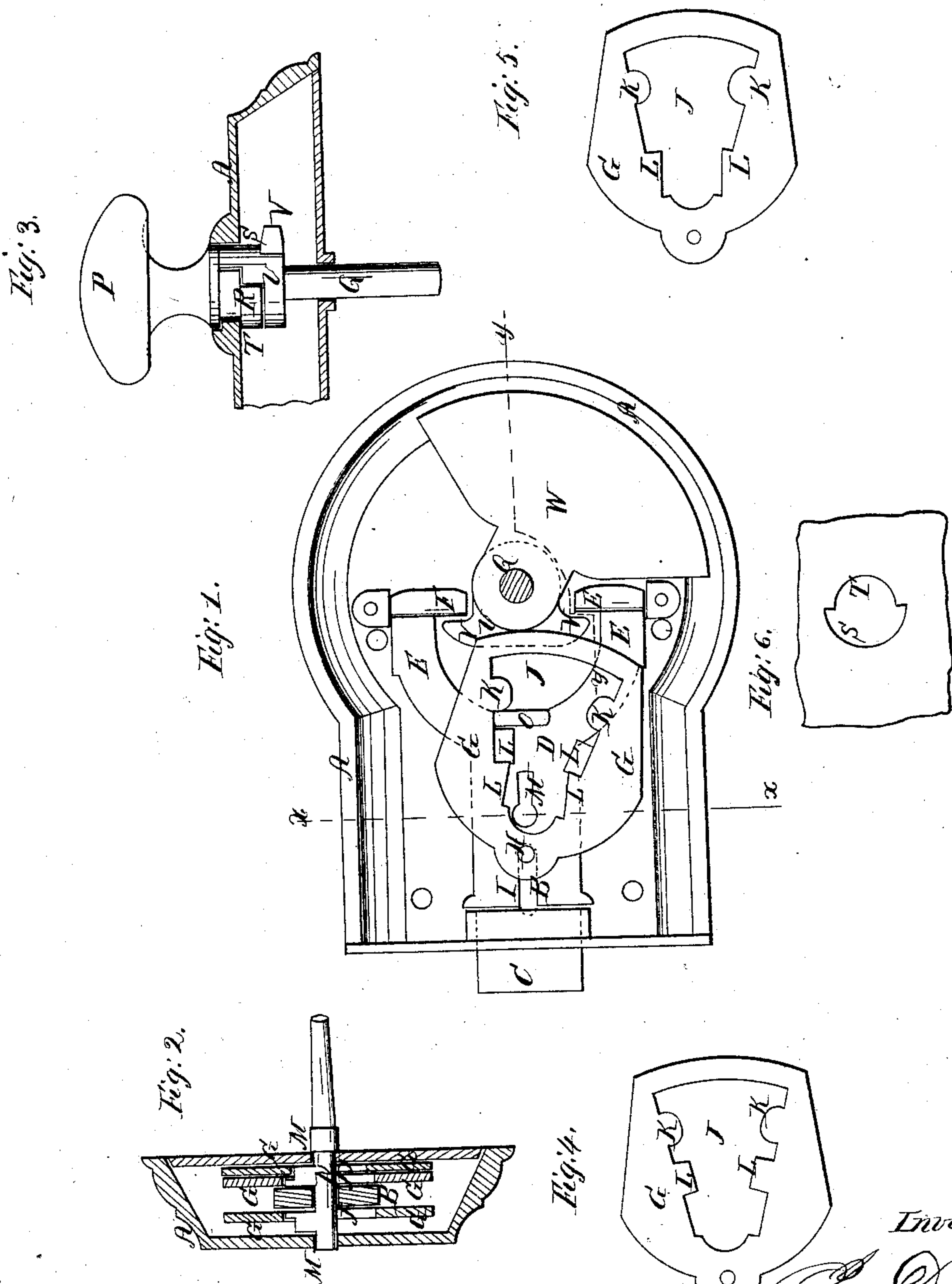


*I. D. Bush,*

*Latch,*

*Nº 55,616,*

*Patented June 19, 1866.*



*Witnesses,*  
*A. W. B. Fenington*  
*Wm. J. Turner*

*Inventor,*  
*I. D. Bush*  
*Per Wm. J. Turner*

# UNITED STATES PATENT OFFICE.

IRA D. BUSH, OF DETROIT, MICHIGAN.

## IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 55,616, dated June 19, 1866.

*To all whom it may concern:*

Be it known that I, IRA D. BUSH, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to that class of locks having a "latch-bolt," so called, which bolt, after having been drawn in by properly turning the handle or knob of the lock, (which may be connected with its tail or inner end in any of the usual modes,) is by the present improvement thrown forward or projected out of the lock-casing by means of a cam of the proper shape and weight applied to the knob or handle spindle of the lock in such a manner as to turn in conjunction with it, bearing against the tail or inner end of the latch-bolt, and thus, by its weight, throw the bolt forward or project it out of the lock-casing, this cam dispensing with the use of springs in connection with the latch-bolt, as heretofore, it furthermore being of such a shape as to work the same whether the lock-bolt when drawn in moves from the right to the left or vice versa.

This invention also consists in a novel arrangement of tumblers, which are so hung upon one or both sides of the bolt as to both slide and swing upon the same, whereby with the use of a proper-shaped key the bolt can be locked or unlocked at pleasure; and it furthermore consists in a novel manner of securing the knob shaft or spindle in and to the lock-casing, by means of which the yoke of the knob-spindle, for drawing in the bolt as the knob is turned, is also held in position to properly act upon the bolt, as will be, in connection with the other parts of the present improvements, now described, reference being had to the accompanying plate of drawings, in which—

Figure 1 is a view of the lock-casing with one of the side plates removed, showing the interior arrangement of parts for operating its bolt; Fig. 2, a transverse section taken in the plane *x x*, Fig. 1; Fig. 3, a section through a portion of the length of the lock-casing in the

plane of the line *y y*, Fig. 1; Figs. 4 and 5, detail views of two of the tumblers of the lock, and Fig. 6 another detail view.

A in the drawings represents the lock-casing; B, the latch-bolt, projecting by one end, C, from the lock-casing A, its other or inner end, D, having two curved or bent arms, E E, the extreme ends of each of which have a lug, F. Upon both sides of the lock-bolt B are tumblers G G, the number of which may be more or less, according as may be desired, but which in the present instance is three, (one upon one side and two upon the other,) the three being hung at one end toward the projecting end of the bolt B to a common pin or pivot, H', so as to loosely turn thereon, which pin passes through a slot, I, made in the bolt in the direction of its length. These tumblers are each made of the shape of a sector and of equal size, being cut out in their central portions, J, with a similar rounded projection, K, at the same points of both the inner edges of the sector-frames, but with wards or projections L upon both the inner edges of each tumbler, at similar points of both edges in one, but differently formed with regard to each other in the several tumblers.

M is the hole for the insertion of the key N in the lock, (through the bolt of which it passes,) the key being made of such a shape that by turning it in the proper direction it will not only raise or lift the several tumblers upon both sides of the latch-bolt, but at the same time move or slide them by their common center-pin in the slot I of the bolt, either toward the projecting end of the same or in the opposite direction, the length of the said slot forming the limit of the rectilinear movement of the several tumblers, which tumblers, when in the position shown in Fig. 1, with their several rounded projections K over the transverse raised lip or flange *o* at the inner end of the bolt, firmly hold and secure the bolt in position, preventing it from being moved either one way or the other or drawn in until they are disengaged from such raised flange *o*, to do which it is necessary to use a proper-shaped key which will both turn and slide the tumblers, as before explained; P P, the knobs or handles of the lock, attached to a common spindle or shaft, Q, passing transversely



through the lock-casing and turning loosely in each of the side plates, Q, of the same; R, a collar fixed to one end of the handle-spindle Q, embracing one-half the periphery of the same, which collar, when the spindle is passed through the lock-casing from its front to its rear side, is brought opposite to the larger half, S, of the opening in the front plate, and then turned around so as to rest upon the inside of the smaller portion, T, of the same opening, when placing the yoke U upon the said spindle it becomes interlocked with its half-collar, as plainly shown in Fig. 3, so that if then the knob-spindle be turned the arms of such yoke, according as the handle is turned to the right or left, by abutting against the lug of either one of the bolt-arms, will move the bolt in conjunction therewith, drawing it into the lock-casing, (it being, however, first unlocked,) which, as soon as the handle is removed from the knob, is thrown out again by the falling of the heavy or weighted sector-shaped cam W, swinging upon the knob-spindle as a center, and moving around in a suitable way of the lock-casing, as is obvious

by an inspection of the drawings without any further explanation.

From the above description it is plainly apparent that by the collar R and yoke U of the knob-spindle, arranged upon the same in the manner explained, the spindle is not only secured in the lock-casing, but the yoke also fixed upon the spindle and in position for operating the latch-bolt, as specified.

What I claim as new, and desire to secure by Letters Patent, is—

1. The sliding and swinging tumbler G, hung upon the bolt of the lock, and arranged and operating substantially in the manner and for the purpose specified.

2. The collar R of knob-spindle or shaft Q, in combination with the opening S T in the lock-plate and the yoke U, placed over such shaft and interlocking with the said collar, substantially as and for the purpose described.

IRA D. BUSH.

Witnesses:

MERRICK J. CHAFFEE,

HARRY C. ANDREWS.