(Model.)

O. H. GILBERT.

LATCH OPERATING DEVICE.

No. 345,297. Patented July 13, 1886.

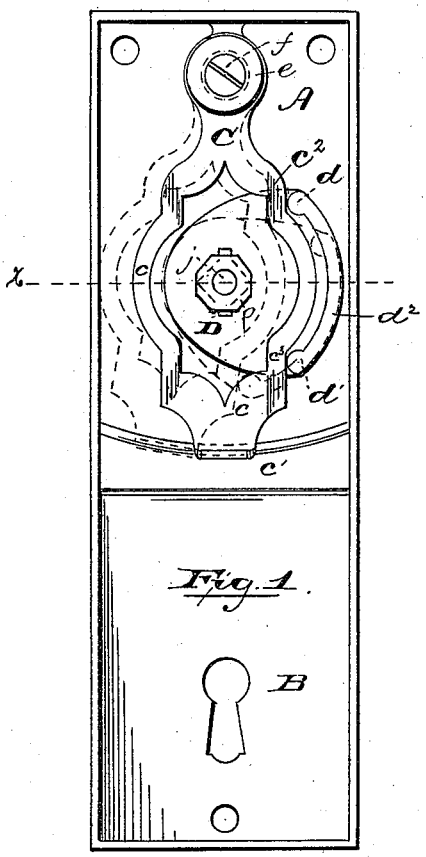

Fig. 1.

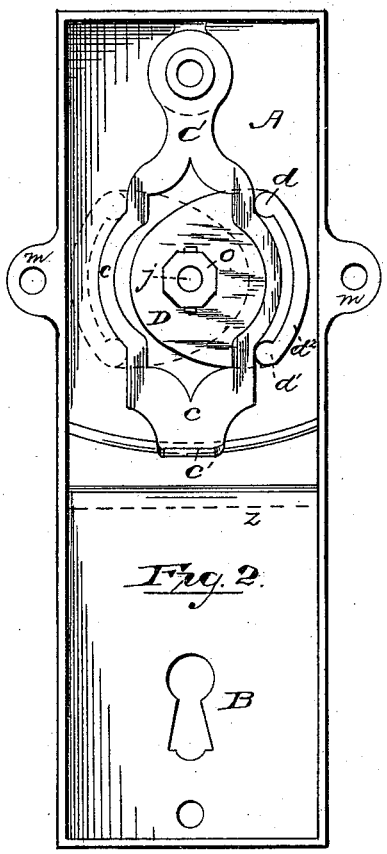

Fig. 2.

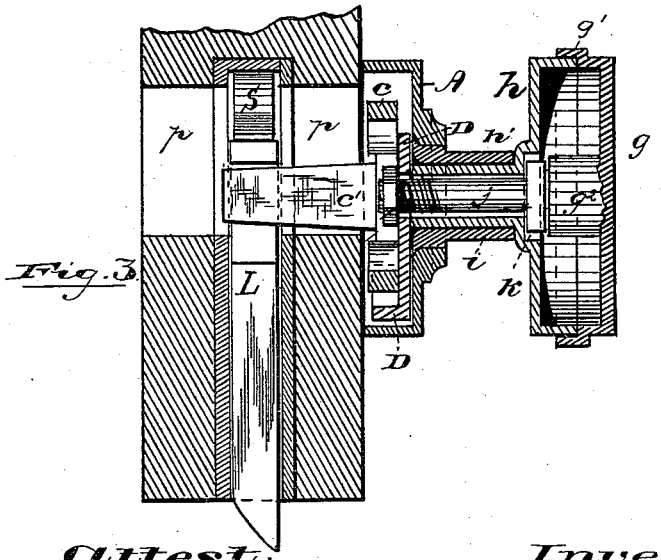

Fig. 3.

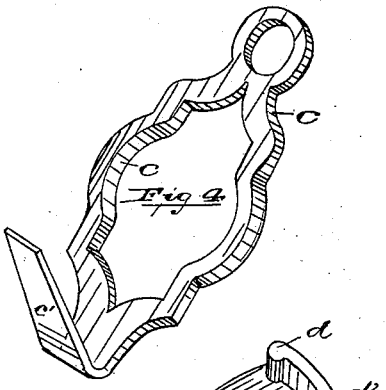

Fig. 4.

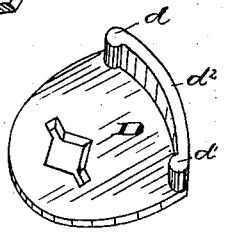

Fig. 5.

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UNITED STATES PATENT OFFICE.

ORVELLAS H. GILBERT, OF NEWARK, NEW JERSEY.

LATCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 345,297, dated July 13, 1886.

Application filed August 10, 1885. Serial No. 173,944. (Model.)

To all whom it may concern:

Be it known that I, ORVELLAS H. GILBERT, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Latch-Operating Devices; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In said drawings, in which similar reference-letters indicate corresponding parts in each of the several views, Figure 1 is a plan of the back or under side of the rose and escutcheon of my improved device, showing the relative position of the latch-operating mechanism. Fig. 2 is a view similar to Fig. 1, but showing a modified construction adapted more especially for cheap furniture. Fig. 3 is a section of Fig. 1 through line *x;* and Figs. 4 and 5 are perspective views of the pivoted lever and lever-actuating plate, respectively.

This invention relates to improvements in latch-operating mechanism, but has reference more particularly to improvements in a previous invention for a similar purpose for which application for Letters Patent of the United States was filed November 6, 1884, No. 147,252, the primary object of the invention being to provide a latch-actuating device which can be secured to the door above the lock-mortise, and also permit the use of a knob to operate the latch-actuating device so that in whatever direction the knob is turned it will draw the latch.

The device is also made reversible for either right or left hand doors or opposite sides of the same door.

The invention consists of a lever pivoted to a rose-plate off the center of the axis of revolution of the knob, &c., preferably above the same, and operated by suitable means, one form of which is illustrated in the drawings, described in the specification, and finally embodied in the clauses of the claim.

A in the drawings is the rose of the latch-operating device, within which the latch-operating mechanism is secured and arranged, and B is the escutcheon. The rose and escutcheon may be cast in one piece or separately, being divided at the point indicated by the dotted line Z on Fig. 2. When the rose is cast independently of the escutcheon, or when the rose and escutcheon are formed integrally, as indicated in Fig. 2, lugs or ears *m* are formed on each side of the rose in a line with the shank-perforation, through which the screws pass that hold the rose to the door. The latch-actuating lever C is formed substantially as illustrated, consisting, essentially, of a main portion, *c*, and a finger or bent end, *c'*, which projects into the lock-case and engages with the latch L, as indicated in Fig. 3. The main portion *c* is preferably formed with an opening therein to allow sufficient room for the nut on the end of the bolt which holds the parts together and permits the lever C to swing when operated by the handle, &c. The lever C is preferably pivoted above the shank-perforation, or above the center of the axis of revolution of the knob, and near the top of the rose, or as far up as is desirable to secure the requisite leverage, and, extending down within the rose below the shank-perforation, swings freely therein.

To operate the lever C and cause it to draw the latch, I employ a device, D, (shown in Figs. 1, 2, and 5,) which is so constructed and arranged in relation to the knob, &c., as to draw the latch whether the knob is turned to the right or to the left, and also may be reversed, so that the same furniture may be used on either right or left hand doors. To accomplish this the plate D is secured to and turns with the shank, or a bolt passing therethrough and extending out beyond the outside of the lever, said plate being provided with posts or projections *d d'*, which engage with the lever when the plate is turned and move the same, as shown by the dotted lines on Fig. 1. By reference to said figure it will readily appear that the lever will move in but one direction whether the plate D is turned in one direction or in the other. In one case the post *d* engages with the lever at c^2, in the other the post *d'* engages with said lever at c^3, and in both cases on the same side thereof.

To adapt the same device for the opposite side of the door, or for different doors, the

plate D is changed to the opposite side of the lever, as indicated by the dotted lines in Fig. 2, by simply unscrewing the nut and reversing the plate.

The rib d^2, which connects the posts, is designed, principally, to strengthen the posts.

In Fig. 1 the lever C is pivoted to a post formed on the rose and held in position by a washer, *e*, and screw *f*, the screws which hold the rose to the door being made independent of the screw which holds the lever in place. In Fig. 2 the same screw which holds the rose upon the door passes through the post and the end of the lever. The form shown in Fig. 1 is designed more especially for more expensive goods, that illustrated in Fig. 2 for cheaper furniture.

The advantage of forming the screw-lugs *m* in a line with the shank-perforation in the rose, as indicated in Fig. 2, is that the strength is provided where it is needed and the pull upon the handle is resisted directly by the screws.

S, Fig. 3, is a spring which returns the latch to its normal latching position.

As indicated in Fig. 3, the knob-handle is formed in two parts, *g h*, united by an overlapping joint, *g'*, around the periphery of the knob.

i is an outer fixed shank, which in the figure is swaged in the rose, but may be cast integrally with the rose, or in some furniture be dispensed with entirely. Within the shank *i*, and turning therein, is an inner shank, *h'*, cast integrally with the portion *h* of the knob, through which the bolt *j* passes, the head of which rests in a recess, *k*, in the portion *h* of the knob, as in Fig. 3. A projection, g^2, on the portion *g* of the knob engages with the head of the bolt and prevents the said bolt from slipping into the interior of the knob. A nut, *o*, screwed on the end of the bolt holds the lever-actuating plate D in position. An opening, *p*, is made in opposite sides of the door in a line with the latch, through which the bent ends of the lever C project into the lock-case and engage with the latch, as shown in Fig. 3.

I am aware that the form of the pivoted lever C and the plate D may be varied, in view of which I do not wish to limit myself to the identical mechanism shown; still, while the said parts may be changed and the lever operated by other means, I deem it essential for the practical working of the invention that the said lever be pivoted above the axis of the knob and shank.

By virtue of the construction of the mechanism hereinbefore illustrated and described, or any equivalent thereof, either movement of the knob, whether toward the right or toward the left, is converted into but one movement of the latch-operating lever, which draws the latch from its latching or locking engagement.

In a contemporaneous application, filed November 6, 1884, Serial No. 147,252, referred to at the beginning of this specification, is illustrated a latch-operating lever which is secured to the end of the shank and extends from above the lock-mortise down within the furniture or rose opposite to the latch, at which point it enters the lock-casing and engages with the latch. One object of this arrangement is to enable long screws to be driven into the solid wood above the lock-mortise, through the escutcheon or rose, to more securely attach the same to the door. In said application, however, the latch-lever shown can only be used with a handle which must be turned in one direction to draw the latch.

In this application the invention is designed to attain the advantages of the depending lever, and also permit the use of a rotating knob, which is greatly desired by the public, the said mechanism allowing the rotation of the knob in either direction similar to the ordinary spindle, and by virtue of the construction thereof causes either movement of the knob to draw the latch, as set forth above. The depending lever in this invention also permits long screws to be inserted into the solid wood above the lock-mortise through the rose on each side of and in a line with the knob-shank, which directly sustains and resists the pull upon the knob.

I am aware that a lever has been pivoted within the lock-case independent of the furniture and a finger projecting from a circular plate which is operated by a knob engaging with the lever or a supplemental lever in the lock-case. By this construction, however, the rose, knob, &c., is and must be placed against and secured to the door opposite to the lock-mortise, which is diametrically the reverse of my construction and purpose.

In the device to which reference is made above, the mechanism for drawing the latch consists of two levers, one of which is in permanent engagement with the latch, and the second, with which the projecting arm engages, acts upon the first lever, both of these being pivoted within the lock-case, while in my device the lever is pivoted to the furniture or rose outside of and entirely separate from the lock-case. Also, in the old device the levers and the finger are formed separately, while in my mechanism the lever which is operated by the knob through the reversible plate or equivalent mechanism and the finger that engages with the latch are formed in one piece.

By securing the entire latch-operating mechanism independent of the locking or latching mechanism, the construction and operation of the lock or latch are greatly simplified and cheapened and a much greater leverage is obtained, which renders the turning of the knob much easier.

Having thus described my invention, what I desire to claim is—

1. In latch-operating devices, the combination of a rose-plate having a shank-perforation therein, a latch-actuating lever pivoted to said rose-plate above the said shank-perforation and extending down below the latter, and having an end or finger which, when the

rose-plate is secured to the door, projects into the lock or latch case and engages with the latch, and a lever-actuating plate connected with and operated by a rotating knob, and which engages with the latch-actuating lever, causing the same to draw the latch whether the knob is turned to the right or to the left, substantially as and for the purposes set forth.

2. In latch-operating devices, the combination, with a lever pivoted within a rose above the shank-perforation and extending down below the said shank-perforation, and having a bent end adapted to engage with and actuate a latch, of a reversible plate adapted to engage with either side of said pivoted lever, and mechanism by means of which said reversible plate is caused to engage with and operate said lever, for the purposes set forth.

3. In latch-operating devices, in combination, a rose-plate, a lever pivoted within said rose above the shank-perforation therein and extending down below the said perforation, having a bent end adapted to engage with and actuate a latch, a reversible plate having posts *d d'* thereon, which engage with said lever, and a knob-handle, with which said reversible plate is connected, and by which it is operated, for the purposes set forth.

4. In latch-operating devices, in combination, a rose-plate, an outer fixed shank, *i*, a knob composed of two portions, *h g*, the portion *h* being provided with an inner shank, *h'*, having a recess, *k*, therein, a bolt, *j*, the head of which rests in the recess *k*, a reversible plate secured to the inner end of the bolt, provided with posts *d d'*, and a lever pivoted to the rose above the shank-perforation, all said parts being arranged and operating substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of July, 1885.

ORVELLAS H. GILBERT.

Witnesses:

FREDK. F. CAMPBELL,

B. L. MCNULTY.