(No Model.) 2 Sheets—Sheet 1.

R. R. BALL.

LOCK.

No. 484,392. Patented Oct. 18, 1892.

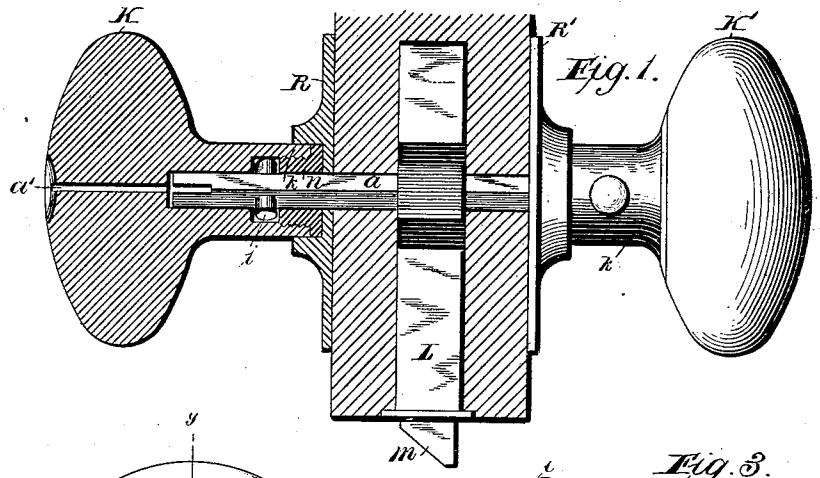

Fig. 1.

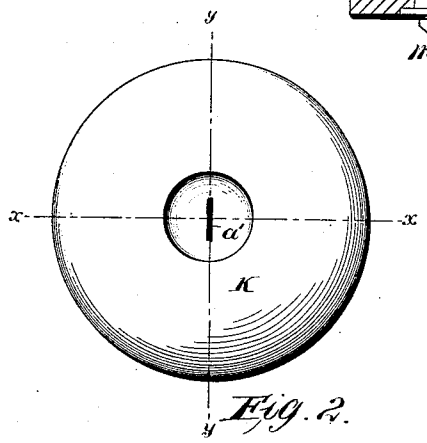

Fig. 2.

Fig. 3.

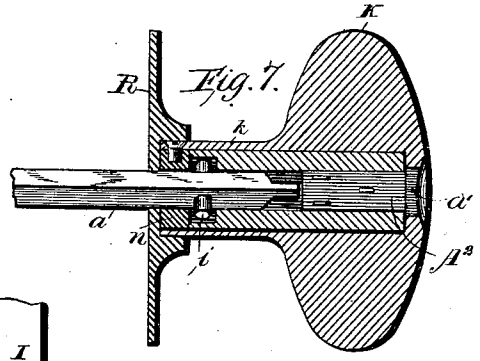

Fig. 7.

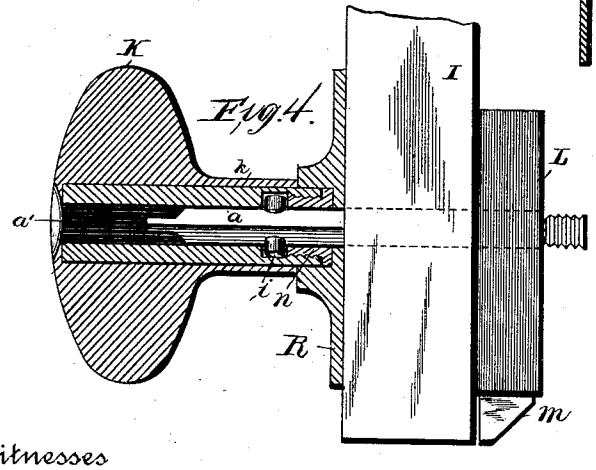

Fig. 4.

Fig. 5.

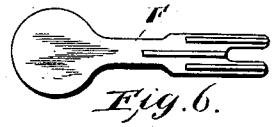

Fig. 6.

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(No Model.) 2 Sheets—Sheet 2.

R. R. BALL.

LOCK.

No. 484,392. Patented Oct. 18, 1892.

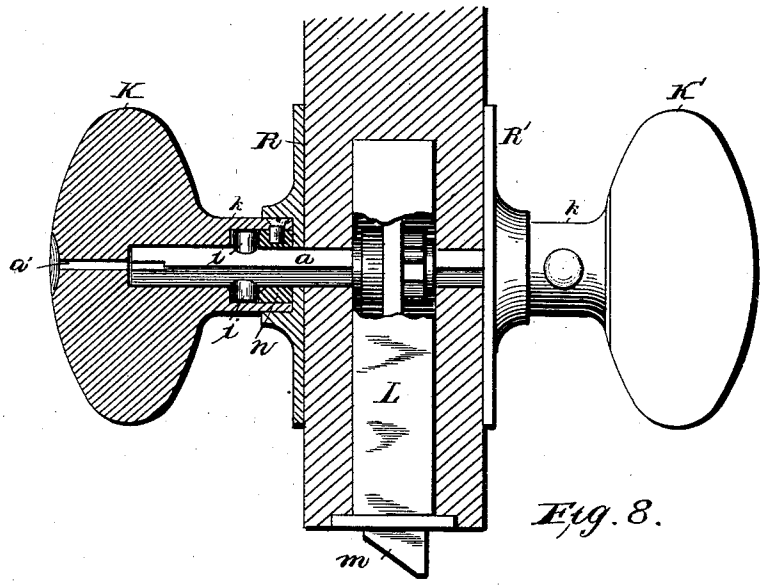

Fig. 8.

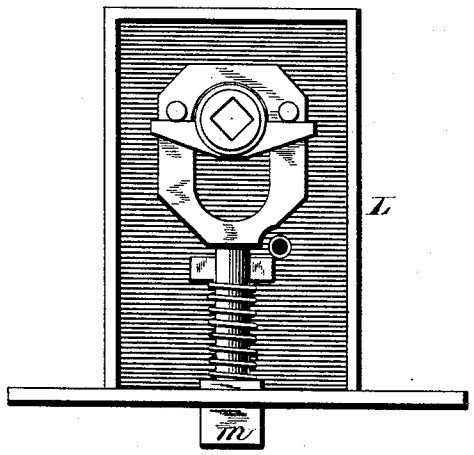

Fig. 9.

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UNITED STATES PATENT OFFICE.

ROBERT R. BALL, OF NEW YORK, N. Y., ASSIGNOR TO THE SPHERE MANUFACTURING COMPANY, OF NEW JERSEY.

LOCK.

SPECIFICATION forming part of Letters Patent No. 484,392, dated October 18, 1892.

Application filed January 2, 1891. Serial No. 376,548. (No model.)

To all whom it may concern:

Be it known that I, ROBERT R. BALL, a citizen of the United States, and a resident of [the city, county, and State of New York, have invented certain new and useful Improvements in Lock-Handle Devices; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description of my invention.

The object of this invention is to provide a lock-handle adapted for and which can be readily applied to or removed from that class of locks of common and standard make and largely in use, and in the construction of which an angular spindle enters or passes through the hub or follower, actuating the bolt by means of an aperture in the hub corresponding to the spindle.

My lock-handle as constructed performs the functions of an ordinary knob or handle, for which it can be readily substituted, and also serves independently as a lock to prevent the retraction of the bolt with which it is in use. Its use obviates the labor and expense necessitated by attaching a separate latch or deadlock, as it is readily applied to any latch-bolt mounted and in service which requires a standard spindle to actuate it.

I preferably construct my device to resemble as near as possible the knob-handles and spindles in ordinary use. Substitution is effected after removing the ordinary knob-handle by thrusting the spindle into or through the hub, tumbler, or follower of the latch or lock bolt of standard construction.

My invention consists in the improvements hereinafter described and set forth in the claims.

I also use two knob-handles mounted upon the ends of the spindle. One of the handles is rigidly attached to the spindle and the opposite handle is conjoined therewith, but free to rotate independently of it. A key is required to operate the spindle in order to retract the bolt or latch to which it is applied when my device is mounted for service.

It is understood that door-knobs loosely conjoined with an actuating-rod combined with locks and key mechanism are not new; but such prior knobs are constructed with a view to combination and use with special locks, and the locks can be used only with the special knobs adapted to them. These prior knobs are not adapted to and are constructed in such manner that they are not applicable to standard locks and latches, nor can they be used with them, whereas my device is designed and in construction is adapted to be used with such standard locks, bolts, and latches, in the construction of which an angular spindle enters or passes through the hub or follower actuating the bolt by an aperture in the follower corresponding to the spindle, which is the essence of my invention. I do not claim a specific latch or lock bolt in conjunction with my lock-handle.

The object of my invention as set forth is attained in the manner illustrated and described as follows:

Referring to the drawings, similar letters refer throughout to similar parts.

Figure 1 illustrates a top sectional view of my device on a line of *x;* Fig. 2, an edge view of a common mortise-lock, the case partially broken away to show the follower *t* of the latch-bolt *m*, also a side view of a mortise-lock with the case-lid removed and a part of a door-stile indicated by broken lines. The knob-handle K′ is partly broken away. Fig. 2 represents the face of the lock-knob handle; Fig. 3, the angular actuating rod or spindle; Fig. 4, the device when one handle is used, the handle in section on the line of *y*, Fig. 2; Figs. 5 and 6, views of the bush nut and key used in Figs. 1 and 4; Fig. 7, a central vertical section of my device on a line of *y*, Fig. 2, showing a lock-handle mounted upon an end of the rectangular spindle and a key plug or cylinder therein. Fig. 8 is a central section, partly in elevation, with lock-case partly broken away to exhibit interior mechanism. Fig. 9 is an elevation of lock-case with one plate removed, showing bolt and actuating-hub.

The lock-handles are preferably mounted for service and made so as to revolve upon a square spindle, which is inserted into a longitudinal axial hole provided for the purpose

in the handle, or a cylinder or key-plug within the handle, and the spindle is held in place by a bush-nut being screwed into the shank, the pin *i*, through the spindle, engaging the bush. Through the face of the knob-handle is a keyhole *a'*, Fig. 2.

Referring to Fig. 1, the knob K is in section on a line *x*, Fig. 2, and is constructed with a circular axial aperture and at the end of the shank *k* is fitted with a bush *n*. The longitudinal extension of the axial hole is of a diameter corresponding to the diameter of the angles of the spindle *a*, so that the spindle may readily rotate therein, the angles of the rod being in contact with the inner circumference of the axial hole. The bush *n* is bored with the same-sized axial hole 6 as shown in Fig. 5. The spindle used in ordinary construction is square, corresponding to the opening in the hub, follower, or tumbler actuating the lock-bolt of a standard lock and is provided with a pin *i*, which may be screw-threaded at the end which engages with the knob K, and with the usual screw-threaded sockets *l l l* at the end, to be connected with the inside handle K'. It is also slotted or squared at the end inserted into the lock-knob K to enable the key to properly engage with it. The roses R R' (shown in central section) are of the usual well-known construction.

L presents an edge view of a mortise-lock case, and *m* the latch-bolt.

In assemblage the spindle, with the pin *i* attached thereto, is placed in the axial hole within the handle and the bush *n* fastened in place. The spindle, being conjoined with but not fastened to the knob or shank, is free to rotate therein, and the knob freely revolves upon it and is inoperative for the purpose of actuating the latch-bolt *m* without the intermedium of a key; but can be readily operated by the handle K' upon the inside of the door when mounted for use. The spindle is square and continuous. It passes through the hub, follower, or tumbler operating the latch or bolt and is fastened upon the inner side, firmly holding and preventing the removal of the lock-handle K and not requiring auxiliary means to fasten the lock-handle when mounted for service.

As illustrated by Figs. 1 to 4, inclusive, the device is in the simplest and cheapest form to attain the object hereinbefore mentioned—that is, its adaptability to standard lock and latch bolts, in the construction of which an angular spindle enters or passes through the hubs or followers, the rod being spindle-iron of standard size, corresponding to the openings in the said hubs or tumblers actuating the said bolts or latches.

I do not require nor do I make a specially-constructed lock-bolt nor means for engaging the actuating-spindle therewith. A plan or top view of my device is shown in Fig. 4 as applied to a surface or rim-lock and when only one handle is used. I represents a portion of a door-stile, L an edge view of a lock-case, and *m* the latch-bolt. The lock-handle K is shown in section on a line of *y*, Fig. 2. The shank *k* is extended into the knob proper in the form of a cylinder. The spindle *a* is attached and works as set forth in Fig. 1. The cylindrical extension of the shank *k* is slotted for the keyhole *a'*, and the insertion of the key is complicated by wards, the key F, Fig. 6, being adapted thereto. The knob-handle is mounted for use as hereinbefore set forth and fastened with a nut *n'*. A pin upsetting the spindle at the end projecting through the lock or other suitable manner can be substituted, or a handle may be used, as when applied to rim-locks. This form, Fig. 4, is adapted to use in places when contact is desired with but one side, and a second handle would be useless. I have constructed my device in the absence of the second handle K' with a nut *n'* upon the end of the spindle. A key when inserted into the keyhole *a'* engages the spindle, connecting the handle and spindle, so that by turning the handle the spindle and bolt are accordingly operated.

Fig. 7 is a lock-handle in section on a line *y*, Fig. 2. The handle K shows a key-plug or cylinder A^2 therein, fitted so as to revolve freely within the handle, the spindle *a* is broken transversely with a section in the lock-handle, and the parts are all assembled as is hereinbefore set forth. The key turns the spindle independent of the handle, and its insertion is complicated by wards, as is hereinbefore set forth; or in lieu thereof I adapt any key mechanism of standard make as a locking medium. By this construction of my lock-handle I attain the object of this invention—its adaptability to that class of standard locks wherein an angular spindle enters or passes through the hub or follower to retract the bolt by means of an aperture in the hub corresponding to the spindle and capable of being substituted for ordinary knobs or handles in common use already mounted for service, a salient feature being its capability for substitution without disturbing the locks, lock-bolts, latches, or roses already attached to the doors or woodwork, and without any defacement necessary thereto.

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

1. The combination of an angular knob-spindle, a knob or handle revoluble thereon and provided with a keyhole, and a key to pass through the hole in the knob to directly engage and positively turn the spindle, all substantially as described.

2. In a lock device, the combination of an angular knob-spindle, a sleeve or cylinder free to revolve on said spindle, a knob or handle revoluble on said cylinder, and a key

adapted to pass into the cylinder and to directly engage and positively turn the spindle, all substantially as described.

3. In a lock device, the combination of an angular knob-spindle, a rigidly-mounted knob on one end of said spindle, and a knob or handle mounted to revolve on the other end of the spindle and provided with a keyhole, and a key adapted to pass through the hole in the revoluble knob to directly engage and positively turn the spindle, all substantially as set forth.

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