(No Model.)

W. F. BEASLEY.

INDICATOR LOCK.

No. 499,501. Patented June 13, 1893.

Fig. 1.

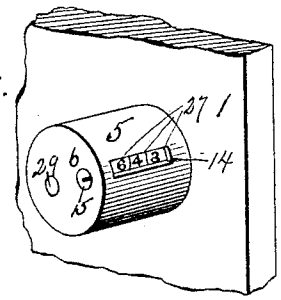


Fig. 2.

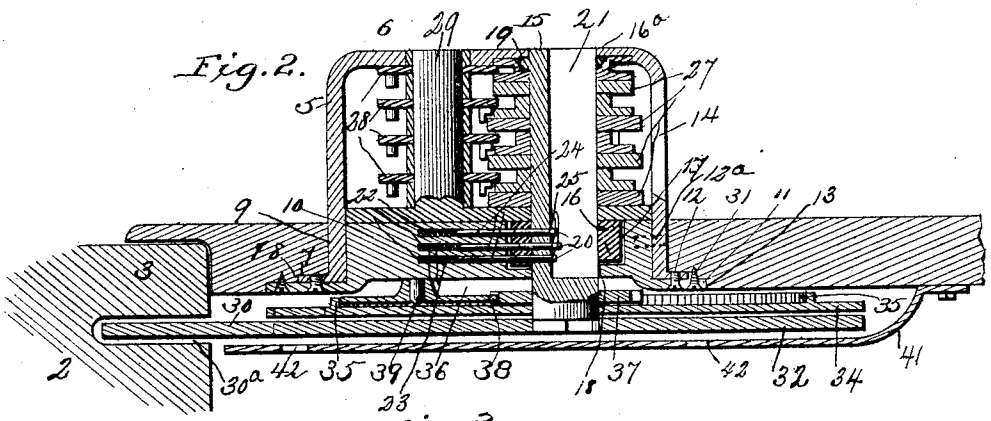
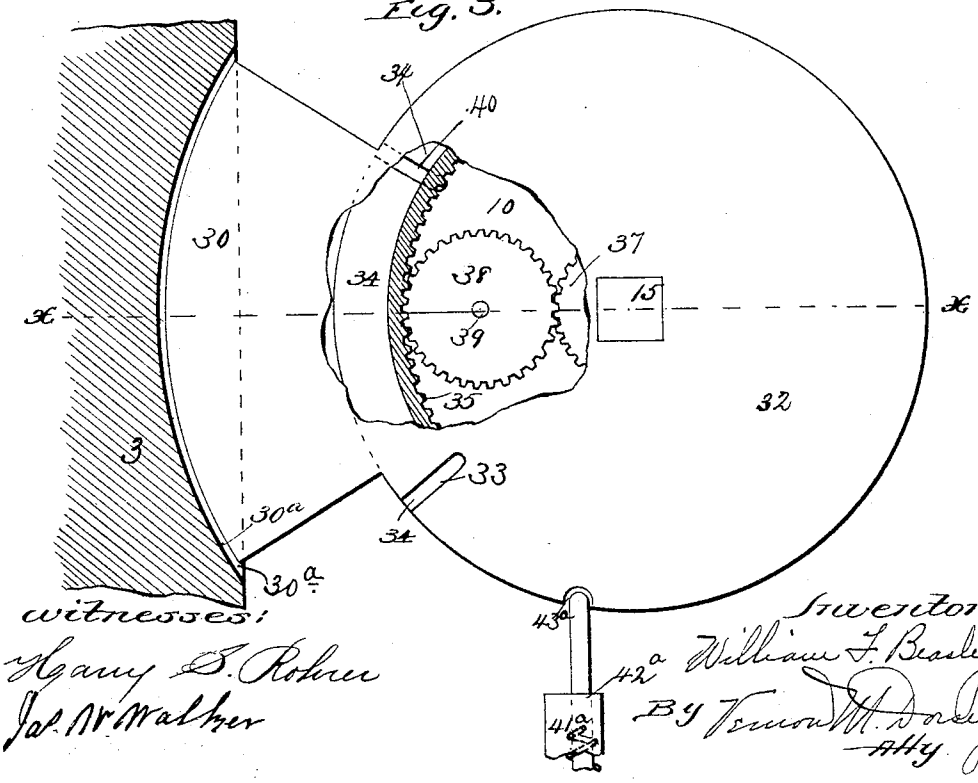


Fig. 3.



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UNITED STATES PATENT OFFICE.

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INDICATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 499,501, dated June 13, 1893.

Application filed February 10, 1893. Serial No. 461,809. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BEASLEY, a citizen of the United States, residing at Oxford, in the county of Granville and State of North Carolina, have invented certain new and useful Improvements in Door-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 present invention relates to locks adapted to be used with doors, drawers, &c., and it consists in a registering lock of the character described in Letters Patent of the United States, No. 220,124, granted to H. Clarke, on the 30th day of September, 1879, the said lock having a locking plate secured to the barrel thereof, while the shell of the said lock extends through the thickness of the door, &c., and projecting from the forward face thereof, serves as a handle therefor, and it further consists in the construction, arrangement and combination of the several parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by similar marks of reference. Figure 1 is a perspective view of a door having my invention applied thereto. Fig. 2 is a horizontal section through the door and lock thereon, taken on a line *x*—*x* of Fig. 3. Fig. 3 is a rear view of a door with my invention applied thereto with the cover removed.

The door 1, is shown as contained in the suitable frame 2, the door having a beading 3 thereon which covers the joint between the two former. A circular aperture 9 is cut in the door, through which projects forwardly the shell 5, the forward end of the said shell being closed by a plate 6, formed by preference integral with the shell, while the rear end of the shell has the outwardly projecting annular flange 7 thereon which rests in a corresponding annular step 8 in the door and surrounding the rear of the aperture 9. A block 10 fits within the rear of the shell 5, it having an annular flange 11 thereon, which rests over the flange 7 on the shell, to which it is secured by rivets 12, although it is evident that the block may be secured within the shell by pins projecting through the walls of the shell and into the block (as indicated in dotted lines at 12^a, Fig. 2) in which case the flange 7 on the shell may be dispensed with. The flange 11 on the block 10 rests within a step 13 in the thickness of the door, and surrounding the aperture 9, so that the rear face of the said block is flush with the rear face of the door, while the block itself, is by preference, of such a thickness that the forward face thereof is either flush with the forward surface of the door, or a little in the rear thereof, so that the entire space in the said shell in front of the forward face of the door can be occupied by the indicating disks, to be hereinafter mentioned, which are visible through a glazed slot 14 in the shell. A barrel 15 is mounted within the said shell, the forward end of the said barrel being journaled in an aperture 16^a in the plate 6 of the cell, while a button 16 is rigidly secured on the said shaft near the rear end thereof, and is contained in a circular depression 17 in the forward face of the block, the rear end of the barrel passing through an aperture 18 in the block to, the rear of the door, where it is squared or reduced to other angular form. It will be seen that the button 16 by bearing on the block prevents the rearward movement of the barrel, and that the shoulder 19 formed on the forward end of the barrel, by bearing on the rear face of the plate 6, prevents a forward movement of the barrel, which is at the same time capable of rotating within the casing. Radial holes 20 are formed in the button 16 and in the rear portion of the barrel, in line therewith, the inner ends of the said holes communicating with the longitudinal slot 21, which is formed within the barrel and extends from the front thereof to near the rear, while similar holes 22 are formed in the block 10 in alignment with the holes 20. Springs 23, and pins 24, and 25 are contained, in the holes 20 and 22 the springs 23 being adapted to be forced back, flush with the surface of the button by means of a key inserted in the said slot 21, as is described in the hereinbefore mentioned patent to Clarke. A series of indicating wheels 27 are loosely journaled on the barrel, and have on their periphery a series of numbers 0 to 9 inclusive. The said wheels are adapted to be thrown on each revolution of the barrel,

by means of a series of disks 28 journaled on a post 29 projecting forwardly from the forward surface of the block 10, as is also described in the said Letters Patent. The angular rear end of the barrel, which as before stated projects to the rear of the door, has secured thereon the locking plate 30, which is so mounted thereon, that when the barrel is in a position to be locked against rotation by the pins 24, the arc-shaped end of the plate projects beyond the edge of the door, and when the latter is closed, into a recess 30^a in the door frame, thus preventing the door from opening. It will be seen that by inserting the key the barrel will be unlocked and capable of rotation, and that upon rotating it through a quarter of a complete revolution, the locking plate will be so moved as to lie entirely behind the door and clear the door frame, and I so adjust the registering mechanism that on the beginning of this quarter revolution, the registering wheel will be thrown, thus rendering it impossible to open the door without throwing the register, which will be detected by reading the state of the register through the glazed aperture in the shell and comparing it with the previous reading. It will be impossible to now withdraw the key until the barrel is rotated through the remaining arc of two hundred and seventy degrees, again locking the door and bringing the holes 20 and 22 again in line.

In order to prevent the removal of the screws 31, which hold the shell in the door and which pass through the flange 11 of the block 10, into the thickness of the door, I by preference form the locking plate, as shown, that is to say in form of disk 32, of sufficient size to entirely cover the rear of the block 10 and flanges 11 thereon in every position of the barrel, the said disk having projecting therefrom the wing or locking plate proper 30, while a single radial slot 33 is cut in the said disk, and is adapted to the rotation of the said barrel to successively uncover the heads of the screws 31. This permits the removal and replacing of the shell on the door, but at the same time renders it more difficult to remove the screws surreptitiously. It will be seen that the projecting shell serves as a handle for the door.

In some cases where additional security from the unauthorized removal of the lock is required, I use the following construction, which is shown in Fig. 3. I cause the rear of the barrel to project a sufficient distance to permit a second disk 34 of the same size as the disk 32, but without the wing 30, to be loosely mounted on the barrel between the disk 32 and the rear face of the door, the said under disk being slotted as at 40, and having formed on its rear face an internal crown gearing 35, which is concentric to the barrel, and cut away a portion of the rear face of the block, as at 36 to receive the pinion 37, keyed on the barrel, and a driving pinion 38, loosely mounted on a post 39, projecting from the rear of the block, the relative size of the pinions 37, and 38 and internal gearing 35 being such that it will require a number of revolutions of the barrel to cause a complete revolution of the under disk 34, and thus, by continued rotation of the barrel, the slot 40 in the disk 34, and the slot 33 in the disk 32, will be successively and simultaneously brought over the several screws, &c., in the flange 11, which may be then unscrewed by inserting a screwdriver through the said slots, the great change in the state of the register caused by the said rotation of the barrel, serving as a means of detection of the tampering with the fastening of the block. I may also cover the disks 32 and 34 in the barrel by a casing 41 secured in the rear face of the door, and provided with apertures 42, opposite to the screws in the flanges of the block, to permit their removal, the said casing being of a sufficient size to permit the locking wing 30 to be rotated under it, and in this case the disk portion 32 of the locking plate 30 may be dispensed with, the said disk 32, serving when the casing 41 is not used, as a cover for the under disk 34.

When it is desired to use the double key system on a lock constructed in this manner, I apply a second lock 41^a to the door, the said lock having a spring pressed bolt 42^a, the projecting end of which is received in a recess 43^a in the plate 32, it thus locking the plate against rotation, but it will be seen that by retracting the bolt 42^a by a second key inserted in the lock 41^a, and held in that position, the plate may be turned until the locking wing thereon has passed opposite the bolt, when the bolt may be released by the second key, and will then bear against the periphery of the wing, and will, upon the passage of the wing upon the continued rotation of the barrel, be pushed out and bear upon the periphery of the disk or plate 32, and will upon the completion of a locking rotation of the disk or plate, and when it has become fully locked, slip into the recess 43^a, in the plate, thus again locking the plate against rotation.

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

1. The combination in a door lock, and a shell adapted to project forwardly through the door and serve as a handle, a rotating barrel projecting through the said shell, a locking plate secured on the rear end of the said barrel, and a registering mechanism recording the rotations of the said barrel and contained in the said shell, substantially as described.

2. The combination in a door lock, of a shell adapted to project forwardly through the door and to serve as a handle, of a block secured in the rear end of the said shell and adapted to be fastened to the rear of the door, a barrel passing through the front of the said shell, and through the block; a locking plate se-

cured on the rear end of the said barrel, and a registering mechanism contained in the said cell and adapted to register the rotations of the said barrel, substantially as described.

3. The combination in a door lock, of a shell adapted to project forward from the face of the door, and to serve as a handle therefor of a block secured in the rear end of the said shell, and having an annular flange thereon adapted to be secured to the rear surface of the door; a barrel passing through the front of the said shell and through the said block; a locking plate secured to the said barrel, and registering mechanism contained in the said shell and adapted to register the rotations of the said barrel, substantially as described.

4. The combination in a door lock, of a shell adapted to project forwardly from the face of the said door, and to serve as a handle therefor, of a block secured to the rear end of the said shell, and having an annular flange thereon, adapted to be secured to the said door; a barrel journaled in the face plate of the shell and in the block, and projecting to the rear thereof; registering and locking mechanism for the said barrel, contained in the said shell, and a locking plate secured to the rear end of the said barrel, the said plate being of a sufficient size to entirely cover the said blocks, and having a slot therein, and a locking wing thereon, substantially as described.

5. The combination in a lock, of a rotating barrel, a mechanism registering the rotations of the said barrel, a locking plate secured to the said barrel, a pivoted slotted disk, covering the fastening of the said lock, and differential gearing between the said barrel and disk, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. BEASLEY.

Witnesses:

VERNON M. DORSEY,

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