(No Model.)

G. L. BARNEY.

LOCK.

No. 551,151. Patented Dec. 10, 1895.

Fig. 1.

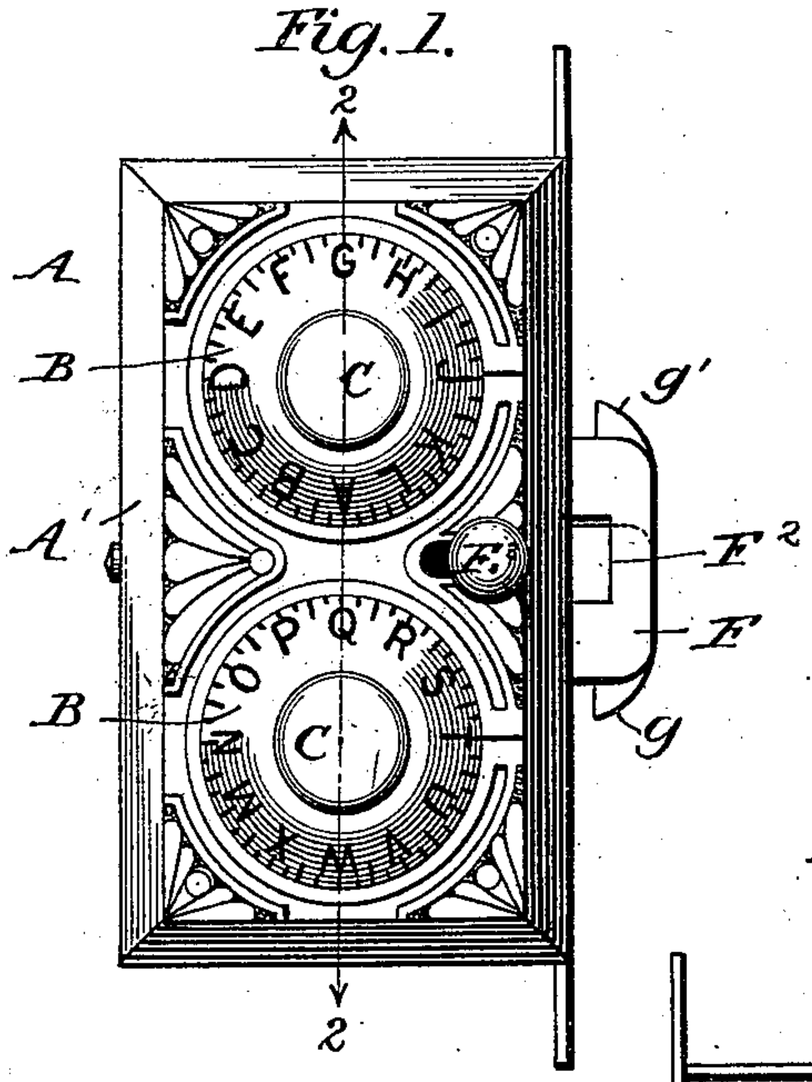

Fig. 2.

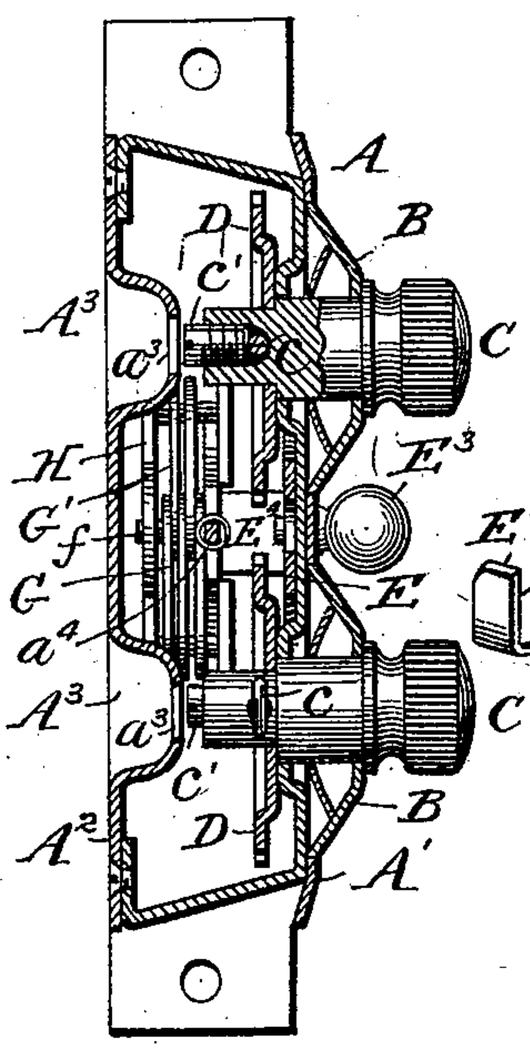

Fig. 4.

Fig. 3.

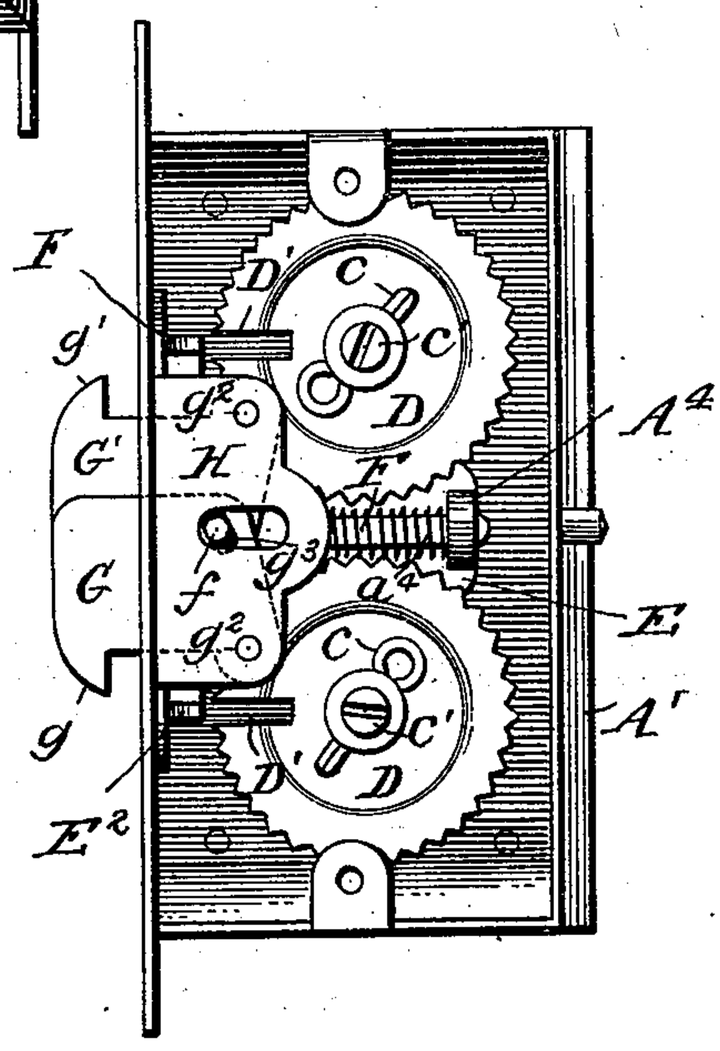

Fig. 5.

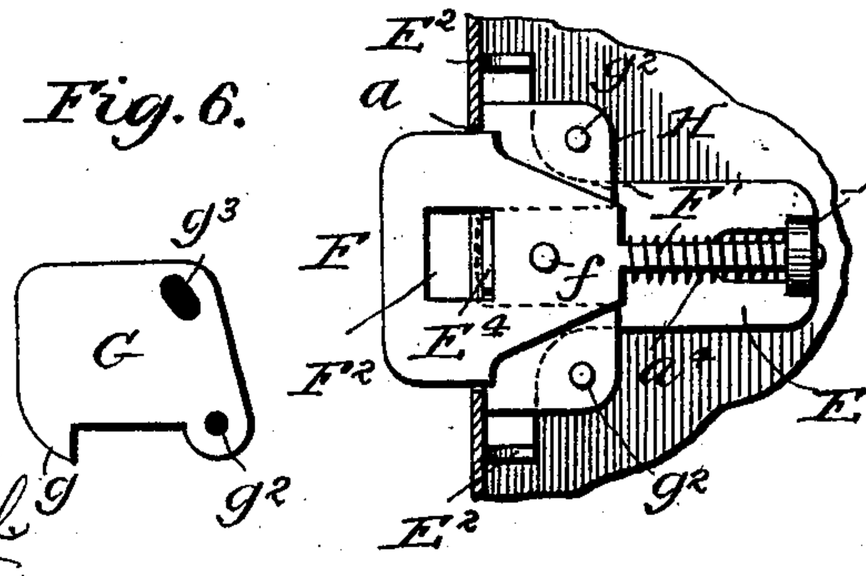

Fig. 6.

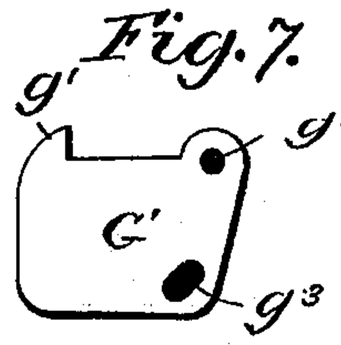

Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE L. BARNEY, OF INDIANAPOLIS, INDIANA.

LOCK.

SPECIFICATION forming part of Letters Patent No. 551,151, dated December 10, 1895.

Application filed January 21, 1895. Serial No. 535,695. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. BARNEY, a citizen of the United States, residing at Indianapolis, Marion county, State of Indiana, have invented certain new and useful Improvements in Keyless Locks, of which the following is a specification.

My invention relates to what are generally known as "keyless" locks, and it has for its object primarily to adapt such locks for use in connection with desks, trunks, pianos, and the like, where the bolt is desired to clamp and hold the parts together against strain in the plane of the bolt; and to these ends my invention consists in the various features of construction and arrangement of parts, substantially as hereinafter more particularly pointed out.

Referring to the accompanying drawings, Figure 1 is a plan or face view of a lock embodying my invention. Fig. 2 is a vertical transverse section on the line 2 2, Fig. 1. Fig. 3 is a rear view of the lock, the back plate being removed. Fig. 4 is a perspective view of the latch-plate. Fig. 5 is a detail sectional view showing the latch, the hooks or detents being removed. Figs. 6 and 7 are detached views of the hooks or detents.

My invention is shown embodied in a keyless lock of the general class or type illustrated in my prior patent, No. 471,262, which works on the permutation principle, there being one or more dials on the face of the lock adapted to be operated by suitable devices and to set one or more tumblers or wheels in proper position to permit of the latch being retracted, and in the present instance I have shown a knob for the purpose of retracting the latch after the dials and tumblers have been properly set into position, although, of course, my invention may be embodied in a construction wherein the latch is retracted by moving one of the dials substantially in the manner set forth in my application, Serial No. 536,118.

The main features of construction of the lock illustrated herein are shown typically only, as the novel features of my invention may be used in connection with the other features shown, or with other equivalent structures and arrangements of parts; but the arrangement shown I find to be a convenient one and well adapted for the purposes for which it is intended.

The lock comprises a case A, which may be of any suitable construction, and in which A′ represents the face-plate, which may be ornamented, if desired, and A^2 the rear protecting-plate, which in this instance is provided with depressions A^3, stamped or otherwise formed in the plate, and having openings a^3 at the bottom of the depressions to permit the insertion of a proper implement for adjustment or setting the tumblers or changing the combination without the necessity of removing the parts of the case.

In the present instance I have shown the lock as being provided with two dials B, which are mounted in recesses formed in the face-plate A′, and are connected to be operated by the knobs C C, respectively, these knobs extending through openings in the case of the lock and carrying on their inner portions or stems a tumbler D, adjustably secured to the stems in any suitable way, as by means of the pins *c* and set-screws *c*′, fitting openings in the end of the knob-stem. These tumblers may be of any desired shape or construction, and, as shown, are provided with serrated edges and with a slot D′, which when in proper position permits one of the dogs of the latch-plate to pass beyond the periphery of the tumbler to allow the latch to be operated.

So far (as before intimated) the construction of the lock is old, as embodied in my prior patents, and forms no part of the present invention further than the elements co-operate with the other elements of the lock hereinafter described, and these old elements may be varied by substituting other equivalent or well-known forms for those set forth.

Mounted in the case is a latch-plate E, which is arranged to slide on the plate in any suitable way, and in the present instance it is provided with a slot E′, embracing a stud A^4, and it is further provided with one or more dogs E^2, arranged to co-operate with the slots D′ in the tumbler, and in this instance it is provided with a knob E^3, projecting through a slot in the face-plate, by means of which the latch-plate may be manually operated when the tumblers have been properly adjusted to operate the latch and the hooks or detents forming a portion thereof, in the manner

hereinafter set forth. The latch-plate is further provided with a tongue E^4, which in the present instance extends into a slot or recess in the plate F, for the purpose of operating it, as hereinafter stated.

The latch consists of a plate F in connection with a number of hooks or detents G G', comprising what may be termed a "composite latch," and this is mounted in the case in any suitably way, and in the present instance I have shown a housing H, secured in the interior of the case and forming a support for the hooks or detents forming a portion of the latch and serving as a guide for the plate portion of the latch, and arranged adjacent to the opening *a* in the case, through which opening the latch projects. The plate F of the latch in the present instance is connected to or formed with a stem F', which extends through an opening in the stud A^4, and is under the stress of a spring a^4, which tends to normally project the plate through the opening in the case, and the plate is further formed with a slot or recess F^2, into which the tongue or extension E^4 of the latch-plate extends to move the plate and operate the latch.

Mounted in the housing are the hooks or detents G G', forming a portion of the latch, and these are shown as being substantially rectangular in shape and as having the projections *g g'*, which form the actual holding or engaging portions of the latch when it is locked. These hooks or detents are pivotally mounted in the housing on bearings passing through openings g^2, which in the present instance are arranged adjacent the side of the hook having the projections *g g'*. The hooks are also provided with openings g^3 adjacent their opposite sides, and these openings are shown in the shape of elongated slots angularly arranged with relation to the hooks and adapted to receive a pin *f* for operating them. While the hooks or detents are preferably substantially rectangular, they may be any other shape, the essential feature being that they have pivotal points, projections, and slots or other means by which they may be swung upon the pivots in operating the lock; but the rectangular shape indicated is not only convenient and renders the hooks strong, but furnishes a finished bearing to the latch, which is desirable.

There may be as many hooks or detents as desired, two being essential, one on each side of the plate F, in order to properly engage the keeper, five being shown in the present instance, and all operated by the same pin *f*.

Such being the preferred construction of my invention, the operation will be readily understood from what has been stated above, and I do not deem it necessary to describe the manipulation of the tumblers which permit the movement of the latch-plate, as that is well understood, and assuming that they have been properly set and adjusted, by operating the knob E^3, the latch-plate E is moved and its tongue E^4 engages the slot F^2 in the plate F of the latch and withdraws the same. At the same time the pin *f*, extending through the elongated slots g^3 in the hooks or detents, tends to rotate the hooks on their pivot-pins g^2, thereby causing the projections *g g'* to be drawn inward and downward from the keeper, so that the latch is disengaged. As soon as the pressure on the knob E^3 is relieved the spring a^4, acting on the plate of the latch, forces it outward and the pin *f* positively rotates the hooks or detents on their pivot-pins, forcing the projections outward to engage the keeper.

It will be observed that the plate F is arranged in front of the hooks or detents, which serves not only the purposes hereinbefore described, but also prevents the insertion of an instrument or tool to surreptitiously open the lock by forcing the hooks out of engagement with the keeper. In Fig. 5 the slot F^2 is shown of considerable width, which permits the latch to be withdrawn without operating the latch-plate; but by contracting said slot to the dimensions indicated in dotted lines therein the latch cannot be moved without moving the latch-plate E, and thus the lock is rendered practically unpickable, except by properly manipulating the dials to bring the tumblers in proper position to allow the movement of the latch-plate.

In some instances the plate F may be dispensed with and the hooks or detents operated by the pin *f*, secured directly to the latch-plate E, the spring a^4 operating directly on the latch-plate.

It will thus be seen that I provide a simple, cheap, and at the same time effective construction, as all the parts of the lock may be made from metal struck up or otherwise formed, requiring little or no tooling, and when put together the parts co-operate with each other without any nice adjustment or fitting, and the whole forms a safe and practically unpickable keyless lock adapted for many uses unprovided for in the former locks of this character.

What I claim is—

1. In a keyless lock, a latch comprising two or more hooks having outwardly extending lateral projections, the hooks having pivotal points near their outer edges and having slots near their inner edges, a pin engaging the slots of all the hooks, and keyless locking devices controlling the movements of the pin, substantially as described.

2. In a keyless lock, the combination with the keyless locking devices, of a latch-plate, a latch having hooks or detents provided with lateral extensions to engage the keeper, and a pin engaging the hooks and connected to be operated by the latch-plate, substantially as described.

3. In a keyless lock, the combination with the slotted tumblers, of a latch-plate provided with dogs controlled by said slotted tumblers, a latch comprising a plate and hooks provided with projections to engage the keeper,

and connections between the latch-plate and latch for moving the same, substantially as described.

4. In a keyless lock, the combination with the keyless locking devices, of a latch plate controlled by said devices, a latch comprising a slotted plate and hooks provided with projections, a tongue on the latch-plate engaging said latch, and a pin for engaging the hooks for operating the same.

5. In a keyless lock, a latch comprising a spring-actuated plate and a series of hooks pivoted at their outer edges, and connections between the plate and hooks whereby they are withdrawn inward, substantially as described.

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

GEORGE L. BARNEY.

Witnesses:
S. T. KENDALL,
E. L. TIMBLIN.