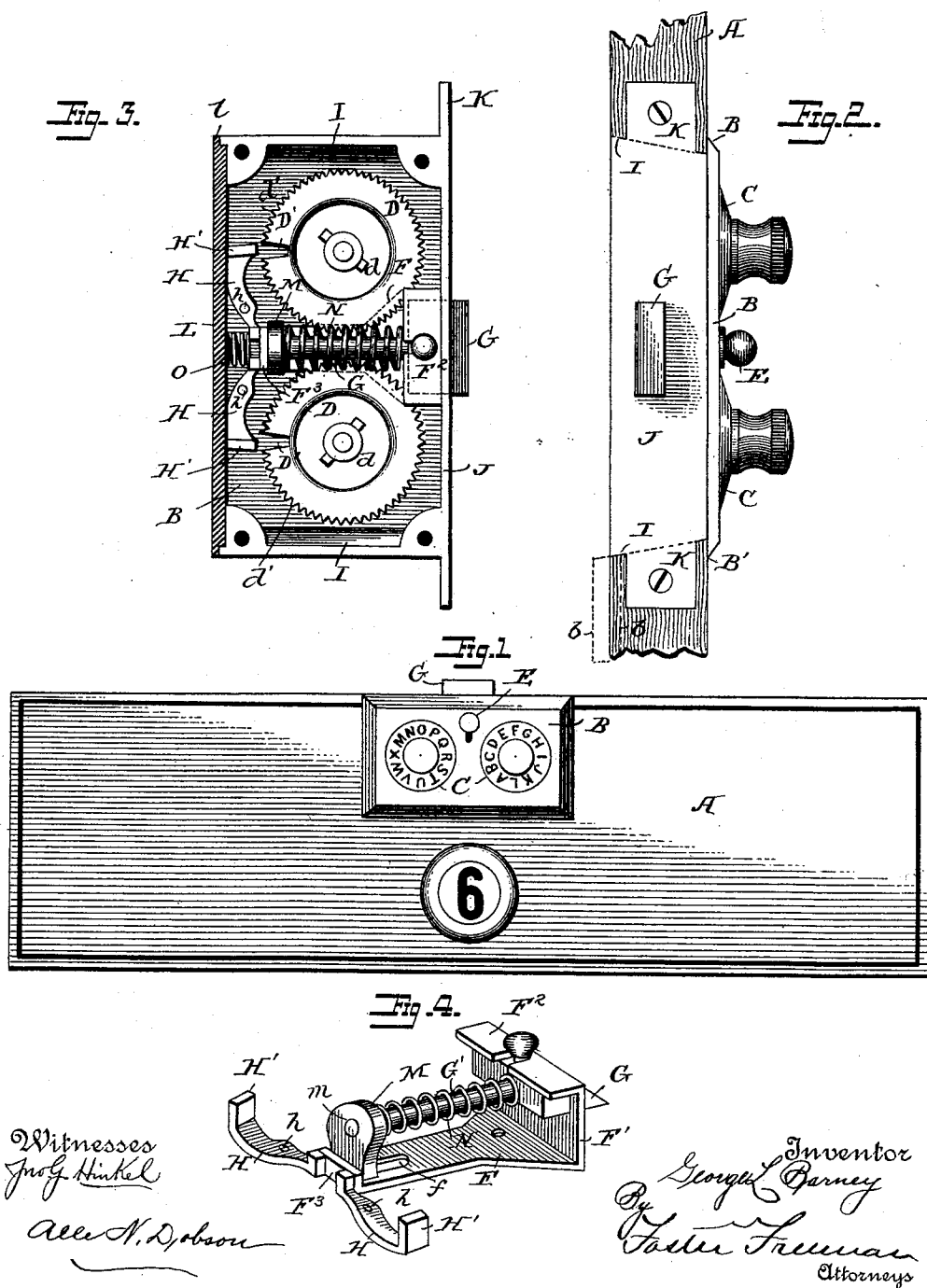


G. L. BARNEY.
COMBINATION LOCK.

Patented Sept. 6, 1892.



UNITED STATES PATENT OFFICE.

GEORGE L. BARNEY, OF INDIANAPOLIS, INDIANA.

COMBINATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 482,222, dated September 6, 1892.

Application filed April 29, 1892. Serial No. 431,175. (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, Indiana, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to improvements in permutation or combination locks, and while the improvements are applicable to locks adapted for various purposes, they are intended more especially to provide a suitable and practical combination-lock which shall be adapted for use on drawers of desks and other devices; and the object is to furnish a combination-lock which can be readily applied to the face of the drawer or other moving portion, and at the same time which shall be simple and cheap in construction, not liable to get out of order, and be safe against ordinary attempts at unlocking by unauthorized parties.

To these ends my invention consists in the various features of construction, arrangement, and mode of operation, substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, Figure 1 shows the face of a drawer or similar article having a lock applied thereto. Fig. 2 is an enlarged plan view of the edge of the drawer with the lock applied. Fig. 3 is a plan view of the rear of the lock, showing the operative mechanism; and Fig. 4 is a detail perspective view showing the bolt and slide-plate.

In the practical use of combination or permutation locks as applied to drawers of bureaus, desks, and the like it has been found inconvenient to properly attach the combination-lock so that it will be securely held, and, further, so that they will be adapted to be applied to drawers having walls or faces of various thicknesses.

One of the primary objects of my invention is to provide a lock which can be readily applied to the drawer without the necessity of special tools, and when applied will be securely held in position, so that it cannot be readily forced, and, further, so that it will fit drawer-faces of various thicknesses.

In the drawings, A represents the front of a drawer or similar device having the lock applied thereto. The lock consists, essen-

tially, of a face-plate B, which is shown as rectangular, having beveled edges and carrying in the present instance two dials C, which are arranged to control the combination or permutation disks D, which are shown as mounted upon standards connected to the dials and secured thereto by pins *d*, so that the disks will rotate with the dials. Various means may be used for securing the disk to the dials, and I preferably make use of the arrangement shown in my prior patent, No. 471,262, dated March 22, 1892, although other means may be applied. Also extending through the face-plate B is a knob E, which is connected with the slide-plate F of the lock, which controls the bolt or latch G, and is in itself controlled by the lugs or dogs H, operating in connection with the permutation-plate in a manner hereinafter more fully described.

The case or frame of the lock is provided with beveled sides I, flaring rearwardly from the face-plate, and the top plate J, which may be a part of the face-plate or secured thereto, is provided with lateral extensions K, projecting beyond the beveled sides and serving as an additional means of securing and holding the lock in position. The bottom plate L of the lock may also be formed integral with the face-plate or separate therefrom, and is preferably rabbeted or mortised, as at *l*, to furnish a bearing for the sides I and to keep them firmly in position, and the rear of the lock may be covered with a plate or left open, as shown. The face-plate B extends slightly beyond the beveled sides I, where they connect therewith, as shown at B', and form a rib or bearing which is adapted to rest upon the face of the drawer-front A. With this construction it will be seen that it is only necessary in applying the lock to any drawer to cut away a portion of the upper edge of the drawer equal to the length of the lock by sawing or otherwise cutting it on a bevel corresponding to the inclined sides I of the lock, and it makes no difference whether the supporting front board is the same width as the lock, as shown in Fig. 2, or is narrower or wider, as indicated in dotted lines *b*, Fig. 2. This portion of the board being removed, the lock is slid vertically downward into the space with the beveled sides I closely fitting the cut-away portions, and the projecting ribs B' ex-

tending on the outside of the board. It will be seen that the lock is firmly held in position against the forcible removal by pulling out or pushing in the bevel portions I, preventing the lock being drawn outward and the ribs or flanges B' preventing its being forced inward, and this whether the lock is of the same thickness as its supporting-board or not.

As an additional means of securing the lock I prefer to use the extensions K of the top plate J, which can be fitted into recesses in the face of the board A and secured by a screw, if desired. This prevents any possible removal of the lock or slipping out of place, except intentionally. It will thus be seen that the lock can be made exceedingly strong and at the same time may be readily applied without any special tools, and when applied it is secured in position, exposing the dials and bolt-operating knob ready for use, and one size or thickness of lock can be applied to various-sized drawers or boards A.

While I can use with the lock-frame above described various combinations of devices, I preferably provide the disks D with serrated or saw-tooth edges d' , and at some point in the periphery of each disk I provide a notch D', adapted to receive the lugs or dogs H when the disks are in proper position to open the lock.

Mounted on the face-plate B is a slide-plate F, having an upward-turned portion F' and a rearward-projecting flange F², and also provided with a slot or opening for the passage of the bolt or lug G. The rearward portion of this plate is slotted or bifurcated at f , and has an upward-turned rear end F³. This slide-plate is guided on the face-plate by the stud M, which is secured to the face-plate of the lock, and also fits in the lock f of the slide-plate. This stud is also provided with an opening m , through which the rod G' of the latch G slides, and interposed between the stud and head of the latch G is a spring N, which normally presses the bolt or latch and holds it in position.

Mounted on the face-plate at the rear of the slide-plate are the lugs or dogs H, having upward-turned ends H', which are adapted to enter the notches D' in the disk D. These dogs are pivoted at h , and are normally under the stress of a spring O, which holds their inner ends in contact with the upward-turned rear ends F³ of the slide-plate, so that normally they are in the position further shown in Fig. 3. With this arrangement the operation of the lock will be understood, and it will be seen that until both of the dials C on the face of the lock are turned to the proper position, so as to bring the notches D' opposite the projections H' of the lugs or dogs H, the bolt cannot be withdrawn; but when the disks are turned to the proper position by means of the knob E the slide-plate and bolt or latch can be retracted by the pressure of the spring N, and the rear upward end F³ of this plate

will tilt the lugs or dogs and allow their extremities to enter the notches D' of the disk, when the drawers can be opened.

It will be seen that in a lock adapted to a drawer there is an advantage in having the lugs or dogs at the rear of the slide-plate, as gravity tends to hold them out of their unlocking position, so that it requires a positive movement to force them into the notches of the disk, and while I have shown a spring O which tends to assist gravity in some instances I have found gravity to be sufficient. The saw-tooth edges of the disk also perform an important function, as the notches between the edges are preferably made smaller than the width of the projections H', so that these projections will not fit in between the teeth and aid in unwarranted opening of the lock, and by having two disks, each provided with saw-tooth edges and two lugs, it is exceedingly difficult to manipulate the disks to determine their proper position for opening the lock, and it renders the combination-lock safer and less liable to picking.

What I claim is—

1. A combination-lock for drawers, comprising the face-plate carrying the dial and the beveled sides, the face-plate extending beyond the beveled sides, substantially as described.

2. The combination-lock for drawers, comprising the face-plate, the beveled sides, the face-plate extending beyond the beveled sides, and the top plate having the extensions K, substantially as described.

3. The combination, with a drawer having a portion cut away on a bevel, of the lock having beveled sides and a face-plate carrying the dial the edges of which extend beyond the bevel sides and fitting the beveled cut-away portion in the drawer, substantially as described.

4. In a permutation-lock, the combination, with the disks, each provided with a notch, of the sliding plate, a bolt operated by the sliding plate, and the dogs arranged at the rear of the sliding plate and adapted to enter the notches in the disk, substantially as described.

5. In a permutation-lock, the combination, with the disk having saw-tooth edges and a notch in each disk, of the slide-plate carrying the latch and the pivoted dogs arranged at the rear of the slide-plate and adapted to enter the notches in the disk, substantially as described.

6. In a permutation-lock, the combination, with the disk, of the slide-plate carrying the latch and having an upward-turned rear end, of the pivoted dogs bearing on said upward end and a spring for retaining them in position, substantially as described.

7. In a permutation-lock for drawers, the combination, with the face-plate having the dials, an operating-stud on the outside of the face, the disks mounted on the rear of the face, having saw-tooth edges, and a notch in

the edges, a slide-plate carrying a latch and
mounted on the rear of the face-plate, the dogs
at the rear of the slide-plate, a top plate hav-
ing an opening for the bolt, and the lateral
5 extension K and the sides of the lock being
beveled, 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:

M. ARBUCKLE,
J. E. MORRIS.