J. H. KINSMAN.

Indicator-Lock.

No. 162,663. Patented April 27, 1875.

Fig. 1.

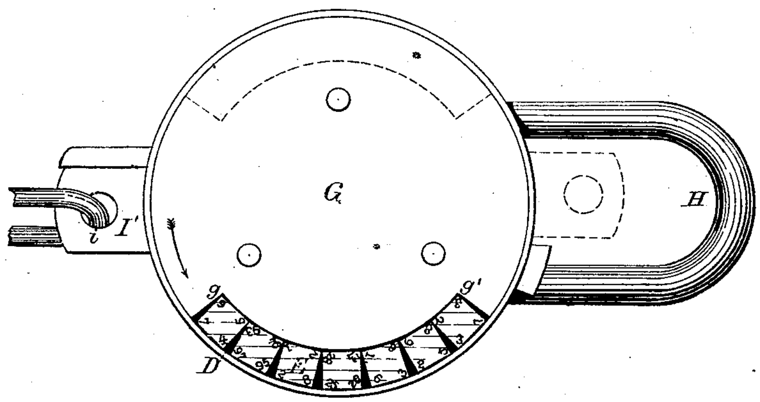
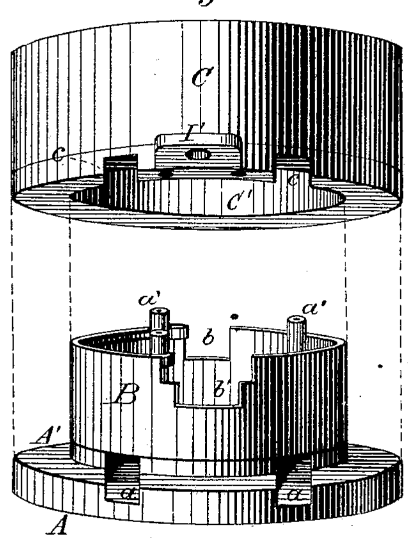


Fig. 2.



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2 Sheets--Sheet 2.

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Fig. 3.

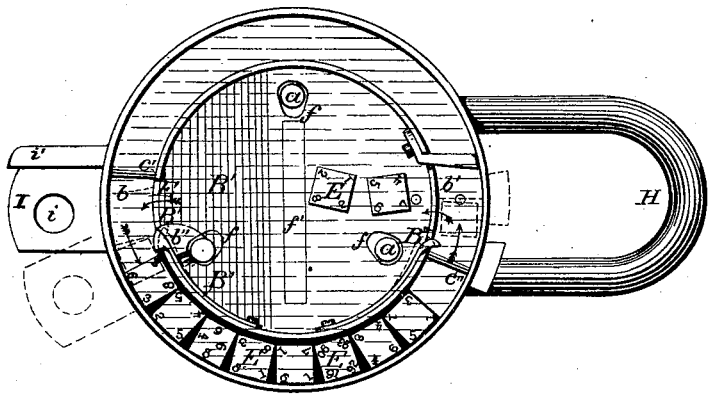
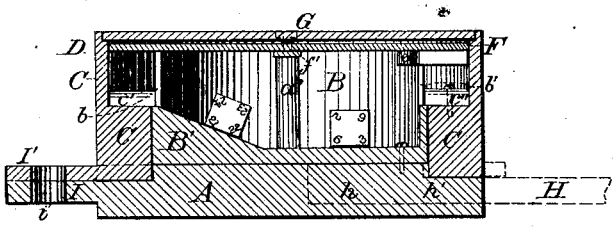


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN H. KINSMAN, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN INDICATOR-LOCKS.

Specification forming part of Letters Patent No. **162,663**, dated April 27, 1875; application filed January 7, 1875.

To all whom it may concern:

Be it known that I, JOHN H. KINSMAN, of Salem, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Indicator-Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon, which form a part of this specification.

Fig. 1 is a top plan view. Fig. 2 shows the back with the interior chamber detached from the casing or jacket which surrounds it when in position. Fig. 3 is a top plan view with the cover or upper plate removed. Fig. 4 is a central vertical section.

The object of my invention is to produce an indicator-lock which shall be of simple construction, and capable of such multiform and numerous changes as to present a device that will practically defy tampering; and to this end it consists, first, in using in connection with a lock a receptacle or case conveniently arranged and having a series of cubes suitably marked, stamped, or engraved on their faces with figures, numerals, signs or tokens, so as to form an indicator-lock, all as will be hereinafter more fully and clearly explained. Second, in combination with an indicator-lock, so made and adapted for use that the signs, figures, numerals, or other device used for denoting the integrity of the lock, shall be formed by chance without the least control of the person affixing or manipulating said lock. Third, in using, in connection with an indicator-lock, a cube or cubes having on their faces numerals placed diagonally in each of four corners—that is, in the corners and on lines from corner to diagonal corner—as will be fully set forth hereinafter. Fourth, in the novel construction and combination of the device embodying an indicator, a padlock, and a lock or fastening device, all as will now be set forth at length and fully explained.

In the accompanying drawings, A is the back or base plate of the device. B is the interior chamber, which is fitted to or upon the back or base plate in any suitable or desirable manner. C is the jacket or case, its lower or thicker portion C′ resting upon the shoulder or rabbet A′ of the base-plate A, but so as to be moved easily and freely thereupon. The inner side of said thicker portion embraces and almost entirely covers the outside of said interior chamber B, while its upper part forms the outer wall of path or space D, in which the cubes E move or are allowed to stand under glass F. This glass is held in position by resting on the upper edges of chamber B and under the outer plate G, which plate is secured by bolts *a′* from base-plate A headed on the top. The said bolts passing through holes *f* in the glass plate at different places, afford an additional stay or security against the jostling of the glass.

In the base-plate A are made suitable recesses *a*, which, in their outer portions, are grooves in the upper face of shoulder A′, but, extending under the chamber B, have at their inner part a much larger size; and likewise in the lower face of C′ of the inclosing-jacket are notches *c*. Said notches and the grooved parts of recesses *a* both so correspond in position and size when brought into connection with each other by the revolution of said jacket C on the base-plate A, as to admit the free entrance of the ends *h* of the hasp H of the padlock into and within the whole depth of said recesses. The ends *h* are larger or thicker than the other portion of the hasp, and this enlargement forms a shoulder at *h′* on the hasp, so that when said enlarged ends have been placed within said recesses, as above, and the said jacket turned upon the base-plate A, its lower and thicker portion C′ comes close upon and in contact with said shoulder *h′*, and holds the same, so that said hasp is thus firmly and rigidly fixed in position.

The upper face of C′ on the inside of the jacket forms a shoulder or rabbet; a portion of this, viz, from *c′* to *c″*, is a little lower than the remaining part, and affords the seat upon which the cubes are moved when they are being set, or on which they rest when they are fixed. By this construction *c′ c″* form shoulders, by means of which, in the revolution of jacket C, the cubes may be moved to and fro in setting or removing them.

The chamber B is the general receptacle for the cubes E when they are not in use. To af-

ford easy egress for the cubes from said chamber when they are to be set, there is provided on one side an inclined way, B′, and at the upper edge of this is the exit-space *b*, while at the opposite side of said chamber is the inlet *b′*.

The extensions or ends I and I′, respectively, of the base-plate A and the jacket C have suitable holes *i*, or other provision for a padlock or means for confining the two parts together when the indicator has been set, and to secure the same from disarrangement or from being tampered with. The shoulder *i′* on extension I furnishes a stop for the movements of the two parts on each other, as aforesaid.

Across the inner face of glass F is a bar or ledge, *f′*, fastened thereon or cast with the glass. The use of this ledge is to insure the changing of the face of the cubes, or their turning over as they fall from inlet *b′* when the lock is opened.

The cubes may be made of ivory or any suitable material. On the several faces of each are usually placed numerals, not according to any order but at random, so as to insure no opportunity for selection or calculation of the recurrence of any particular numerals. These numerals are placed on the cubes in each corner, and on lines running diagonally from the corner of each face. By this arrangement the numerals in two corners can be read at a glance whichever face of the cube is inspected. Though I now speak of numerals it is evident that I can use any token, symbol, or method of making or designating the faces of the cubes. I usually desire, however, for convenience in use, that the marking shall present a continuous series or symbol. In addition to the incline B′ I may provide guides, as at *b″*, to assist or assure the conduct of the cubes into the exit *b* on their way to make up the combination of the indicator. In use, I have found that eight cubes will probably best answer the purposes of making my indicator as nearly as possible sure, but I do not insist on this number. It may be more or less, as the case may be. Nor do I always mark the cubes in the corners. It may be useful sometimes to mark one or more of the cubes centrally in and perpendicular to each edge of the faces, so that but one numeral can be read at a time. The metallic plate or cap G is cut away on one edge, now shown between *g* and *g′*, Fig. 1, to afford a view of the cubes as placed in position where they are fixed or set. At each end of the path or space D, under the glass, which is formed in the upper part of the thicker portion C′ of the incasing-jacket, as has been already described, are placed hooked or latch springs B″, the use of the spring at the exit-space *b* being to prevent the return of the cubes through that space into the chamber B after being placed in position between the shoulders *c′ c′;* and the use of the spring at the entrance-space *b′* being to prevent the return of the cubes from the chamber B after being pushed into it by the revolution of the jacket C. The hook or latch end of the spring near the inlet *b′* is chamfered off a little. The one near the exit *b* has a right-angled shoulder.

As thus made and constructed, the operation of my said lock is as follows: The cubes are placed within the inner chamber or receptacle, the glass and the cup secured in position. The ends I of base-plate A and I′ of the jacket C being turned round opposite each other bring the notches *c* and recesses *a* into conjunction, and allow the hasp to be inserted. The end I′ is now turned round till it is stopped by the shoulder or flange *i* on I. The exit *b* is thus placed in such relation to the path or space D as to allow the passage of a single cube. This is effected by holding the lock vertically, or nearly so, the hasp being uppermost. When this cube, sliding up the inclined way and passing through the exit-aperture, finds its resting place in space or path D, as aforesaid, the jacket is turned sufficiently to allow the shoulder *c′* to force the cube past the latch-head of the spring. The motion of the jacket is then reversed, the latch-head now engaging upon one side of the cube prevents its return into the chamber B. This operation is continued till all the cubes in the inner chamber are brought into said path under the exposed place in the glass. The latch-head springs at each end hold the series well in place against any jostling. When, now, the cubes are thus adjusted, the combination is set and the ends of the base-plate and jacket are brought one upon the other and secured by a lock or any fastening device. The numerals, signs, tokens, or symbols on the faces of the cubes, which constitute the indicator, are then noted and recorded. In the present method of illustration the numerals across the lower edge of the cubes might constitute the combination to indicate whether the lock has in any manner been tampered with, or the series on the upper edges can be so used, or the numerals on the lower edges of each cube at right angles to the length of the openings in face of the lock, or those in the upper edge, or any arbitrary method may be used for reading or recording the numerals, or any portion of them, on signs or tokens on the face of the cubes. The changes in these methods are numerous, but very simple. When it becomes necessary to open the lock the ends I and I′ are disconnected from each other, and while the lock is held in a vertical position, as before described, the jacket is turned upon the base. In this motion the shoulder *c′* drives along the cubes, which force down the latch-head spring, near the inlet-space, and one by one they come into conjunction with this aperture, where they fall into the chamber, the projection on the inner face of the glass insuring the overturning of the cubes.

It will be seen that when the lock is made and constructed as has been generally explained above, the arrangement of the cubes

in the exposed place under the glass face will be purely a matter of chance; that it cannot be regulated by any wit or skill of manipulation, but must in each instance be simply accidental. When several cubes are used there will be practically no danger of the combination of numerals repeating itself. It would be likewise if any other means or device were used upon the faces of the cubes as a substitute for the numerals; consequently there can be no tampering with the lock without certainty of exposure, since the cubes, when once disturbed, cannot be again so set and displayed as to indicate the same combination which had been dislodged or interfered with.

In details of construction I do not limit myself to a lock circular in form. The mere shape is but of little importance, and is only a question for the mechanic to settle. Sometimes I have made the several parts rectangular, the inner part sliding up and down to produce the necessary motion to move the cubes or to return them to their receptacle, and yet other shapes and forms and combination thereof (not now necessary to recite) can be used.

In manufacture of my device it is evident that most of the parts can be stamped out of metal. These details of construction, however, in no way relate to the essential novelty of my invention, but belong merely to the mechanical skill of constructing it.

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

1. An indicator-lock, substantially as hereinbefore described, provided with a series of cubes having suitable numerals or other symbols on the several faces of each, substantially as and for the purposes set forth.

2. The combination of base-plate A, jacket C C′, chamber B, and cubes E, substantially in the manner and for the purpose set forth.

3. The cubes E, engraved, stamped, or otherwise marked in their corners with numerals placed diagonally, and combined and used with an indicator-lock, substantially as and for the purposes set forth.

4. The device herein described, consisting of base-plate A, chamber B, jacket C, hasp H, projections I I′, glass F, cap G, and cubes E, all combined and operating substantially in the manner set forth.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

JOHN H. KINSMAN.

Witnesses:

JAS. F. RUSSELL,

E. F. M. FAEHTZ.