

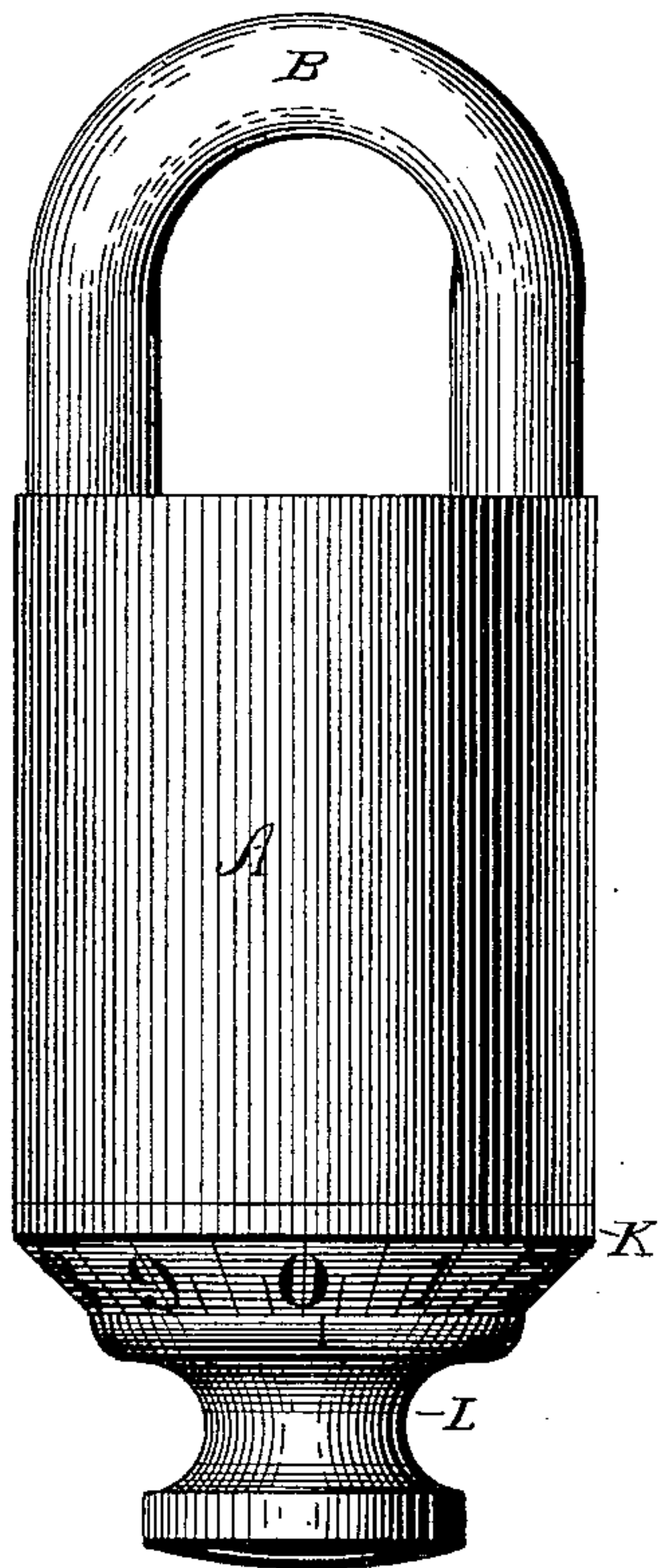
(Model.)

E. W. WILSON.  
PERMUTATION PADLOCK.

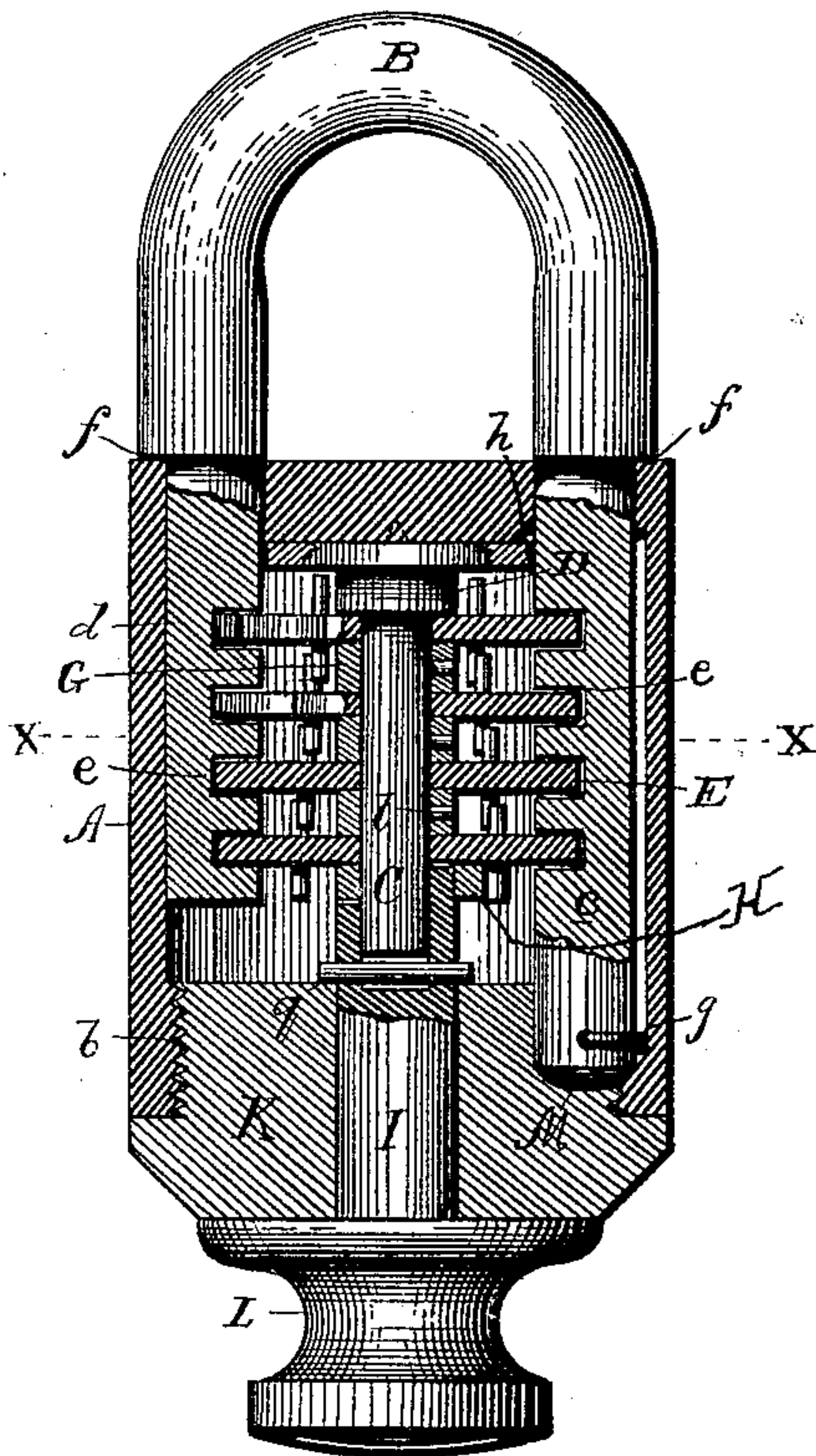
No. 327,046.

Patented Sept. 29, 1885.

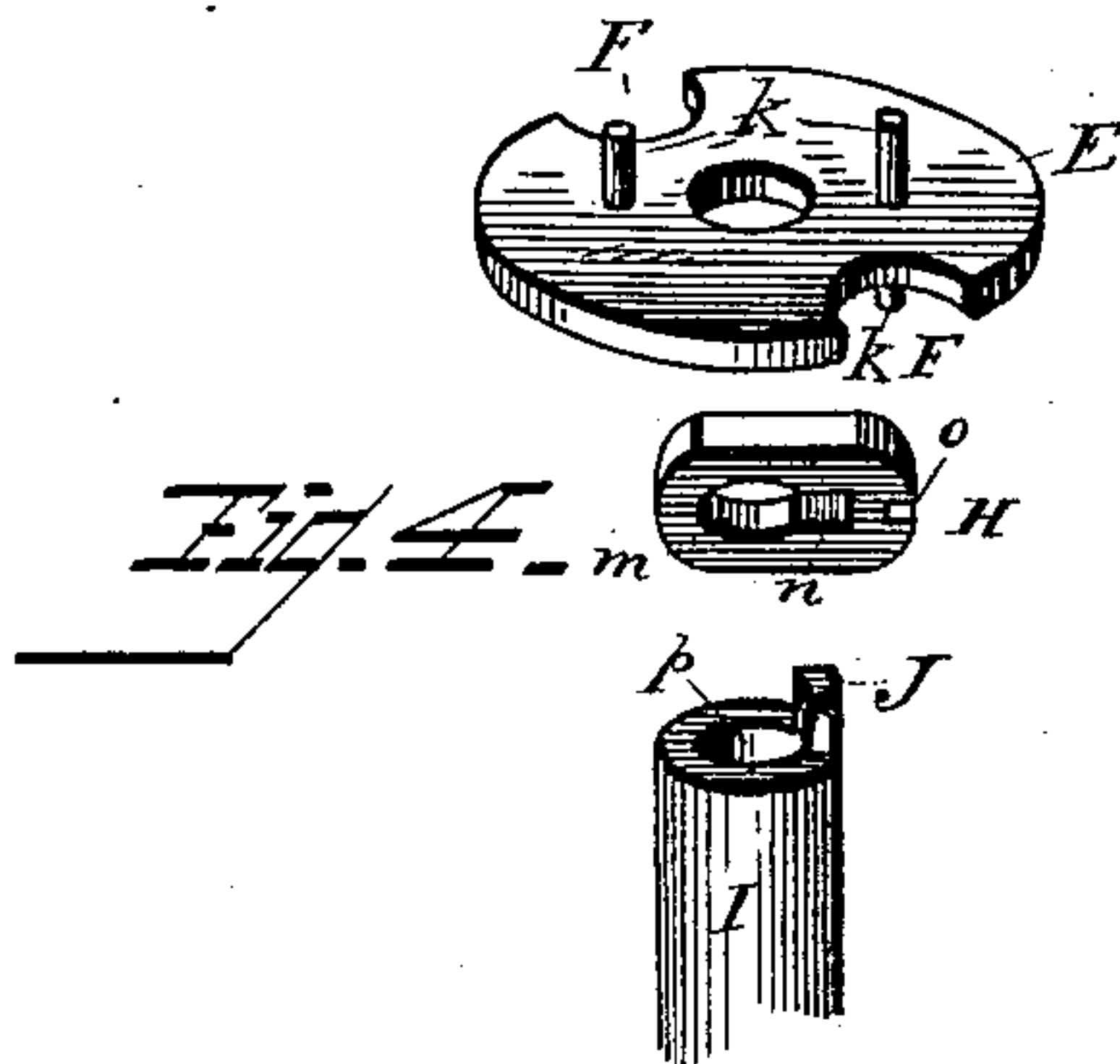
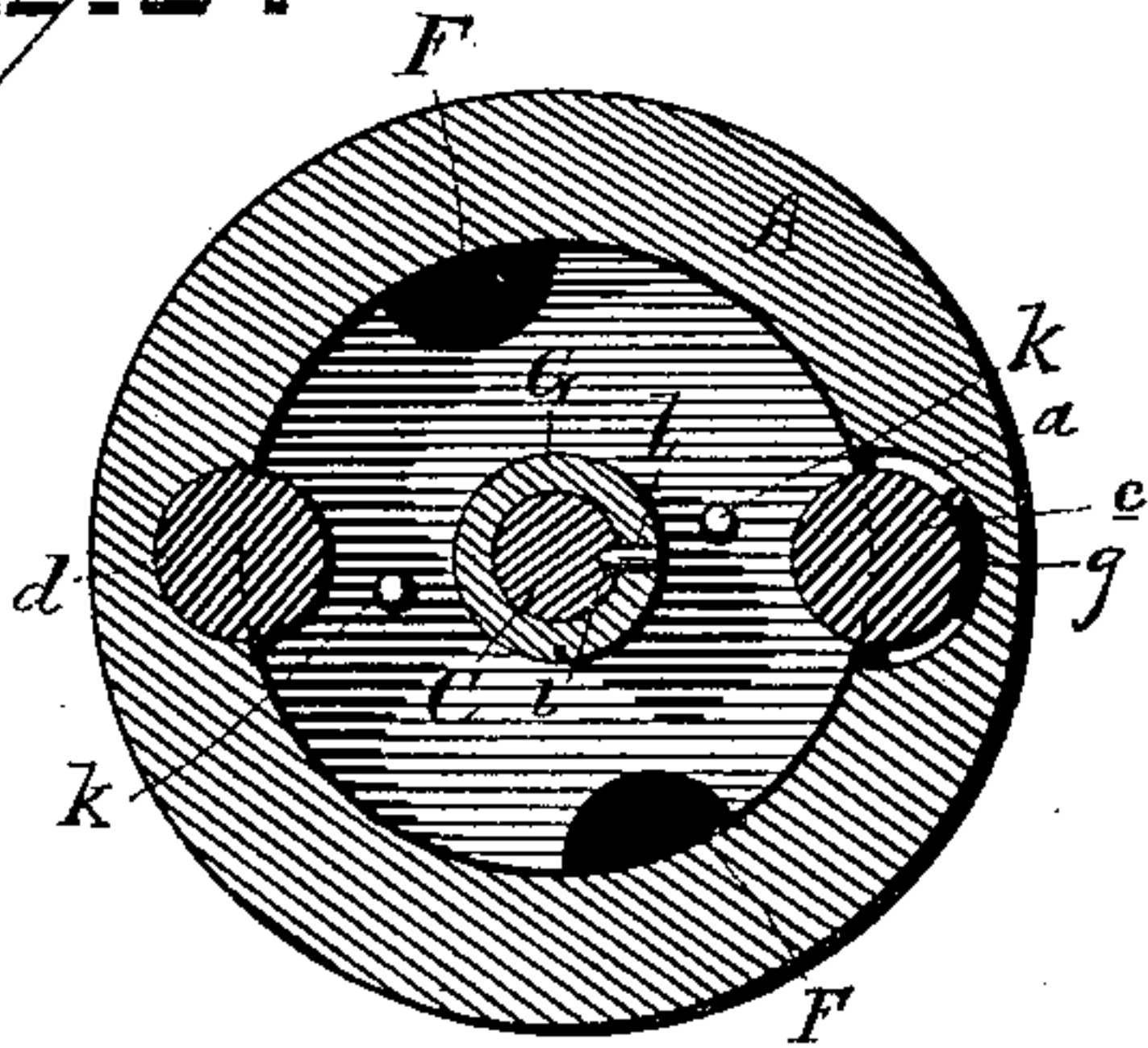
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses  
*Wm. Spiden*  
*L. L. Miller.*

Inventor  
*Edgar W. Wilson.*  
By his Attorney *Chas. H. Forder*



# UNITED STATES PATENT OFFICE.

EDGAR WM. WILSON, OF DENVER, COLORADO.

## PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 327,046, dated September 29, 1885.

Application filed May 29, 1885. (Model.)

*To all whom it may concern:*

Be it known that I, EDGAR W. WILSON, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Permutation-Padlocks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

This invention relates to permutation-padlocks, and has for its objects to simplify and cheapen and render more positive and efficient in operation this kind of lock, and also to prevent or guard against tampering therewith by meddlesome persons; and to these ends, and to such others as the invention may pertain, it consists in the peculiar combination and the novel construction and arrangement of parts hereinafter more fully described, and then specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which Figure 1 is a side elevation of the preferred form of a lock embodying my improvements. Fig. 2 is a similar view, partly in section, showing the details of arrangement. Fig. 3 is a transverse section on the line *xx* of Fig. 2, and Fig. 4 is a perspective detail of parts that will be specifically referred to hereinafter.

Referring to the drawings by letter, A is the shell or casing within which the tumblers are concealed. The inner wall of this shell is recessed vertically upon opposite sides, as shown at *a*, for the purpose hereinafter explained. At its open end this shell is internally threaded, as seen at *b*, while its opposite end is provided with two holes coincident with the recesses *a*.

B is the staple, having a long leg, *c*, and a short leg, *d*. Each of these legs is notched upon its inner face, as shown at *e*, there being four notches in each leg, and the notches of one leg on the same horizontal plane as the notches in the other leg. Each leg is provided with a shoulder, *f*, to limit its movement within the shell, and the long leg *c* is provided near its end with a stop, *g*, to prevent its being entirely withdrawn from the shell. This stop is preferably formed by a

wire coiled around the leg of the staple and having its ends passed through an opening therein. The opening in the end of the shell is countersunk inside thereof, as shown at *h*, to receive this stop when the staple is withdrawn to its fullest extent.

C is the tumbler-spindle, provided with a spline, *i*.

D is a tumbler rigidly secured to this spindle, and preferably resting against the inner face of the end of the shell, although the shaft may extend through the same and be stepped in the said end, as shown in dotted lines in Fig. 2.

E are locking-tumblers, each of which is constructed substantially as shown in Fig. 4, notched on its diametric opposite edges, as shown at F, and having a central opening to permit its sleeving on the spindle. These cut-away portions or notches correspond in shape to the shape of the staple-legs. Pins *k* project upon either side of the tumbler, which latter may be of any desired number and sleeved upon the spindle C. These tumblers are spaced by the collars G, each of which is provided with a pin or feather, *l*, which engages the spline *i* in the tumbler-spindle C, and prevents said collars from turning on said spindle.

H is a locking-plate, having an opening, *m*, to receive the tumbler-spindle, which opening is extended to form a rectangular slot, *n*, the object of which will soon be apparent. A slot, *o*, is also formed in one end of this locking-plate. When the tumblers are all sleeved on the spindle C, as shown in Fig. 2, this locking-plate is sleeved on top of them, when the slot *o* engages one of the pins on the top tumbler.

The operating-spindle I has formed on its end a lug, J, projecting from one side of the opening *p*, which opening is adapted to receive the end of the tumbler-spindle and form a guide-bearing therefor, while the lug J is adapted to pass within the slot *n* of the plate H, thus locking the parts together. The operating-spindle passes loosely through the cap K, and is prevented from accidental withdrawal therefrom by a pin, *q*, passed through it, as shown in Fig. 2. This cap is threaded to engage the thread on the shell or casing, and its outer rim, which is preferably beveled, is provided with figures or characters, as is



common with such caps. The knob or operating-handle L is also provided with a notch or indicating-mark, as clearly shown in Fig. 1. A recess or channel, M, is formed in the sides of the cap, which is coincident with the long leg of the staple when the parts are in position, as shown in Fig. 2, and the long leg of the staple entering this recess prevents the cap from being unscrewed.

The tumbler D is formed similar to tumblers E, and correspondingly notched, and as said tumbler is integral with or rigidly secured to the tumbler-spindle the latter is prevented from turning when the staple is in place.

In operation, the parts being in the position shown in Fig. 2, and the combination being known, the knob of the operating-spindle is turned until the indicating-mark on the knob is opposite the first number or character of the combination on the cap. This brings the notches of the first tumbler E coincident with the notches in the tumbler D, and also with the first of the notches in the legs of the staple B. The knob is then turned in the opposite direction to the next number or character of the combination, which brings the notches of the next tumbler in line with the one already in line with the tumbler D and notches in the legs of the staple. This is repeated till all the tumblers have been brought into line, when the staple can be withdrawn far enough to remove the shorter leg from the shell, the long leg being prevented from coming entirely out by reason of the stop *g*, as already described. In locks when the staple is entirely removed it is apt to be misplaced or lost; but by my construction the staple can never be separated from the lock. Consequently it is always ready for use, and it also forms a convenient means for hanging the lock up when not in use.

To lock the parts it is only necessary to insert the staple till its shoulders *f* impinge against the end of the shell and then turn the

operating-knob a few times to throw the tumblers out of line and the lock is locked, and can only be unlocked by a party knowing the combination, and in the manner previously described.

While I have shown four locking-tumblers, I do not intend to limit myself to that number, as it is evident that a greater or less number may be employed, as the security of the lock may require, it being of course understood that the notches in the legs of the staple are varied to correspond with the number of tumblers used.

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

1. The combination, with a tumbler-spindle and a series of tumblers sleeved thereon, of a locking-plate and an operating-spindle adapted to engage said tumbler-spindle and locking-plate, substantially as and for the purpose specified.

2. The combination, with a tumbler-spindle carrying a series of tumblers provided with pins, as shown, and a locking-plate having a slot to engage one of said pins, of an operating-spindle adapted to engage said tumbler-spindle and locking-plate and form a guide for the former, as set forth.

3. The combination, with a casing, a spindle carrying a series of locking-tumblers, a locking-plate, and a cap, of an operating-spindle passed loosely through said cap and having a lug engaging a slot in said locking-plate, and a staple having a long leg adapted to engage a recess in said cap, as and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EDGAR WM. WILSON.

Witnesses:

GEO. C. NORRIS,  
R. A. LONG.