

(No Model.)

C. H. WOOD.
PERMUTATION PADLOCK.

No. 529,092.

Patented Nov. 13, 1894.

Fig 2.

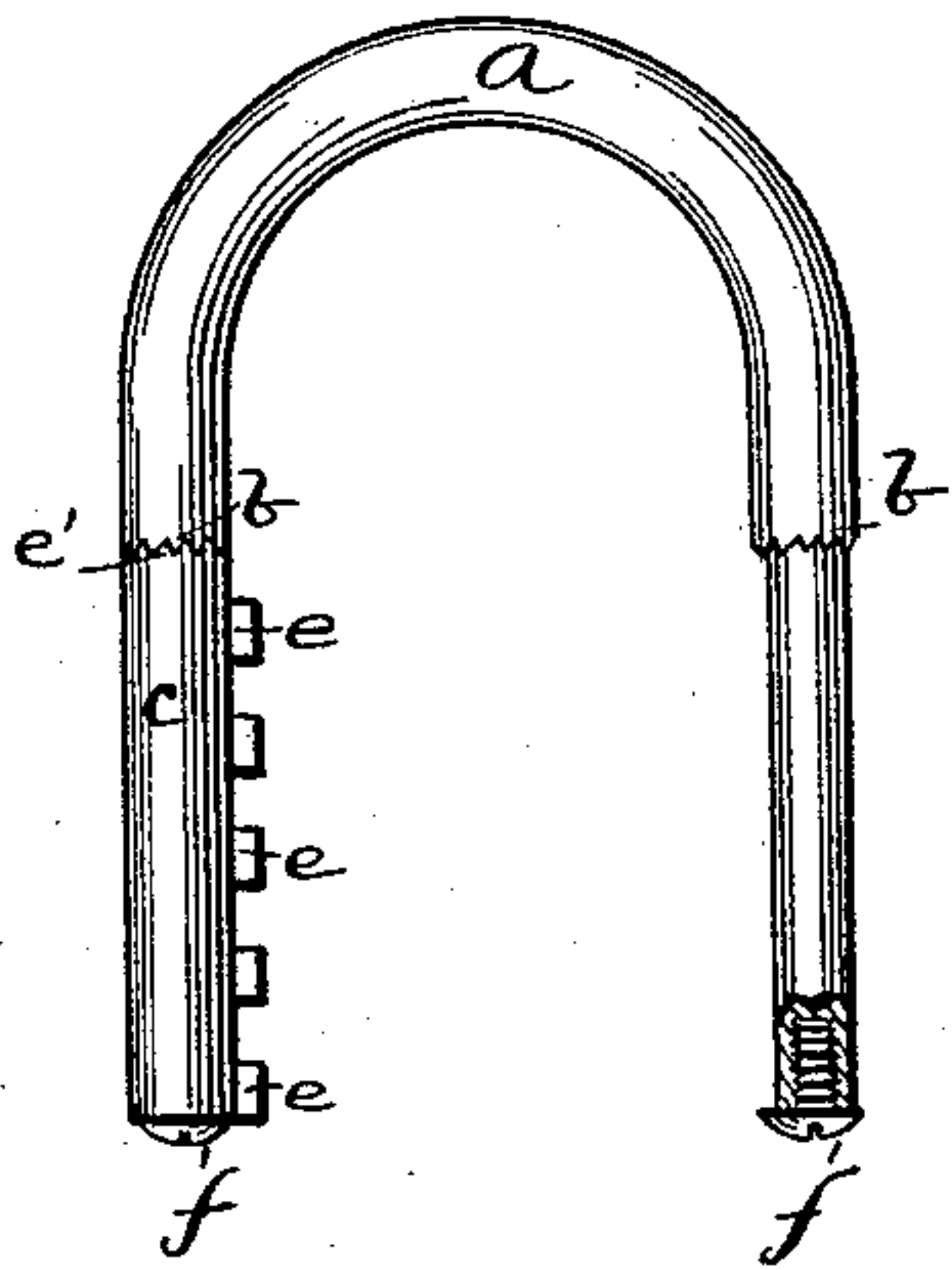


Fig 1.

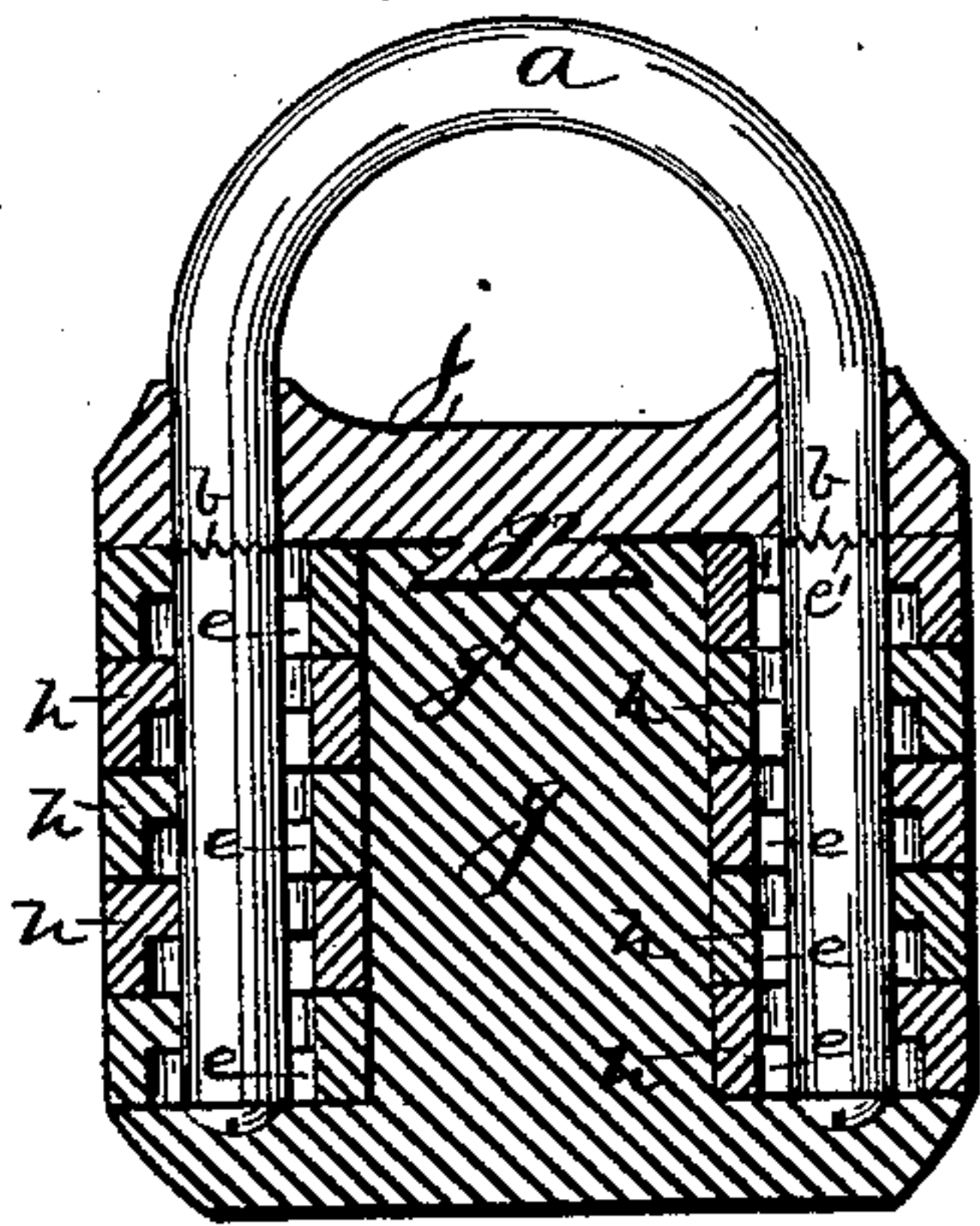


Fig 3.



Fig 4.

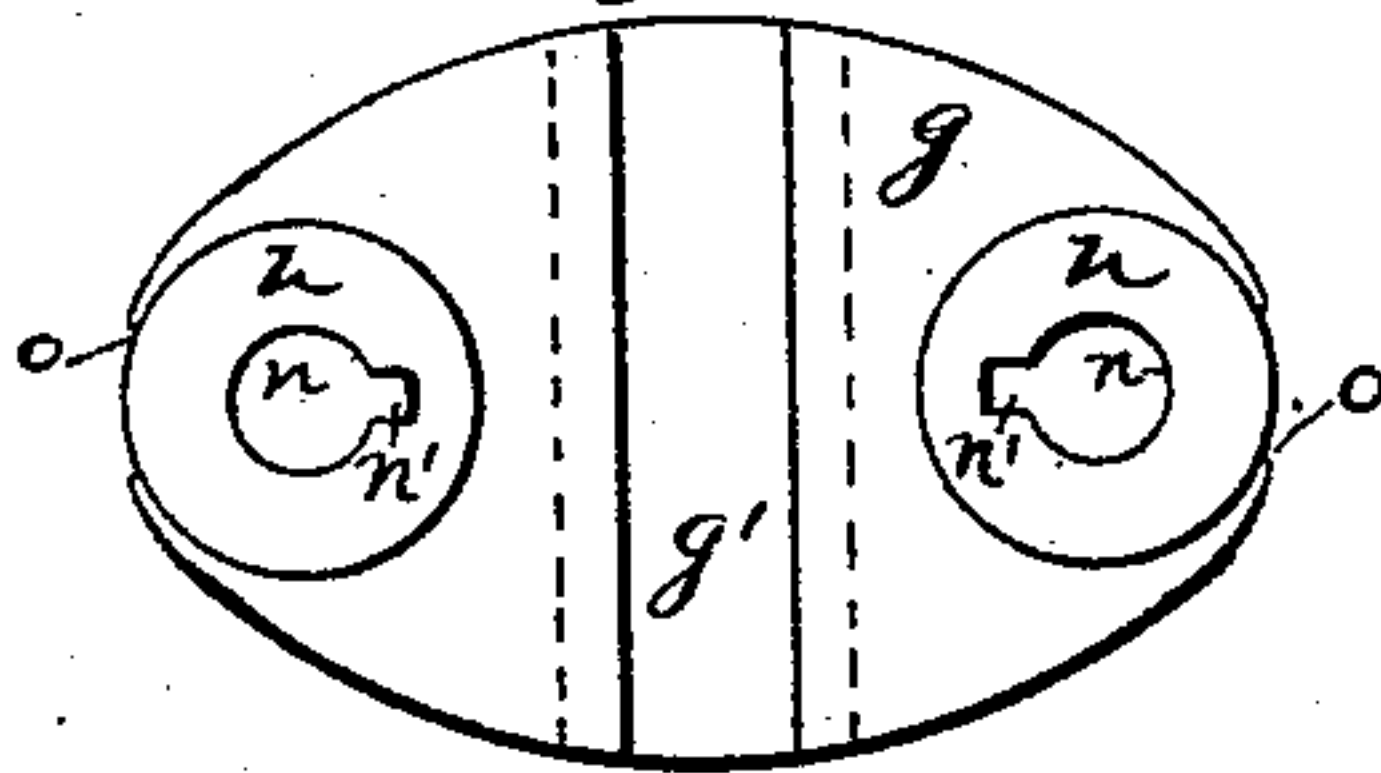


Fig 6.

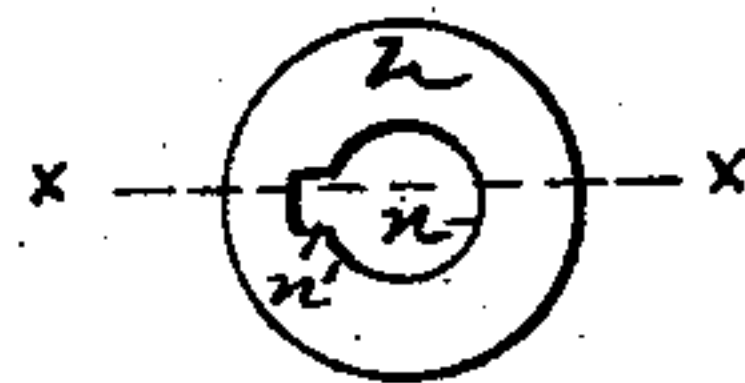


Fig 7.

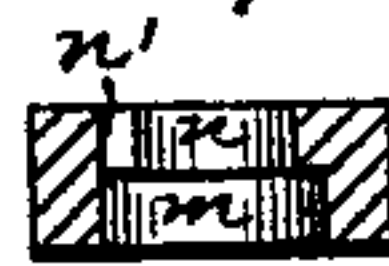


Fig 8.



Fig 5.

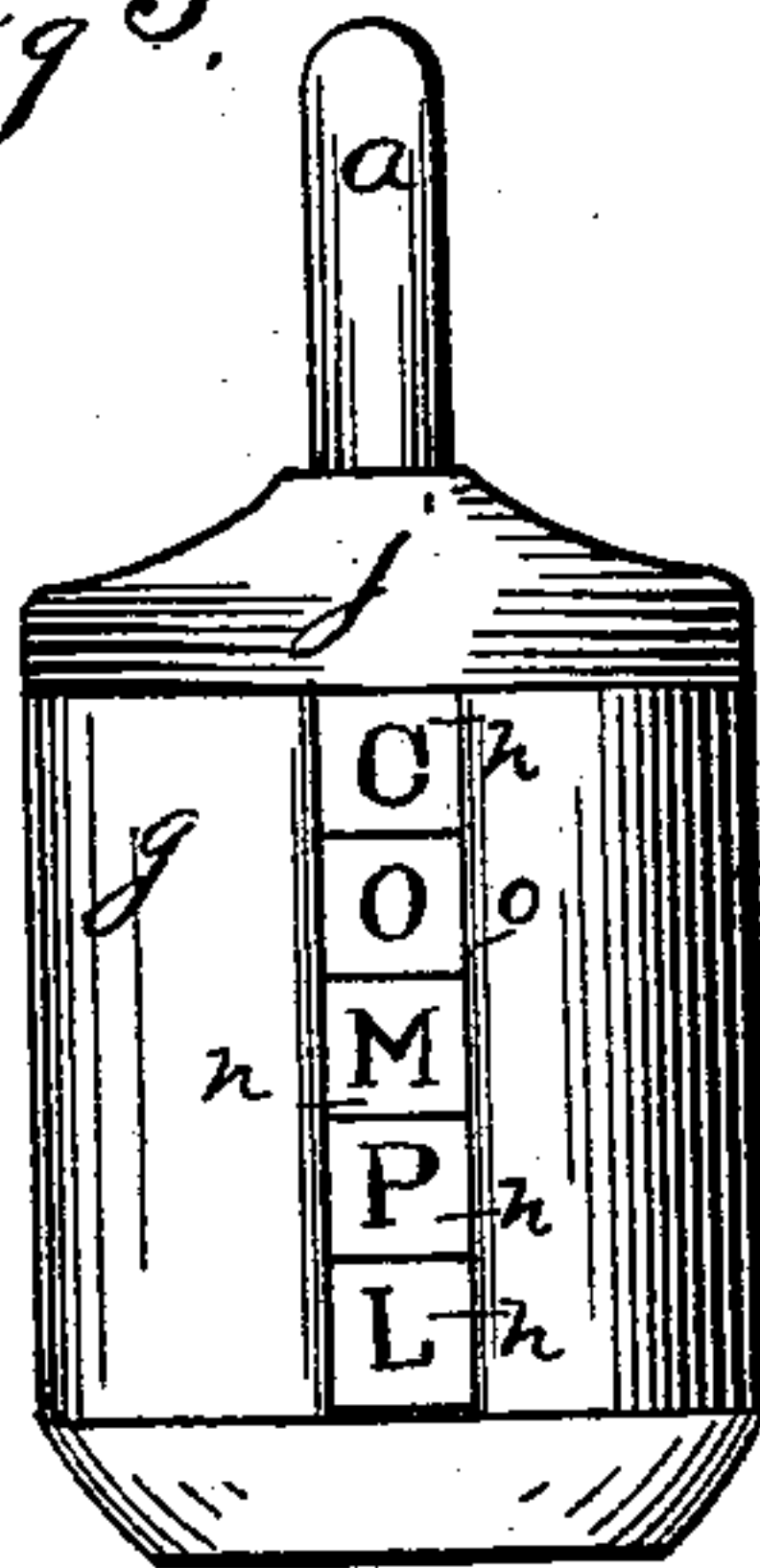
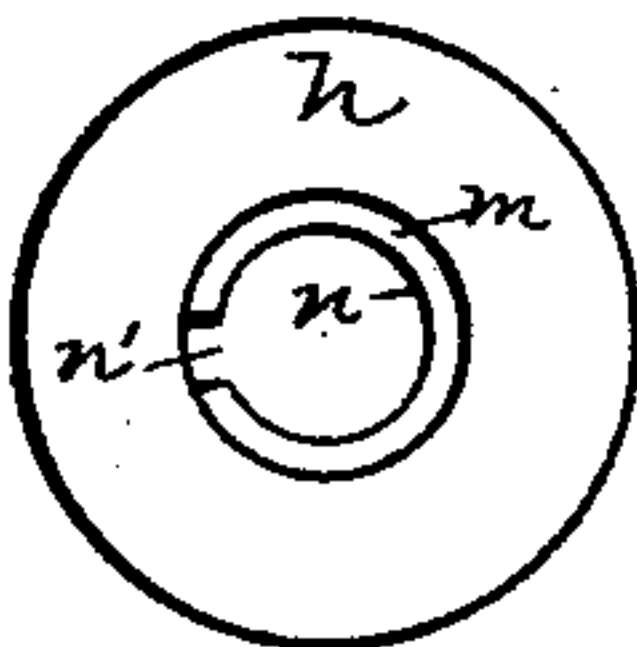


Fig 9.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES H. WOOD, OF DAYTON, OHIO.

PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 529,092, dated November 13, 1894.

Application filed January 6, 1894. Serial No. 496,017. (No model.)

To all whom it may concern.

Be it known that I, CHARLES H. WOOD, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Combination-Locks; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in combination locks.

The object of the invention is to provide a combination pad-lock embodying simplicity of mechanical construction, and efficiency, to a degree that meets all requirements.

To this end the improvements consist in a construction that will be hereinafter described in the specification and pointed out in the claim.

In the accompanying drawings forming part of the specification, Figure 1, is a vertical section of my improved combination lock; Fig. 2, a detached view of the staple, one of the serrated sleeves removed; Fig. 3, a detached view of one of the serrated sleeves; Fig. 4, a plan view of the shell, with the cap removed; Fig. 5, a side elevation of the lock; Fig. 6, a detached, plan view of one of the permutation wheels; Fig. 7, a section of one of the permutation wheels on the line $x-x$ of Fig. 6; Fig. 8, a detached side elevation of one of the permutation wheels, showing the characters thereon; Fig. 9, a view looking on the underside of one of said permutation wheels, showing the two degrees of the opening therein.

In the detailed description similar letters of reference indicate corresponding parts.

(a) represents the staple, having its end portions of less diameter than the remaining portion, and forming a serrated shoulder (b).

(c) represents sleeves having a series of notches (e) extending longitudinally thereon. These sleeves have one end terminating in serrations or teeth (e') and inclose the ends of the staple.

(f) are screws that penetrate the ends of the staple and by means thereof the teeth (e') on the sleeves and those on the staple are locked

with each other and said sleeves are thereby maintained against rotation.

(g) represents the shell having a chamber formed in each side for the reception of the permutation wheels (h), and a dovetail slot (g') across the upper surface, in which a similar portion (g²) projecting from the lower surface of the cap (j), is adapted to fit and therein be secured against a vertical removal. The permutation wheels have an opening of a two-fold diameter as (m) and (n). The former permits of said wheels being turned on the sleeves (c) until the proper letter forming a part of the combination appears at the sight opening (o) in the shell, and the latter opening, —(n)— prevents the staple from being removed until the combination has been worked, at which time, the recess (n') extending from the opening (n), is on a vertical line with the notches (e) on the sleeve, and said sleeves are permitted to pass there-through, and the staple be removed. There is a sight opening (o) on both sides of the shell; one for each set of permutation wheels.

The letters shown in Fig. 8 constitute one half of the word forming the combination the other half being on the other set of wheels and appearing through the sight opening, diametrically opposite that shown in Fig. 8. When the combination is worked it places the recess (n') in all the permutation wheels, on a vertical line, thus permitting the notched sleeves upon the staple, to be removed.

The combination, it will be understood, may be variously changed by altering the respective positions of the several wheels. The letters forming the regular combination, are on each wheel, at a point diametrically opposite the recess or notch (n'). The letters, however, constituting the combination are not departed from. By the use of the sleeves (c), the letters and word may be entirely changed and the provision of said sleeves is thus additional means for changing the word constituting the combination. In other words, where the sleeves are not used, the identical letters forming the combination, or a portion of them at least, must be used. By the employment of the sleeves these letters may be omitted and others used, forming a distinctly different word. In cases where the lock is of a very small size, it may be advisable in or-

der to preserve the strength of the staple, to
dispense with the sleeves, and form the
notches directly on the staple. It is also pos-
sible to provide other means than the slot
5 (g') and the projection (g^2) to dovetail and
prevent the removal of the cap. For in-
stance, a screw threaded stem may project
from the cap and enter the shell. Where the
lock is exposed to weather I provide means for
10 protecting it, consisting of a case adapted to
slide over the bottom, and extend around the
sides of the lock until its edge fits against the
under surface of the cap. This prevents wa-
ter or dust from finding its way to the in-
15 ternal mechanism. I have not shown this
case in the drawings, not deeming it a part
of the invention.

Having described the invention, I claim—

In a permutation pad-lock, the combination
with the casing having chambers therein, of 20
permutation wheels provided with openings
of varying diameters, a staple provided with
serrated shoulders (b), sleeves inclosing the
ends of said staple, provided with serrations
on their ends to engage with the shoulders on 25
the staple, and teeth on the sides thereof,
whereby the letters forming the combination
may be changed and a new combination
formed, as herein described.

In testimony whereof I have hereunto set 30
my hand this 22d day of December, 1893.

CHARLES H. WOOD.

Witnesses:

R. J. McCARTY,
GEORGE H. WOOD.